Code	Interview #	Excerpt Coded	Codes Used on Excerpt
Administration			
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons
	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, tx compared to colleagues, support for patient, support for surgeons, deservingness, administration, frustration

	1019	these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	cost, lack of resources, insurance, administration
	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	administration, support for surgeons, PICC line risk, futility
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	follow-up care, support for patient, societal issue, administration, tx compared to broader

	1006	Interviewer: Is there someone you can call in the hospital with addiction medicine experience and expertise?Interviewee: We have a whole service. Actually, a few years ago I went to—it was a small group, kind of grand rounds type thing, I can't remember who sponsored it. It may have been infectious disease where the person from addiction medicine spoke, it was quite interesting.	collaboration with addiction medicine, multidisciplinary group, administration, support for surgeons
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good.	support for surgeons, changes over time, follow-up care, PICC line risk, administration, collaboration with addiction medicine, futility, societal issue
	1007	Have you ever experienced conflicts within your team or with another staff when it comes to treating patients with injection drug use disorder? Speaker 2: Within our surgical team? Speaker 1: Yeah. Speaker 2: No. Speaker 1: Okay. Speaker 2: With, with the rest of the hospital, I mean, not conflicts, but you know, disagreements, in management style. Speaker 1: So were these disagreements in management style resolved. Were they resolved? Speaker 2: Yeah, it's always resolved.	tx compared to colleagues, disagreements (professional), administration, defensive
	1007	Who do you think needs to make these changes on how much time is needed for these changes? Speaker 2: The administration at the hospitals needs to have more commitment to it, if, if that's what they're gonna do. The time depends how well they're up there and executing it.	administration, time constraints, accountability
	1017	: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on	support for patient, frustration, administration, follow-up care, lack of resources, multidisciplinary group

		them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	
	1017	Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, administration, cost, perception of risk in PWID
	1017	How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	tx compared to broader, multidisciplinary group, support for surgeons, administration
	1013	How knowledgeable do you feel about the available treatments for people who use drugs?I'm not very knowledgeable. I really don't, um, I'm not qualified to prescribe the pharmacologic treatment for it, its not what I do. Would you want to receive more training on this?To be honest with you um, probably not. Its kind of interesting to hear about at grand rounds but where I am in my practice, I don't even write post-op, I don't even write	lack of knowledge, training, time constraints, administration

		discharge medications for my patients, the PAs do so understanding it to the degree that is necessary to incorporate it into our standard practice would be useful but the exact details I don't need to know	
	1003	Respondent: Well, I would like to see his efforts supported. Right now, he's the only one we have. I think – this is going to - I want the hospital to support him. In terms of me, my efforts, well I've got no major issues there. I mean, if I book someone up for surgery, then I don't [meet] any resistance from the hospital. They, you know, they don't – they trust our judgement about who needs an operation, and then our job to do a – execute, and do a good operation. So not particularly. I don't have any outstanding conflicts with the hospital in terms of support for the program.	collaboration with addiction medicine, support for surgeons, administration, discussing addiction, multidisciplinary group
	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to	support for surgeons, administration, tx compared to broader, accountability, desired changes, follow-up care, frustration, lack of resources, post-operation care, multidisciplinary group

		be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	
	1011	maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the time. It's not like these patients are going back to their families, their grandparents, or an aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own police I think is a little too much to ask of them.	lack of resources, administration, empathy, frustration, support for patient, PICC line risk, paternalism

	1017	I: Ok…Do you feel supported in your care of people who inject drugs?S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, perception of risk in PWID, administration, cost
	1017	I: How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	tx compared to broader, multidisciplinary group, support for surgeons, administration

	1013	Would you want to receive more training on this? To be honest with you um, probably not. Its kind of interesting to hear about at grand rounds but where I am in my practice, I don't even write post-op, I don't even write discharge medications for my patients, the PAs do so understanding it to the degree that is necessary to incorporate it into our standard practice would be useful but the exact details I don't need to know	training, administration
	1015	: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	support for surgeons, accountability, follow-up care, administration, frustration
	1007	Speaker 1: Who do you think needs to make these changes on how much time is needed for these changes? Speaker 2: The administration at the hospitals needs to have more commitment to it, if, if that's what they're gonna do. The time depends how well they're up there and executing it.	administration, time constraints
	1001	In this group of patients, if they continue the IV drug use, their lifestyle – the future reinfection will be very high. The surgical risk is high enough, and [in this moment] the cardiac surgeon's performance is carefully monitored by this society. So we're very concerned about our operative outcome. So I think if there is a high likelihood the patient would be back on the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	perception of risk in PWID, liability of medical professionals, discussing addiction, reinfection, relapse, administration

	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	collaboration with addiction medicine, support for surgeons, PICC line risk, administration
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	tx compared to broader, follow-up care, administration, societal issue
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so	administration, cost, accountability, insurance, support for patient, support for surgeons, SUD treatment, follow-up care, societal issue

		there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	follow-up care, support for patient, societal issue, administration, tx compared to broader
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac	pain management, post-operation care, perception of risk in PWID, administration, cost

		surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	
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		hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	
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	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	collaboration with addiction medicine, support for surgeons, PICC line risk, administration, blame (secondary), disassociation (secondary)
	1015	I: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	support for surgeons, multidisciplinary group, administration, frustration, follow-up care
	1010	Do you feel supported in your care of people who inject drugs? Supported by whom? Potentially that service? I can't say I have sought their support. We have the multidisciplinary meeting where I hear their views, you know listen to what they have to say. I have sought their medical advice and I think they are always available to give medical advice, but that is just one piece of the puzzle that you need to put together to decide what is the best course. Do you think the hospital could do more to support you in the care of these patients? No, I feel supported by the hospital.	support for surgeons, collaboration with addiction medicine, multidisciplinary group, administration

	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, deservingness, administration, frustration
	1014	If the options were to have a PICC line and go home, have a PICC line and to a nursing facility, or have a PICC line and stay in the hospital, what do you think is the safest option for the patient? S: Hospital is, I don't know if it is safe, to be honest. We had, we had a patient that arrested on the floor, he was using in the bathroom after a valve operation. It was not my patient, it was one of my partners' patient. I walked in, and I saw them doing CPR, they found a needle, they found a syringe and needle in the bathroom. So, somebody, these things happen, you know. Probably safer, than home, you know. Maybe nursing home or a rehab facility, I don't know. I mean, again, it all depends on, on social, you know, insurance, and all these things. And, can you believe, you know, keeping somebody in the hospital for six weeks, getting antibiotics, occupying a bed? Nobody going to be happy, the hospital not going to be happy, the patient won't be happy, the third-party payer won't pay for it even if they have it, so, here we go.	insurance, relapse, PICC line risk, accountability, administration
	1014	If the options were to have a PICC line and go home, have a PICC line and to a nursing facility, or have a PICC line and stay in the hospital, what do you think is the safest option for the patient? S: Hospital is, I don't know if it is safe, to be honest. We had, we had a patient that arrested on the floor, he was using in the bathroom after a valve operation. It was not my patient, it was one of my partners' patient. I walked in, and I saw them doing CPR, they found a needle, they found a syringe and needle in the bathroom. So, somebody, these things happen, you know. Probably safer, than	PICC line risk, insurance, administration, accountability, relapse

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	1009	What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back.	frustration, support for patient, SUD treatment, follow-up care, reinfection, support for surgeons, administration, desired changes
	1009	What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up.	support for surgeons, administration, SUD treatment, follow-up care
	1009	Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	administration, follow-up care, priorities, multidisciplinary group
Blame secondary			

	1012	Does it impact what type of valve you chose? Yes. How so? Because generally they tend to be younger patients and younger patients if they have a valve lesion that's congenital or infectious from some other unfortune, unfortunate happenstance then you would probably advise them on a mechanical heart valve, mechanical heart valves require coumadin, and um, if you have a mechanical heart valve and you don't take your coumadin it's very very dangerous. So, most surgeons, I think do not put mechanical heart valves in people who are known drug users, unless they've been known to, you know, abstain for a long period of time, so you know, and we have all been burned by making exceptions to that rule.	blame (secondary), rigidity (secondary)
	1012	you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not.	blame (secondary)
	1012	I would hope that at some point we get better treatments for the substance abuse which is the problem. What we are treating is a sequela of the problem but what we need to focus on is the problem and right now, even your study is not focusing on the problem, its focusing on how aggressive we are in treating one of the sequela of the problem. I hope that the focus can shift to a. why are so many young people using life-threatening drugs and b. once they have a life-threatening problem as a consequence why do they still do it.	blame (secondary)

		Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around. Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I just say if you use any sort of, you know, if you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on	
	1009	him twice and it came out that he doesn't care	paternalism (secondary), blame (secondary), rigidity (secondary)

		about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn't have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that	blame (secondary), disassociation (secondary), responsibility (secondary), rationalization (secondary)

		after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, “Oh, they need the valve surgery.” And then when it’s time for someone to take care of these patients, long term, there’s no one there. Part of it is patients don’t follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they’re not there to take care of the patient afterwards. There’s a saying “Beware of the courage of the noncombatant.” You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It’s one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you’ll find across the country there’s going to be a spectrum. Some surgeons won’t operate even upfront if it’s secondary to injection drug use. That’s one extreme. And then there’s another extreme where a surgeon wills say, I don't care, I’ll the operation over and over until they’re dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be	responsibility (secondary), rationalization (secondary), blame (secondary)

		managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	
	1009	Interviewer: When talking to the patient, how does their commitment treatment sort of play into your surgical decisions, if it does? Surgeon: The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	paternalism (secondary), blame (secondary)

	1009	Interviewer: Do you think that treatment for endocarditis and people who inject drugs will change in the future? Surgeon: In terms of surgical management? Or? Interviewer: Yeah. Surgeon: No. I think the operations are pretty standard. In the absence of new antibiotics that are much more effective, I think it's still going to be the same. I think you operate on patients with heart failure and mechanical complications. Interviewer: What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	blame (secondary), disassociation (secondary)
	1002	The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	blame (secondary), paternalism (secondary), rationalization (secondary)
	1002	Respondent: Yeah, if the patient is not willing to stop, then why do we need to do the surgery?	redemption (secondary), blame (secondary)
	1011	So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life	blame (secondary), redemption (secondary), rigidity (secondary)

		by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	
	1011	Does the patient's commitment to treatment impact your surgical decisions? This is a hard one to answer. And that's because I think all these patients truly want to commit to treatment at the time they're having, they're facing the dilemma but it's going to be unclear if they are actually going to carry on with their promise. This may sound a little distrusting, I don't think they're actually trying to deceive or lie it's just the situation they're in. They're in a bad situation and they truly feel like they are not going to do drugs anymore once they get the operation. They really want to lead their life and get their act together but once the operation is done then they are back out on the street and they are not feeling as miserable as they were before the operation I think that that becomes a thing of the past and then the temptations of the problem that they are faced with come back again. So, it is really hard to make a judgement as to what is going to happen based on their commitment. The way it does impact it is that somebody who is up front about that they are not going to stop using drugs and they're going to continue to use drugs in that case you have to question the utility of intervening.	SUD (secondary), blame (secondary), redemption (secondary), rationalization (secondary)
	1011	think it's a reasonable comparison if you were to think about it in terms of disease and the treatment in the sense that uh, that the disease is not valve failure, that is the symptom of the problem that the patient is facing, the real problem is their drug abuse thing. If you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant.	blame (secondary), SUD (secondary), responsibility (secondary)
	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something	redemption (secondary), blame (secondary), rationalization (secondary)

		that is not modifiable then you really have to question that operation.	
	1016	S: I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting substance abuse help. Um, and so I'm very up front with that in addition to the risks.	blame (secondary), paternalism (secondary), rationalization (secondary)
	1016	S: Um, pass. I mean I can say that, to get enrolled in a program, to support her so she doesn't return to using drugs, whether that's with methadone or, um, you know, other medications that may be available. Beyond the specifics of that… I: When do you think that would take place? S: Um, a plan should be in place as they are leaving the hospital, or, you know, instituted before they leave the hospital so there's no drop out in care. I: What is the role of medications in that? S: Um, my understanding is that, um, medications such as methadone can help prevent patients from going back to using IV drugs. Um, and is, I don't want to say a bridge, but to some degree, a nice, um, bridge medication. Um, my bias is that, um, while it prevents them from using illegal drugs, it is still a substance that they become dependent on in the long-term.	blame (secondary), rationalization (secondary)
	1016	I: Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the	blame (secondary), redemption (secondary), responsibility (secondary)

		outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	
	1016	endocarditis and a liver transplant in the setting of alcoholism. What do you think of these examples? S: Um, they're both some degree self-inflicted. Um, I don't think the example holds up well, because you could argue that anybody that doesn't exercise or doesn't eat right that develops coronary disease, um, because of their lifestyle and diet is also self-inflicted, so, I think that, um, a disease is a disease, and as doctors it is our obligation to treat the patients.	blame (secondary), SUD (secondary)
	1016	Um, there's a, kind of, um, I don't want to say, ethical argument, but, um, to some degree, it doesn't, some people take up issue with doing a mini procedure, um, on somebody that's done this to themselves, and giving them a very cosmetic incision and, um, treating it like it's not a big deal, that it's really easy for us to just go in through these really small incisions and fix this, and not relaying the, the, um, you know, the point that this is really serious. Um, sometimes, a mini approach can leave the patients feeling like it's not as big of a deal as a full sternotomy.	blame (secondary)
	1016	Let them prove that they can enter recovery, and then, I think the other piece of the puzzle is we have them come back to our clinic in six weeks for echo follow-up and to plan surgery at that time. The majority of patients that I see in consultation in the hospital do not show up to that six-week appointment. Um, I have had one, actually. Um, and so they take up clinic time, and, um, it's kind of my little, in some degree, my little test, if you're really committed and you come back to see me in my office, then I'm willing to operate on you, but if you can't make the appointment, and you can't demonstrate some sort of, um, follow up, then, um, you know…	blame (secondary), rationalization (secondary)

	1003	So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	paternalism (secondary), redemption (secondary), blame (secondary)
	1004	sad. Tough decisions. These people come in sick and don't take care of themselves. I do worry about getting viral infections like Hep C and HIV. There are no professional guidelines.	blame (secondary), rigidity (secondary)
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	blame (secondary)
	1004	No, though a younger person gets more of a chance. It's sad, because the younger person is destroyed.	blame (secondary), redemption (secondary)
	1004	Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation.	paternalism (secondary), blame (secondary), redemption (secondary)
	1004	No, I don't think that the treatment will change. This disease is one where prevention is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	blame (secondary), disassociation (secondary)

	1015	I: That's ok. Um…basically, do you think that medications and psychotherapy, um, one works better than the other, or they need to coexist in your experience? S: I think they, I think they, I think, I don't have a lot of knowledge about therapies, but I think that, um, medications are important. Um…I believe that Suboxone is more efficacious than methadone, and I've seen a lot of people on methadone with real, no real plans to cut out, cut down, or quit, or change. Whereas with Suboxone, I believe there is evidence for that being a good treatment for this disease.	blame (secondary)
	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	prioritization (secondary), redemption (secondary), blame (secondary)
	1008	Interviewer: Okay. And do you ever worry about getting viral infections, like hep C or HIV? Respondent: I worry about that with everybody. Not so much more with somebody that's a drug abuser. I think it's more common. I don't think I'm any more careful. I'm aware that ---- that the risk is great. But I don't think I really treat anybody differently.	blame (secondary)
	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if	blame (secondary), redemption (secondary)

		you re-infect your valve while taking drugs, you're not going to get another operation."	
	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration (secondary), blame (secondary), disassociation (secondary)
	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	collaboration with addiction medicine, support for surgeons, PICC line risk, administration, blame (secondary), disassociation (secondary)

	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	rigidity (secondary), blame (secondary)
	1008	Interviewer: Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they	blame (secondary), redemption (secondary)

		may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	
	1008	Interviewer: Okay. I have another -- and, so, imagine -- back to Katie, that you've operated on her. She's doing well. She's linked to a methadone maintenance program. And then one year later, she's back in the hospital and she has prosthetic valve endocarditis. So, you've seen this before? Respondent: Yep. Interviewer: Yeah. What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	blame (secondary), redemption (secondary)
	1008	Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time. Interviewer: Okay. And, so, would it impact you, and you've sort of spoken to this. But like, so, if endocarditis related to drug use, that impacts your decision to operate? Respondent: The second time around? Absolutely. Yes.	blame (secondary), redemption (secondary), rigidity (secondary)

	1008	Interviewer: Okay. Okay. And then what about like age? So, if a 25-year-old with prosthetic valve endocarditis, would you look at that person differently than someone who's 55 and had prosthetic valve endocarditis? Respondent: Unless they're really elderly, I don't think that would have much impact. Interviewer: Okay. And if they were elderly? Respondent: Well, we're talking about drug addicts or? Interviewer: Yeah, I think so, in this case. Respondent: Age doesn't matter. There aren't too many 80-year-old drug addicts. There's some 50-year-old but they usually die when they're 30, 40. Interviewer: Yeah. Does it impact -- does age impact your -- the type of valve you might give someone? Respondent: Yeah. If they're 20 or 30 or 40, I would put in a mechanical valve. If they're above the age of 50 and a drug addict, I would definitely put in a tissue valve. Interviewer: Why? Respondent: Because there is risk of the valve clotting off if you don't take your Coumadin. And drug addicts tend to very unreliable people. On the other hand, you don't want the valve to wear out, a biological valve out. So, you have to do it again in 10 or 15 years. So, with the younger patients, I would put in a mechanical valve. Interviewer: They last longer? Respondent: Huh? Interviewer: They last longer? Respondent: Yes, they will. They tend to last forever. Unless you get them re-infected.	prioritization (secondary), blame (secondary)

	1008	Interviewer: Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school. Interviewer: So, who like -- I don't know. Who would need to make changes then? Everyone? Respondent: Everybody. Interviewer: Yeah. Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	blame (secondary), rigidity (secondary), disassociation (secondary)
	1008	Respondent: Most of these patients just keep doing what they're doing, anyway. Doesn't matter who talks to them, but.	blame (secondary)
	1013	So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	prioritization (secondary), blame (secondary), responsibility (secondary)
	1013	If so, what questions did you ask? Well one question is do they intend to quit. And surprisingly sometimes patients say no I like using and I am going to continue to use. That is pretty uncommon but it will happen every now and then.	blame (secondary), paternalism (secondary)

	1013	Using intravenous drugs is a threat to your life, you are going to continue to get infections. If we do this operate and put in an artificial valve and if you continue to use intravenous drugs the new valve is going to get infected. That's sort of that's how I would imagine that conversation to go	blame (secondary), paternalism (secondary)
	1013	Uh, yes it does and in the scenario, that you've described probably less so – it's the first operation and um, they're in cardiogenic shock. If somebody comes back and they are not committed and they are not in shock but they have, there is a suspicion for a vegetation and so on and so forth then it is not uncommon for us to say ok let's see if we can manage this with antibiotics at least and see if you can try to demonstrate and ability to be sober. The problem is if they come back again in shock what do you do? I don't think we turn someone down for surgery just because this is their second episode so there are placed that will have a you get one shot kind of a rule but I don't believe in that, that's not right, you can imagine someone who gets a valve replacement then is sober then relapses which is pretty common, right, and with the relapse they get infected again but they were sober for two years until their mother died or something like that then they fell off the wagon, then it feels like you've got some hope if you can deal with the valve infection then they can get sober again.	blame (secondary), rationalization (secondary)
	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it	disassociation (secondary), blame (secondary), redemption (secondary)

		that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness	
	1014	I: Thank you. Do people who inject drugs have different operative and post-operative mortality? S: So, yes, they do. And, and, so, if somebody shows up, you know, a patient who had a dental extraction a few weeks before, and they come in with an infected valve, and we operate on them, their outcome, their survival, their life expectancy is normal with the other populations barring anything else that could happen. Recidivism is the number one problem with people with IVDA, and, and, those guys, you know, usually, the bacteria are worse, you know, they are not as, you know, they are MRSA, there could sometimes be Pseudomonas, God knows what they inject because they're not that clean, you know, they are not sterilizing their needles or whatever, and, so sometimes the infection is much more aggressive, and they have abscesses in their heart, and the operation could be much more aggressive, and much more elaborate, and especially when they do it again, you know, and you have a bioprosthesis now or a prosthesis that got infected makes the operation twice as difficult. So, yes and yes.	blame (secondary)
	1014	S: Uh, so, um, so, hopefully, they're helping us. I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before.	collaboration (secondary), blame (secondary)

	1014	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes and no. I mean, the blatant refusal is, it gives me pause. If a patient is saying, "Nope, I won't stop," and if they are in a mental, you know, state, where they're absolutely, you know, saying, "You operate on me and I know I'm going to use again," you know, those are far and few in between. Those are rare, but sometimes you see them. And, and, you, kind of, wonder, what am I doing here? This is where, you know, the support, the hospital support, with psychiatrists and all the disciplines, it becomes a multidisciplinary approach, and I've tried to involve other, some of my partners, like, you know, this guy is a recurrent offender, and he intends on, on, so what are we doing? So, that's, that's the epitome of futility in my eyes.	blame (secondary), redemption (secondary)
	1014	S: Yeah, I remember, I did not operate on them the first time around, one of, one of our my partners did. And, you know, and sometimes, those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her through a big operation and go back to square one down the road? When is enough? When enough is enough?	disassociation (secondary), rationalization (secondary), blame (secondary)
	1001	Myself? Of course. Yeah, I think everybody is concerned, you know? But these days it's a little bit better. We do notice that there have been improvements in the therapies. With HIV and hep C, a lot of people can carry the virus for a longer period of time without obvious sign of infection. I think [unintelligible	blame (secondary)

		00:05:18] now, so making the surgeons feel better or healthcare professionals feel better when we deal with the patient when they clearly have the disease.	
	1001	Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations. In this group of patients, if they continue the IV drug use, their lifestyle – the future reinfection will be very high.	blame (secondary)
	1001	Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	paternalism (secondary), blame (secondary)
	1001	I will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of reinfection will be coming, and that would be even worse.	blame (secondary), redemption (secondary)
	1001	Yeah, because all the narcotics are associated with side effects, so there's a limit to use. So overuse causes problems, can delay their progress from recovery [overlapping noise] even affect the hemodynamics. Typically after a surgery, after three or four days the pain should be minimal. That is usually the time for patient to resume some degree of their activity at baseline, but our experience is the [possibility] of recover for the drug use patients is a little bit delayed. It's more or less related to the overuse of narcotics postop.	prioritization (secondary), blame (secondary)
	1001	I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a	redemption (secondary), rigidity (secondary), blame (secondary)

		decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	
	1010	But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service. And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	redemption (secondary), responsibility (secondary), blame (secondary)
	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	blame (secondary), redemption (secondary)
	1010	So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece	blame (secondary), redemption (secondary)

		of metal, an expensive piece of metal, but still a piece of metal.	
	1010	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Does age impact your decision to operate? If it is caused by drugs? No	blame (secondary)
	1001	I will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of reinfection will be coming, and that would be even worse.	blame (secondary)
	1001	It's tough. It's difficult. I think there is no exception for those patients who require more narcotics or complain – you know, more pain than a regular patient. That's just our [experience]. Certainly it is difficult to take care of those patients, postoperative.	blame (secondary)
Changes over Time			
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons

		buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy	support for patient, SUD treatment, changes over time, desired changes, follow-up care

		and medical—or medication that really eliminated the craving would help a lot.	
	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more people to operations that in other countries, even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	cost, changes over time, tx compared to broader, lack of resources, deservingness

	1019	there was a time in which a compound called Silzone was, uh… was implanted into, uh, valve sewing rings. It's… it was a metallic… it was a silver, uh, compound of some sort that was incorporated into, uh, sewing rings that has antibacterial properties. And so the idea was that you could put this in and, uh… and it would prevent prosthetic valve infections. The problem was that it also inhibited the ingrowth of fibroblasts and tissue into the sewing ring. And so these patients actually came back, paradoxically, with, um… a lot of paravalvar leaks and prosthetic valve endocarditis, even despite the fact that there was this so-called Silzone in it. Right So, Carbomedics [sp?] had it. St. Jude had it, for a while, um… and then it disappeared. There was never [unintelligible], few papers in the literature published on it. But the companies, to the best of my knowledge, refused to acknowledge that it was because of the Silzone. Um, I don't think there was ever an open statement that said that we put this in and it was actually a bad idea. But they stopped using it, so they knew it was a bad idea. But I would love to see something like that.	desired changes, changes over time

	1019	Are there any changes that you would like to see? Well… Surgically, or… Uh… Uh, I'd love to see, um… You know, I'd love… Obviously I'd love… I'd love to have more minimally invasive methods. I'd love to have antibiotics that could cure cardiac abscesses and treat things like Staph aureus and Candida and eradicate them. Uh, I'd love to see, uh, prosthetic material that doesn't lend itself to infection, uh, which we don't have. There was a, uh… This was before your time, [REDACTED], but there was a, um… and you may have heard or you may not have… but there was a time in which a compound called Silzone was, uh… was implanted into, uh, valve sewing rings. It's… it was a metallic… it was a silver, uh, compound of some sort that was incorporated into, uh, sewing rings that has antibacterial properties. And so the idea was that you could put this in and, uh… and it would prevent prosthetic valve infections. The problem was that it also inhibited the ingrowth of fibroblasts and tissue into the sewing ring. And so these patients actually came back, paradoxically, with, um… a lot of paravalvar leaks and prosthetic valve endocarditis, even despite the fact that there was this so-called Silzone in it. Right So, Carbomedics [sp?] had it. St. Jude had it, for a while, um… and then it disappeared. There was never [unintelligible], few papers in the literature published on it. But the companies, to the best of my knowledge, refused to acknowledge that it was because of the Silzone. Um, I don't think there was ever an open statement that said that we put this in and it was actually a bad idea. But they stopped using it, so they knew it was a bad idea. But I would love to see something like that.	desired changes, changes over time

	1008	Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	changes over time, liability of medical professionals
	1019	Are there any changes that you would like to see? Well… Surgically, or… Uh… Uh, I'd love to see, um… You know, I'd love… Obviously I'd love… I'd love to have more minimally invasive methods. I'd love to have antibiotics that could cure cardiac abscesses and treat things like Staph aureus and Candida and eradicate them. Uh, I'd love to see, uh, prosthetic material that doesn't lend itself to infection, uh, which we don't have. There was a, uh… This was before your time, [REDACTED], but there was a, um… and you may have heard or you may not have… but there was a time in which a compound called Silzone was, uh… was implanted into, uh, valve sewing rings. It's… it was a metallic… it was a silver, uh, compound of some sort that was incorporated into, uh, sewing rings that has antibacterial properties. And so the idea was that you could put this in and, uh… and it would prevent prosthetic valve infections. The problem was that it also inhibited the ingrowth of fibroblasts and tissue into the sewing ring. And so these patients actually came back, paradoxically, with, um… a lot of paravalvar leaks and prosthetic valve endocarditis, even despite the fact that there was this so-called Silzone in it. Right So, Carbomedics [sp?] had it. St. Jude had it, for a while, um… and then it disappeared. There was never [unintelligible], few papers in the literature	desired changes, changes over time

		published on it. But the companies, to the best of my knowledge, refused to acknowledge that it was because of the Silzone. Um, I don't think there was ever an open statement that said that we put this in and it was actually a bad idea. But they stopped using it, so they knew it was a bad idea. But I would love to see something like that.	
	1018	Looking back is there anything you would change about your approach for prior patients you have cared for? Only to recognize that homografts used to be a religion in the 80s and I think there is enough data now to show that a good debridement and a typical xenoprosthesis with a dacron graft still has very good results, excellent results although I think still not quite as good as grafts in the most challenging of infections.	data, changes over time, mechanical problem
	1011	Do you think that treatment for endocarditis in people who inject drugs will change in the future? From a surgical perspective I don't think we will do anything different for these patients as you would do for patients who are not injecting drugs. Um. I think where the care is going to change is trying to prevent it and trying to treat the drug, but as a surgeon I, you know it may impact the valve choices, you know the complexity of the operation, but I don't foresee um, us making, you know there are new techniques being developed but nothing specific to this. The surgery will evolve, like all surgical techniques evolve, but I think they will evolve across the entire spectrum of cardiac surgery.	changes over time

	1006	Interviewer: Do you worry about getting viral infections like hep C and HIV? Interviewee: Me personally? Interviewer: Mm-hmm. Interviewee: No, I take every vaccine that comes along, and there's a cure for hep C now, hope they'll be one for HIV.	infection risk to surgeons, changes over time, support for surgeons
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good.	support for surgeons, changes over time, follow-up care, PICC line risk, administration, collaboration with addiction medicine, futility, societal issue
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	societal issue, desired changes, lack of resources, SUD treatment, changes over time, prevalence of endocarditis, protocol
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think	desired changes, SUD treatment, societal issue, medical model, support for patient, changes over time, follow-up care

		there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	
	1006	Interviewer: Okay. To close, is there anything I haven't asked you about today that you'd like to add? Interviewee: Well, if we have those guidelines, I'd like to know where they are, 'cause I'd be interested in reading them. My other comment is just to reinforce the statements on what a huge difference the addiction medicine service made—when I heard that talk, it was several years ago, probably five. I thought well halleluiah, now there's some hope, 'cause otherwise just either treating a patient for four to six weeks on your service, or sending 'em back into the world to get reinfected.	collaboration with addiction medicine, protocol, changes over time, support for patient
	1007	Have you ever used the term opioid use disorder when speaking with patients of this sort? Speaker 2: Occasionally, Yea. Speaker 1: Okay. Speaker 2: Is this hard to keep track because there's all… the names keep changing.	discussing addiction, changes over time, lack of knowledge
	1017	Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway.	discussing addiction, changes over time, commitment to recovery, patient consent, collaboration with addiction medicine, protocol, deservingness

	1017	So, you talked about when you were in BLANK. Is there someone you can call in the hospital here with addiction medicine expertise? S: Now…now we can. It is relatively recent.	collaboration with addiction medicine, changes over time
	1017	How knowledgeable do you feel about the available treatments for people who use drugs? S: I think, well, on a scale of 1-10, 1 being I don't know anything and 10 being I'm an addiction psychiatrist, I'd say I'm a 6, just because of recent changes here at BLANK, but would say that, um, you know, two years ago, I'd be down to 2 or 3 because I don't think we had a lot of the resources. I: Do you want to receive more training on this sort of thing? S: Um, I think that, uh, yes with an asterisk. What I want to know more about is prognosis, and, you know, what are the, um, demographics or the features of someone that, if we do surgery, will seek treatment and address it, and what are the, um, who are the patients that, uh, have a poor prognosis with respect to their substance abuse. That's what I want to know more about.	knowledge, changes over time, training, perception of risk in PWID
	1013	Looking back is there anything you would change about your approach? To those sorts of patients? I don't think so. The critical issue is getting addiction medicine involved. So, if you say over the course of my career years ago there wasn't really access to addiction medicine to make that happen.	SUD treatment, collaboration with addiction medicine, changes over time
	1013	I think that one thing that will be interesting to you in this study, or that would be interesting to be in this, is one area that I have really changed, my thinking has really evolved a lot is in right sided endocarditis. So, 20 years ago if someone had tricuspid valve endocarditis and a great big vegetation and severe tricuspid valve regurgitation and they embolized to their lungs and they had lung abscesses and maybe an empyema I would operate on them. I don't anymore. Because I think that they are better off being treated with antibiotics and even if they need a chest tube for their empyema, treat the infection unless, you can sterilize the vegetation, if you can't sterilize the vegetation then you are kind of stuck, you have to operate. But I am much more reluctant to operate on right sided disease now and I think that, if we can assemble enough information around that I think that could contribute to guidelines – it gets a little bit to your guideline question- that I think would actually be useful. I don't think we will ever have guidelines for these really difficult ethical ones but I can	protocol, multiple surgeries, medical model, data, changes over time, desired changes, left vs right side

		imagine developing an approach where for example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	
	1003	And what do you think about like, drug rehab? Do you think it's different – is it different than drug detox? Do you think it's - Respondent: Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	stigma , societal issue, timing of SUD tx, multidisciplinary group, medical model, regional differences, follow-up care, changes over time, support for patient
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in	follow-up care, multidisciplinary group, changes over time, second chance, accountability, screening for ID, commitment to recovery, relapse

		the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	pain management, follow-up care, post-operation care, liability of medical professionals, collaboration with addiction medicine, changes over time
	1003	espondent: - we've gotten much better at preventing withdrawal. It used to be more of a problem than now. I think again, with addiction medicine involved, we maintain them in some narcotics before surgery, during, and after. We're not stopping things cold turkey. We're much better at that than we used to be. So, I've not seen much withdrawal, tell you the truth. Recently.	withdrawal management, changes over time, collaboration with addiction medicine
	1009	Interviewer: Do you think that treatment for endocarditis and people who inject drugs will change in the future? Surgeon: In terms of surgical management? Or? Interviewer: Yeah. Surgeon: No. I think the operations are pretty standard. In the absence of new antibiotics that are much more effective, I think it's still going to be the same. I think you operate on patients with heart failure and mechanical complications. Interviewer: What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are	changes over time, desired changes, societal issue, accountability, stigma

		going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	
	1011	Do you feel supported in your care of people who inject drugs? Yes, so I, you know I think this is a great issue that we have started that we have this multidisciplinary team now that we meet, we schedule, we meet scheduled once a month but we can also call for ad hoc meetings if there is a patient that was extremely challenging and we needed help managing that. Its composed of the addiction treatment team, the ID team, cardiothoracic surgeons, their primary care providers or whomever is taking care of the floor, and really when we started the process it was interesting to watch how the team has evolved, because I remember when we started the process a couple years ago, everyone was coming at it from different perspectives and everyone had the patients best interest in heart but I don't think they were seeing what the other teams were seeing. You know the addiction team most of the time was saying you need to operate on these patients because that is what needs to happen and the surgeons were reluctant because of obvious reasons but what I find very interesting is that more often than not recently everyone is on the same page, or trying to get on the same page. There is much less arguments or disagreements as to what the best plan of care is for these patients might be.	multidisciplinary group, support for surgeons, empathy, changes over time, collaboration with addiction medicine

	1011	Do you think that treatment for endocarditis in people who inject drugs will change in the future? From a surgical perspective I don't think we will do anything different for these patients as you would do for patients who are not injecting drugs. Um. I think where the care is going to change is trying to prevent it and trying to treat the drug, but as a surgeon I, you know it may impact the valve choices, you know the complexity of the operation, but I don't foresee um, us making, you know there are new techniques being developed but nothing specific to this. The surgery will evolve, like all surgical techniques evolve, but I think they will evolve across the entire spectrum of cardiac surgery.	changes over time, training
	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1017	I: So, you talked about when you were in BLANK. Is there someone you can call in the hospital here with addiction medicine expertise? S: Now…now we can. It is relatively r	collaboration with addiction medicine, changes over time
	1017	I: How knowledgeable do you feel about the available treatments for people who use drugs? S: I think, well, on a scale of 1-10, 1 being I don't know anything and 10 being I'm an addiction psychiatrist, I'd say I'm a 6, just because of recent changes here at BLANK, but would say that, um, you know, two years ago,	changes over time, lack of resources

		I'd be down to 2 or 3 because I don't think we had a lot of the resources.	
	1013	Looking back is there anything you would change about your approach? To those sorts of patients? I don't think so. The critical issue is getting addiction medicine involved. So, if you say over the course of my career years ago there wasn't really access to addiction medicine to make that happen.	collaboration with addiction medicine, changes over time, SUD treatment
	1015	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I don't necessarily share that opinion in every case, but I do see the rationale in it, so…	tx compared to colleagues, deservingness, changes over time, defensive, second chance
	1015	Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Um, it is hard to predict, but maybe, just like everything else in medicine. I: Are there any changes that you want to see? S: Uh, I think honestly the change is going to start not with, uh, the disease, it's going to start with the disease of IV drug use and opioid use. It's not going to, I don't think the change is going to come from people who have already been infected. I: Who do you think need to make the changes in the treatment for…? S: I think it is a public health problem. I don't, the change can come from doctors, but I think the changes need to come from the companies that, um, promote this kind of behavior. Or, not, I shouldn't say that, promote, easy, um, access to opioids. I: And how much time do you think is needed for these changes? S: Oh, at least, uh, one generation. At least one generation.	changes over time, desired changes, societal issue, discussing addiction

	1007	Speaker 1: Have you ever used the term opioid use disorder when speaking with patients of this sort? Speaker 2: Occasionally, Yea. Speaker 1: Okay. Speaker 2: Is this hard to keep track because there's all… the names keep changing. Speaker 1: Yeah. Thank you.	changes over time
	1007	Speaker 1: Okay. Thank you. Um, do you think the treatment for endocarditis in people who inject drugs will change in the future? Speaker 2: Yes. Speaker 1: Are there any changes you would like to see? Speaker 2: More social support. That's where the need is.	changes over time, societal issue
	1001	Do you worry about getting viral infections like hep C or HIV? Respondent: Myself? Of course. Yeah, I think everybody is concerned, you know? But these days it's a little bit better. We do notice that there have been improvements in the therapies. With HIV and hep C, a lot of people can carry the virus for a longer period of time without obvious sign of infection. I think [unintelligible 00:05:18] now, so making the surgeons feel better or healthcare professionals feel better when we deal with the patient when they clearly have the disease.	infection risk to surgeons, changes over time, support for surgeons
	1001	Interviewer: Do you think that treatment for endocarditis for people who inject drugs will change in the future? Respondent: I don't know. I hope. Interviewer: What kind of changes would you like to see? Respondent: I hope there would be a guidelines. You know, how many times do we do surgery? If they go back to drug use, should we withhold the surgical intervention? Or what would be the process? You know, the medicine is becoming both standardized or individualized. So I think for an endocarditis patient, it should be the future. On one side, we should clearly have guidelines from different perspectives. On the other side, we have to mainly treat an endocarditis patient individually, based on their own needs.	desired changes, protocol, data, changes over time, training
	1004	R: DO you think treatment for endocarditis will change in the future? What changes would you want to see? I: No, I don’t think that the treatment will change. This disease is one where prevention	desired changes, knowledge, changes over time, protocol, cost

		is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	
	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration
	1005	I think it has changed, and that I think it's an epidemic and we see so much of it. I think it's changed in that we've I think tried to become a lot more aggressive in getting these patients into rehab. I also think it's changed in that the tolerance for doing multiple valve operations on patients is just not accepted amongst our specialty as much to do repetitive operations on people that continue to use.	prevalence of endocarditis, protocol, changes over time

	1008	Do you think that the treatment for endocarditis in the people who inject drugs is going to -- will change in the future? Respondent: I hope so, but I doubt it. Interviewer: Okay. Respondent: I don't see any wonder drug coming around or other therapy. I think it's going to be this way for the next 10 years. Interviewer: And then maybe in the 10 years after that? Who knows? Respondent: Who knows. Interviewer: Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school. Interviewer: So, who like -- I don't know. Who would need to make changes then? Everyone? Respondent: Everybody. Interviewer: Yeah. Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	changes over time, pain management, accountability, cost, deservingness, frustration

	1007	Speaker 1: Okay. Thank you. Um, do you think the treatment for endocarditis in people who inject drugs will change in the future? Speaker 2: Yes. Speaker 1: Are there any changes you would like to see? Speaker 2: More social support. That's where the need is.	changes over time, societal issue, responsibility (secondary), SUD (secondary)
	1018	Looking back is there anything you would change about your approach for prior patients you have cared for? Only to recognize that homografts used to be a religion in the 80s and I think there is enough data now to show that a good debridement and a typical xenoprosthesis with a dacron graft still has very good results, excellent results although I think still not quite as good as grafts in the most challenging of infections.	data, changes over time, mechanical problem
	1012	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Uh. I don't think that antibiotics are ever going to be significantly more powerful than they are right now. I would hope that at some point we get better treatments for the substance abuse which is the problem. What we are treating is a sequela of the problem but what we need to focus on is the problem and right now, even your study is not focusing on the problem, its focusing on how aggressive we are in treating one of the sequela of the problem. I hope that the focus can shift to a. why are so many young people using life-threatening drugs and b. once they have a life-threatening problem as a consequence why do they still do it. So, that is a, that's the problem.	changes over time, desired changes, SUD treatment, prevalence of endocarditis, stigma
	1018	Looking back is there anything you would change about your approach for prior patients you have cared for? Only to recognize that homografts used to be a religion in the 80s and I think there is enough data now to show that a good debridement and a typical xenoprosthesis with a dacron graft still has very good results, excellent results although I think still not quite as good as grafts in the most challenging of infections.	data, changes over time, mechanical problem
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	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1017	I: So, you talked about when you were in BLANK. Is there someone you can call in the hospital here with addiction medicine expertise? S: Now…now we can. It is relatively r	collaboration with addiction medicine, changes over time
	1017	I: How knowledgeable do you feel about the available treatments for people who use drugs? S: I think, well, on a scale of 1-10, 1 being I don't know anything and 10 being I'm an addiction psychiatrist, I'd say I'm a 6, just because of recent changes here at BLANK, but would say that, um, you know, two years ago, I'd be down to 2 or 3 because I don't think we had a lot of the resources.	changes over time, lack of resources

	1004	No, I don't think that the treatment will change. This disease is one where prevention is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	protocol, changes over time, cost
	1006	Interviewer: Do you worry about getting viral infections like hep C and HIV? Interviewee: Me personally? Interviewer: Mm-hmm. Interviewee: No, I take every vaccine that comes along, and there's a cure for hep C now, hope they'll be one for HIV.	infection risk to surgeons, changes over time, support for surgeons
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue

		future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	support for patient, SUD treatment, changes over time, desired changes, follow-up care
	1012	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Uh. I don't think that antibiotics are ever going to be significantly more powerful than they are right now. I would hope that at some point we get better treatments for the substance abuse which is the problem. What we are treating is a sequela of the problem but what we need to focus on is the problem and right now, even your study is not focusing on the problem, its focusing on how aggressive we are in treating one of the sequela of the problem. I hope that the focus can shift to a. why are so many young people using life-threatening drugs and b. once they have a life-threatening problem as a consequence why do they still do it. So, that is a, that's the problem.	desired changes, changes over time, SUD treatment, stigma , prevalence of endocarditis

	1015	I: Yeah, sorry… What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I don't necessarily share that opinion in every case, but I do see the rationale in it, so…	tx compared to colleagues, changes over time, deservingness, defensive, second chances
	1015	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Um, it is hard to predict, but maybe, just like everything else in medicine. I: Are there any changes that you want to see? S: Uh, I think honestly the change is going to start not with, uh, the disease, it's going to start with the disease of IV drug use and opioid use. It's not going to, I don't think the change is going to come from people who have already been infected. I: Who do you think need to make the changes in the treatment for…? S: I think it is a public health problem. I don't, the change can come from doctors, but I think the changes need to come from the companies that, um, promote this kind of behavior. Or, not, I shouldn't say that, promote, easy, um, access to opioids. I: And how much time do you think is needed for these changes? S: Oh, at least, uh, one generation. At least one generation.	desired changes, discussing addiction, changes over time, societal issue
	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more people to operations that in other countries,	changes over time, cost, deservingness, tx compared to broader

		even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	
	1014	S: It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	multidisciplinary group, post-operation care, follow-up care, changes over time
	1014	I: Is there someone you can call in the hospital with addiction medicine expertise? S: Now, there is.	collaboration with addiction medicine, changes over time
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if	support for surgeons, insurance, follow-up care, changes over time

		we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely. It could happen. Yeah. I: Interesting. How recent was that? S: Five years ago, six years ago. I could send it to you.	data, changes over time, reinfection, stigma
	1011	Do you think that treatment for endocarditis in people who inject drugs will change in the future? From a surgical perspective I don't think we will do anything different for these patients as you would do for patients who are not injecting drugs. Um. I think where the care is going to change is trying to prevent it and trying to treat the drug, but as a surgeon I, you know it may impact the valve choices, you know the complexity of the operation, but I don't foresee um, us making, you know there are new techniques being developed but	changes over time

		nothing specific to this. The surgery will evolve, like all surgical techniques evolve, but I think they will evolve across the entire spectrum of cardiac surgery.	
	1003	Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	changes over time, support for patient, SUD treatment, stigma , societal issue, collaboration with addiction medicine, multidisciplinary group
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	accountability, changes over time, collaboration with addiction medicine, commitment to recovery, follow-up care, multidisciplinary group
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home	pain management, changes over time, multidisciplinary group, collaboration with addiction medicine

		on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	
	1003	A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	protocol, liver vs heart, changes over time
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	support for surgeons, insurance, follow-up care, changes over time, responsibility (secondary), rationalization (secondary)
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you	data, changes over time, reinfection, stigma

		know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely. It could happen. Yeah. I: Interesting. How recent was that? S: Five years ago, six years ago. I could send it to you.	
	1005	Interviewer: Looking back, I guess on similar situations, are there any things that you would change about approaches you've taken to these types of patients before? Interviewee: I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration, patient consent
	1005	nterviewer: Do you think that treatment for endocarditis in people who use—who inject drugs will change in the future? Interviewee: I think it has changed, and that I think it's an epidemic and we see so much of it. I think it's changed in that we've I think tried to become a lot more aggressive in getting these patients into rehab. I also think it's changed in that the tolerance for doing multiple valve operations on patients is just not accepted amongst our specialty as much to do repetitive operations on people that continue to use	changes over time, multiple surgeries, prevalence of endocarditis, protocol

	1014	It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	multidisciplinary group, follow-up care, post-operation care, futility, changes over time
	1014	I: Is there someone you can call in the hospital with addiction medicine expertise? S: Now, there is.	collaboration with addiction medicine, changes over time
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do.	changes over time, support for surgeons
	1014	I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation.	support for surgeons, insurance, follow-up care, changes over time
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as	data, reinfection, medical model, stigma , changes over time

		you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely.	
	1009	Do you think that treatment for endocarditis and people who inject drugs will change in the future? Surgeon: In terms of surgical management? Or? Interviewer: Yeah. Surgeon: No. I think the operations are pretty standard. In the absence of new antibiotics that are much more effective, I think it's still going to be the same. I think you operate on patients with heart failure and mechanical complications.	changes over time, desired changes
	1009	What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	changes over time, accountability, deservingness, stigma

	1009	I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration with addiction medicine, priorities, follow-up care, changes over time, discussing addiction, frustration, futility
	1001	Myself? Of course. Yeah, I think everybody is concerned, you know? But these days it's a little bit better. We do notice that there have been improvements in the therapies. With HIV and hep C, a lot of people can carry the virus for a longer period of time without obvious sign of infection. I think [unintelligible 00:05:18] now, so making the surgeons feel better or healthcare professionals feel better when we deal with the patient when they clearly have the disease.	changes over time, infection risk to surgeons, support for surgeons
collaboration secondary			
	1012	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	timing of SUD tx, follow-up care, support for patient, collaboration (secondary)
	1012	They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are	collaboration (secondary)

		sometimes uncomfortable giving those doses of medications so, uh, they can be challenging.	
	1012	What works or doesn't work to treat their pain in your experience? We usually get a pain consult and let them help us manage it and I think those are you know when you are giving opiates to people with an opiate addiction it's not, you know, so we try all the non-opiate medications but they don't tend to be very effective either.	collaboration (secondary)
	1012	So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them hemodynamically unstable and it's just not safe.	collaboration (secondary)
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	responsibility (secondary), paternalism (secondary), collaboration (secondary)
	1009	t about your experience managing pain in this population? Do you know what works to treat their pain? What does not work? Do you have another service to consult? Surgeon: The hospital has a new pain management service that are available. I mean, generally, we're using narcotics in the perioperative period. If someone has a sternotomy and their chest is open, they need narcotics.	collaboration (secondary)
	1009	Interviewer: Withdrawal, what has that experience been like, as well? Surgeon: I usually will have the pain service kind of manage that. When these patients come in, especially if they've had a lot of narcotic or opioid use ahead of time, we just let the service know prior to surgery, please come see the patient after the operation and whatever recommends they have we follow.	collaboration (secondary)

	1009	Interviewer: How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	collaboration (secondary)
	1009	Interviewer: And some hospitals convene a multidisciplinary group to evaluate people who inject drugs before their valve replacement. Does this hospital do that? Surgeon: No. Interviewer: Is that something you'd like to see? Surgeon: It probably wouldn't matter. Who's in the multidisciplinary group, right? Interviewer: Who do you think should be? Surgeon: I mean, really, when I have patients I speak with the Infectious Disease doctor and the cardiologist. The ultimate decision on whether the patient gets an operation is based on the surgeon, regardless of what the Infectious Disease doctor or cardiologist say. I think when these groups get together I think they spend an hour talking about nothing. You can get to the heart of the matter very quickly and so it would probably be a waste of – you know, there's not enough hours in a day to sit through an hour-long meeting. I think you can really get to the heart of the matter in terms of what needs to be done in just a few minutes.	disassociation (secondary), collaboration (secondary)

	1009	nterviewer: I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration (secondary), redemption (secondary), responsibility (secondary), paternalism (secondary)
	1006	Interviewer: Is there someone you can call in the hospital with addiction medicine experience and expertise? Interviewee: We have a whole service. Actually, a few years ago I went to—it was a small group, kind of grand rounds type thing, I can't remember who sponsored it. It may have been infectious disease where the person from addiction medicine spoke, it was quite interesting.	collaboration (secondary)
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration (secondary), paternalism (secondary), redemption (secondary)
	1002	Interviewer: Is there someone you feel you could call in the hospital who has addiction medicine expertise? Respondent: I'm not sure.	collaboration (secondary)

	1002	Interviewer: And you had a good experience with those other teams? Respondent: Yeah, I think it's okay. Interviewer: Anything they could do better? Respondent: I don't know.	multidisciplinary group, collaboration with addiction medicine, collaboration (secondary)
	1002	Interviewer: Some hospitals can have a multidisciplinary group to evaluate these specific patients and cases. Do you know if [Tess] has that? Respondent: I don't know. Interviewer: Do you think it would be helpful to have? Respondent: I think so. Interviewer: Who do you imagine would be there? Respondent: [The patient], cardiology, and then some other pain control. What else? Like, pharmacists and then coordinators who can reach out to the family. I think that's about it, yeah.	collaboration (secondary)
	1011	Do you feel supported in your care of people who inject drugs? Yes, so I, you know I think this is a great issue that we have started that we have this multidisciplinary team now that we meet, we schedule, we meet scheduled once a month but we can also call for ad hoc meetings if there is a patient that was extremely challenging and we needed help managing that. Its composed of the addiction treatment team, the ID team, cardiothoracic surgeons, their primary care providers or whomever is taking care of the floor, and really when we started the process it was interesting to watch how the team has evolved, because I remember when we started the process a couple years ago, everyone was coming at it from different perspectives and everyone had the patients best interest in heart but I don't think they were seeing what the other teams were seeing. You know the addiction team most of the time was saying you need to operate on these patients because that is what needs to happen and the surgeons were reluctant because of obvious reasons but what I find very interesting is that more often than not recently everyone is on the same page, or trying to get on the same page. There is much	collaboration (secondary)

		less arguments or disagreements as to what the best plan of care is for these patients might be. How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	
	1011	Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	collaboration (secondary)
	1011	Tell me about your experience with managing pain in this population. It is, it does become tricky because you want to give them the pain meds they need to get over their operative pain but also don't want to, uh, it sometimes becomes hard to decide if they are having real pain or if they are using that as a pretext or pretense to get more prescribed pain meds. So, most of the time we will get the acute pain team and the [addiction team] together so that they can help us with	collaboration (secondary)

		managing pain in these patients. Our teams prescribe them whatever routine pain meds they prescribe, sometimes they need different dosages of pain meds based on what tolerance they have built but we are reliant on our inpatient pain specialists to help through that. What works or doesn't work to treat their pain? I don't know the specifics. I think it would probably be different for every patient.	
	1011	Tell me about your experience with managing withdrawal in this population. It's not a problem that we frequently have to face um, because these patients come in, they are generally managed by services other than ours in the time they are in the face of acute withdrawal. We rely on our teams to help us guide through that when they come in.	collaboration (secondary)
	1011	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, I don't think so. I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one additional thing that I have to but not let that impact the decision making.	collaboration (secondary), prioritization (secondary)
	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? I think all of us struggle with it at levels but having a team together trying to bring us to the same page; I think there are some surgeons who are more averse to uh, I think everybody would do whatever is the right thing to help. But the concern about hepatitis C, I have heard that raised, a much higher level of concern than I have, and also different surgeons may have different levels of hope as to how these patients are going to do after the operation.	tx compared to colleagues, infection risk to surgeons, collaboration (secondary)

	1016	I: Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	collaboration (secondary)
	1016	I: Yeah, and that was helpful for the patient, that was able to control their pain? Did they have to have, like, any additional medicines? S: I don't know, I can't remember off the top of my head, if he was supplemented with additional medications, um, or if it maybe reduced the amount of additional medications that we needed. Um, in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners pre	collaboration (secondary), disassociation (secondary)
	1016	how would you feel about operating on someone who used to use drugs 10 years ago, gets prosthetic valve endocarditis after a dental procedure? S: I think that's a very different clinical situation. And, um, I think that that patient, you know, um, it's still risky in the sense that you're still undergoing the same challenges,	redemption (secondary), collaboration (secondary)

		and then you're still introducing narcotics again postoperatively for pain management, so I think that the counseling at the other, at the postoperative period is just as important in that second patient with the dental abscess. But it certainly makes my decision to replace the valve, um, a lot more straightforward.	
	1016	I: Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Um, that's a really hard question. Um, I think that when you see patients like that, you, you definitely have to have a multidisciplinary approach, and, um, you know, surgery depending on the trimester, um, can be, um, um, contraindicated, um, but, you know, IV drugs in pregnancy is, is never a good thing. Um, and so, I think there has to be really a team, a team approach on that, about what to do with the pregnancy, um, is, should the pregnancy be terminated, and should she have an open-heart surgery, and kind of what are the…it's, it's a very complex issue.	collaboration (secondary), prioritization (secondary)
	1016	I: Do you and your team every get into conflict about a certain patient case or anything? S: Yeah, we have, we have discussions about it. Um, for sure. Um, and I think having, we have that multidisciplinary meeting, or we have a valve meeting on BLANK morning, and it's been really great in cases, um, where we've gotten both addiction psychiatry and infectious disease there to have a group discussion, on some of those complex cases where you're not really sure what to do.	collaboration (secondary)
	1016	S: Um, it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their	collaboration (secondary), responsibility (secondary)

		recovery, and, and help when we have a team approach.	
	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards.	SUD (secondary), rationalization (secondary), redemption (secondary), collaboration (secondary)
	1003	fortunately he's been with us for about a year, so I – when I go see a patient, once I assess them, I, if he hasn't seen the patient yet, I notify the medical team to get in contact with him, and he's pretty good at coming to see a patient within 24 hours. And so, that's great. And then, I stay in contact with him and you know, tell him the surgery is scheduled and he'll see the patient afterwards, too. So, it's	collaboration (secondary)

		been a good collegiality – collegial relationship – colleagues and addiction medicine.	
	1003	Well, I would like to see his efforts supported. Right now, he's the only one we have. I think – this is going to - I want the hospital to support him. In terms of me, my efforts, well I've got no major issues there. I mean, if I book someone up for surgery, then I don't [meet] any resistance from the hospital. They, you know, they don't – they trust our judgement about who needs an operation, and then our job to do a – execute, and do a good operation. So not particularly. I don't have any outstanding conflicts with the hospital in terms of support for the program.	collaboration (secondary)
	1003	Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	collaboration (secondary), SUD (secondary)
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in	rationalization (secondary), SUD (secondary), collaboration (secondary), prioritization (secondary)

		the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	
	1003	ell, while they're in the hospital, obviously, they're being – well, we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	collaboration (secondary), responsibility (secondary)
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	responsibility (secondary), collaboration (secondary)
	1003	we've gotten much better at preventing withdrawal. It used to be more of a problem than now. I think again, with addiction medicine involved, we maintain them in some narcotics before surgery, during, and after. We're not stopping things cold turkey. We're much better at that than we used to be. So, I've not seen much withdrawal, tell you the truth. Recently.	collaboration (secondary)

	1003	Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive. So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates. I just wish there was more – I just wish all the people involved in the care of these patients realize that there's certain times you've got to move ahead and intervene soon. So, it's part of my job, actually, to educate people. And it's been a struggle. Yeah.	responsibility (secondary), prioritization (secondary), collaboration (secondary)
	1003	We've had a couple meetings. We should have more regular meetings. Dr. Wurcel actually had two excellent meetings that she directed. Yes, I think we should have like, at least monthly meetings with them more frequently. To discuss this problem. Yeah, multi-disciplinary approach. [What was] - what we've had. We had addiction medicine there, infectious disease, social work, surgeon - surgeons. Yeah.	collaboration (secondary)
	1004	yes, he's added psychiatry and psychology support to patient care, the hospital has really only treated the acute physical needs before him. He's great, especially if the patient doesn't have a lot of social support.	collaboration (secondary)

	1004	They require high doses, so I speak with the pain services. I don't know enough about pain management, their tolerance is so high that I don't know what they need	disassociation (secondary), collaboration (secondary)
	1004	What about after the surgery? Would a PICC line and sending a patient home be fine? Yes, that's the best way to get antibiotics. There's no point in keeping them in the hospital, we can't afford that. Though if they wanted to go to a nursing facility afterwards, I'd have no objection to that. The best option for the patient would be whatever Dustin recommends, in terms of relapse risk.	collaboration (secondary), disassociation (secondary)
	1004	I'm not sure, well, we had that meeting with Dr. Wurcel but that was more for research. When we're working with a case we have infectious disease doctors, and cardiology, and Dustin for addiction psychiatry.	collaboration (secondary)
	1015	I: Is there someone you can call in the hospital with addiction medicine expertise? S: Yeah, I don't know that number, but people on my team do and we do get in touch with them.	collaboration (secondary)
	1015	I: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	collaboration (secondary), disassociation (secondary)
	1015	I: Ok. Tell me about your experience with managing withdrawal in this population? S: Honestly, I don't manage a lot of that, because it is either something they have already gone through or, you know, they've got a breathing tube in and it's not something that I've dealt with.	collaboration (secondary), disassociation (secondary)

	1015	I: Some hospitals convene a multidisciplinary group for evaluating people who inject drugs for valve replacements. Does your institution do this? S: I don't think we do, although it might be helpful. I: And, let's see…Who needs to come to these meetings to make it worthwhile? S: Infectious disease, surgeons, cardiologists, uh, internal medicine physicians, um, psychiatrists, specifically those that specialize in addiction psychiatry. And then all the non-physician staff, so therapists, rehab therapists that are going to be treating these patients, like physical and occupational rehab, and then addiction specialists who are not doctors, psychologists, I think it, and radiologists, obviously.	collaboration (secondary)
	1015	To close, is there anything I haven't asked you about that you would like to say? S: Uh…I think that, um, people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	responsibility (secondary), collaboration (secondary)

	1007	Speaker 1: Yeah. Thank you. So is there someone you can call in the hospital with addiction medicine expertise? Speaker 2: Absolutely. I mean, at our hospital, very… probably the best in the city for addiction. So it's good to be working carefully with them. Speaker 1: Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect because it's not, it's not so much a surgical… Speaker 1: Okay. So I had asked you about suggestions for the hospital to improve. Speaker 2: Support? Speaker 1: Yea, support Speaker 2: What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	collaboration (secondary), rationalization (secondary)
	1007	Speaker 1: Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and	collaboration (secondary), rationalization (secondary), responsibility (secondary)

		get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	
	1007	Speaker 1: All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox. Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	collaboration (secondary), responsibility (secondary)
	1007	Speaker 1: Okay. So how about her opioid use disorder, how should it be treated and when? Speaker 2: Well, um, I mean I'm not an expert in the field. We wouldn't, like I said, we'll work very closely with addiction medicine, so I would defer to them, but I think they should be engaged immediately.	collaboration (secondary), rationalization (secondary)
	1007	Speaker 2: Um, again, we work with addiction medicine and have them consult before the surgery, but we would acknowledge them same as anyone else with additional methadone or whatever.	collaboration (secondary), responsibility (secondary)

	1007	Speaker 1: Okay. Thank you. Um, please, what's your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to surgeons at your institution, in the country and in the world in general? Speaker 2: Similar to the other surgeon I work with here. And, um, there's such a wide range of opinions. Speaker 1: Yeah. Speaker 2: It's hard to tell. Speaker 1: Okay. Have you ever experienced conflicts within your team or with another staff when it comes to treating patients with injection drug use disorder? Speaker 2: Within our surgical team? Speaker 1: Yeah. Speaker 2: No. Speaker 1: Okay. Speaker 2: With, with the rest of the hospital, I mean, not conflicts, but you know, disagreements, in management style. Speaker 1: So were these disagreements in management style resolved. Were they resolved? Speaker 2: Yeah, it's always resolved.	collaboration (secondary)
	1007	Speaker 1: Who do you think needs to make these changes on how much time is needed for these changes? Speaker 2: The administration at the hospitals needs to have more commitment to it, if, if that's what they're gonna do. The time depends how well they're up there and executing it.	collaboration (secondary), SUD (secondary), responsibility (secondary)
	1007	Speaker 1: Okay. So some hospitals convene a multidisciplinary group. To evaluates people who inject drugs for valve replacements. Does your institution do this as well? Speaker 2: Yes. Speaker 1: Okay. So who comes to these meetings and has it been helpful? Speaker 2: Yes. Everybody. Um, multidisciplinary surgery, cardiology, and with practice ID, neurology, addiction medicine.	collaboration (secondary)
	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not	collaboration (secondary), blame (secondary), disassociation (secondary)

		initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	
	1008	Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem.	collaboration (secondary), prioritization (secondary)
	1008	Interviewer: Okay. Can you tell me a little bit more about your experience managing pain in this population? You said like a little bit about it, but. Respondent: They just require a lot of medications. And they're in pain a lot. Because, you know, the receptors are down regulated, I think. Again, we get the experts involved to help manage that. Interviewer: There's a pain management service? Respondent: Yep. Yeah. Interviewer: Okay. What tends to work to treat their pain? Like what do they end up on usually? Do you know? Respondent: No. The usual stuff. I mean they give methadone. They give them all sorts of stuff and it's mainly narcotic-based, at least early on.	collaboration (secondary), disassociation (secondary)

	1008	Interviewer: Some hospitals have a multi-disciplinary group to evaluate people who inject drugs for valve replacements. Does this hospital have something like that? Respondent: Yeah. Interviewer: Okay. Who comes to the meetings? Do you go? Respondent: Yeah, we do. Psychiatrists, they have the drug rehab people. Usually, we don't meet in a room. We just -- everybody sees the patient. Interviewer: Okay. Has that been helpful? Respondent: I think so. Interviewer: Okay. Is there anyone else you'd like to see on the team? Respondent: Not really. Interviewer: Okay. Respondent: Most of these patients just keep doing what they're doing, anyway. Doesn't matter who talks to them, but.	collaboration (secondary)
	1013	Looking back is there anything you would change about your approach? To those sorts of patients? I don't think so. The critical issue is getting addiction medicine involved. So, if you say over the course of my career years ago there wasn't really access to addiction medicine to make that happen.	collaboration (secondary)
	1013	Is there someone you can call in the hospital with addiction medicine expertise? Yes, so we have got the addiction service	collaboration (secondary)
	1013	How do you think the hospital could support you more in the care of patients who inject drugs? Uh, I think that uh throwing more resources behind the whole addiction medicine effort. I think that um, I think there is a lot of ground to be gained there and I think that we need to continue to strive to be national leaders in that	collaboration (secondary), disassociation (secondary)
	1013	So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge.	collaboration (secondary), paternalism (secondary), redemption (secondary)

	1013	So, we get the pain service involved and it's a real challenge because they feel genuine pain, their threshold is lower and it is extremely hard to control their pain and so you have to rely a lot on non-steroidal agents, that kind of stuff What works or doesn't work to treat their pain in your experience? So Toradol [works] but it's a real challenge. And when I see somebody who's had that problem pre-op I warn them about it.	pain management, pre-operation care, collaboration (secondary)
	1013	So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	collaboration (secondary), rationalization (secondary), rigidity (secondary)
	1014	S: Uh, so, um, so, hopefully, they're helping us. I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before.	collaboration (secondary), blame (secondary)
	1014	I: Gotcha. How knowledgeable do you feel about the available treatments for people who use drugs? S: To a certain extent. You know, I mean, I mean, what do you mean treatments? I: Um, like, how knowledgeable are you about, like, methadone programs and treatment programs? S: I can, I can, you know, a little bit, but I, for	disassociation (secondary), collaboration (secondary)

		me, all I need to do is to be the bridge to connect them with the right people, but I can't, I can't just have a deep, deep discussion.	
	1014	Um, try to educate the patient as much as we can, but again, you're talking to the wrong guy. We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over.	disassociation (secondary), SUD (secondary), collaboration (secondary)
	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	collaboration (secondary)
	1014	S: Here we go. I rely on the, again, on people helping us out with this, the critical care, the intensivist, because those, those withdrawal, they can get into trouble, especially if you just rush to an operation for one reason or another. And, um, not rush, but you didn't see that they're gonna go into the throe, and after the operation, they are in bad shape, at a minimum they can rip their breastbone apart,	prioritization (secondary), collaboration (secondary)

		they don’t wake up that quickly from the anesthetic, you know, they are still intubated, they’re wiggling in bed, and they end up hurting themselves, and the mediastinum, if they tear open their breastbone, they can get infected and go from one thing to another. It is a medical problem more than anything.	
	1001	ah, there is I think a service now. I think this is recently established. I haven't had much experience working with this group of professionals here yet, but I'm happy to work with them if there is such opportunity. This group of patients represents a challenging patient population, I think not just from the medical standpoint. There is also a lot of ethic issues and social issues involved. So I feel there should be a team taking care of these patients.	collaboration (secondary)
	1001	Yeah, and I think most of my colleagues share the same perspective. You know, there is really no conflict among us. We have our own standards, and if we need help – that's usually the case from the effects of the disease – you know, ethic committees. So they're around. They are available.	responsibility (secondary), collaboration (secondary)
	1001	I have some knowledge, but I rely on the specialist – that you help me take care of those patients.	collaboration (secondary)
	1001	Interviewer: All right, and what do you think about the term 'drug rehab?' Respondent: I don't know the detail. I heard about the name. To me it is very difficult. I think theoretically there will be successful stories, but I see it clinically it happened a lot. People tended to relapse back into the drug use [in getting the effects again and again]. I think it's hard for people, and I think they all deserve to be placed in drug rehab, if possible, to have kind of their program that we help them get over the drug addiction, if possible. I personally think it should be mandatory for them to join this program, but I don't think it's going to be the case – but I would recommend that every patient who has been on drugs to be evaluated by the specialist. If they request those patients to go to rehab, I would support it.	collaboration (secondary), rigidity (secondary)
	1001	We have [our OTNs] – you know, the [protocol] – but if we believe if somebody postoperative is in pain or (their) narcotics use is out of norm, then we would consult a specialist. But first we want to – you know, a medical reason – if that can be explained. If there's really no medical reason for excessive or intensive pain, then we would investigate.	collaboration (secondary), redemption (secondary)

	1001	I almost routinely consult, yeah. So the two services – this is why I would hope there would be a program here. That way there would be a multidisciplinary care on each single patient who has such a history, but currently we have to call the individual [consult service] – for example, the drug addiction service and psychiatry. I cannot [tell you] how much they are able to help if they are willing, just because this group of patients always is challenging to everybody. So I think overall we are doing the best we can.	collaboration (secondary), disassociation (secondary)
	1001	You know, I've seen that before. I've seen all kinds of withdrawal, not just from narcotics – also alcohol, you know? But when it occurs, or clinically we suspect withdrawal, then we bring in the specialist. Certainly those patients will be carefully monitored and medicated.	collaboration (secondary)
	1001	To be honest, I really don't know the [outer perspective of our practice]. So there will be the case management and social workers who help with those perspectives. I make decisions based on a patient's own medical need. There will be other care that we have to consider, but gladly we have specialists to help us out.	collaboration (secondary), disassociation (secondary)
	1001	I don't think so. Yeah, I am more interested in taking care of a patient surgically, but I know it's a challenging process. So I have been relying on the specialists who help me take care of these patients. So there are things I don't know, and try not to interfere there in the area where I have not much knowledge.	collaboration (secondary), disassociation (secondary)
	1001	I'm not sure if we have an official team. I think we've been talking about it for some time. Since I'm not taking care of a lot of these patients [off-mic], I may take care of an endocarditis patient once or twice a year. It's just not my own personal interest. So I'm not aware if we have a formal, interdisciplinary team, but certainly the process is something that requires a team approach. And that's being done, but I just don't know if we officially have such a team.	collaboration (secondary), disassociation (secondary)
	1001	Yeah, absolutely. I think those patients should be taken care of by surgeons, medical specialists, psychiatrists, pharmacists – from every perspective to develop a plan.	collaboration (secondary)
	1010	ou don’t have the option to say I do not feel comfortable exposing myself to this, I mean I am willing to take a chance when I don’t know a patient has it, but if I have you know a drug addict with a high viral load I don’t have the right in paper at least to say I do not feel comfortable operating. And maybe I shouldn’t. I don’t know. But it is something I think about.	collaboration (secondary), responsibility (secondary)

	1010	I think about is if you are a police officer and you get shot on the job, there is a huge mechanism to support you and your family, to support your family because you are gone, same if you are a firefighter and you are killed in fire. I think if something happened to me, my family would have a very hard time getting through. Because we as a profession lack the mechanisms to support each other. We actually do the opposite we don't treat each other well. So, because of these three reasons it does cross my mind a lot when I operate.	collaboration (secondary)
	1010	Do you feel supported in your care of people who inject drugs? Supported by whom? Potentially that service? I can't say I have sought their support. We have the multidisciplinary meeting where I hear their views, you know listen to what they have to say. I have sought their medical advice and I think they are always available to give medical advice, but that is just one piece of the puzzle that you need to put together to decide what is the best course. Do you think the hospital could do more to support you in the care of these patients? No, I feel supported by the hospital.	collaboration (secondary), responsibility (secondary)
	1010	Tell me about your experience with managing pain in this population. They always have much higher needs than the standard patient. I don't think it is because of who they are, like because they are crybabies, I think it well, it I think it is a medical fact that if you have been exposed to opiates then your baseline without anything is pain. I don't know what that pain is they talk about, this pain all over the place that goes away when they shoot up, I can't imagine what that is, but I would think that, it is something, the only way I can associate with that is with the flu and you have like this weird pain all over, it doesn't happen that often but we have all gotten the flu. Which is not quite a pain it's a different thing, but I would think it is the same. Do you consult another service for pain management in this population? Not always. If we cannot handle the pain and the pain is affecting let me think. I don't think we always do actually. The addiction services are involved, and I believe they have something to do with that because you don't just want to give someone 50 Percocets and send them home. Usually the patients themselves are very scared of taking percocets and uh so I'm trying to remember exactly what we do. We don't always get the pain service,	collaboration (secondary)

		but the addiction service is involved, and I believe they are the ones who decide how much and what kind and that stuff.	
	1010	Tell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	collaboration (secondary), disassociation (secondary), rigidity (secondary)
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	SUD (secondary), collaboration (secondary), responsibility (secondary)

	1010	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes Who comes to these meetings and has it been helpful? Surgeons, cardiologists, infectious disease, and then addiction slash psychology and social workers. And yes, it is helpful. Anything specifically that has been worthwhile? The one thing that I have found useful in these meetings is that many people who may have thought that you are like the cold-hearted surgeon because you just wrote a note that no I don't think this person should have an operation hopefully, they will see that you are actually a human being. They're the ones that talk about being open minded and all this stuff but sometimes I don't think they are. So, if they meet you in person and have a discussion maybe they will see your viewpoint too, if they want to. So, I think they are very good. I think every time you bring people together and discuss something it is always good and people who hide behind an email, keyboard, app, I think that is bad.	collaboration (secondary)
	1010	I would like people in various consulting services to use discourse and open-mindedness not as a talking point but as a good thing, as a virtue, something that has to happen when you take care of patients. I think that sometimes people are rushed to uh, you know they come in with preconceived ideas about who you are and what you are going to do, and I don't think that is fair, I don't think that is right.	collaboration (secondary)
	1001	ah, there is I think a service now. I think this is recently established. I haven't had much experience working with this group of professionals here yet, but I'm happy to work with them if there is such opportunity. This group of patients represents a challenging patient population, I think not just from the medical standpoint. There is also a lot of ethic issues and social issues involved. So I feel there should be a team taking care of these patients.	collaboration (secondary)
	1001	Yeah, and I think most of my colleagues share the same perspective. You know, there is really no conflict among us. We have our own standards, and if we need help – that's usually the case from the effects of the disease – you know, ethic committees. So they're around. They are available.	collaboration (secondary)

	1001	We have [our OTNs] – you know, the [protocol] – but if we believe if somebody postoperative is in pain or (their) narcotics use is out of norm, then we would consult a specialist. But first we want to – you know, a medical reason – if that can be explained. If there's really no medical reason for excessive or intensive pain, then we would investigate.	collaboration (secondary)
	1001	I almost routinely consult, yeah. So the two services – this is why I would hope there would be a program here. That way there would be a multidisciplinary care on each single patient who has such a history, but currently we have to call the individual [consult service] – for example, the drug addiction service and psychiatry. I cannot [tell you] how much they are able to help if they are willing, just because this group of patients always is challenging to everybody. So I think overall we are doing the best we can.	collaboration (secondary)
	1001	To be honest, I really don't know the [outer perspective of our practice]. So there will be the case management and social workers who help with those perspectives. I make decisions based on a patient's own medical need. There will be other care that we have to consider, but gladly we have specialists to help us out.	collaboration (secondary)
	1001	I don't think so. Yeah, I am more interested in taking care of a patient surgically, but I know it's a challenging process. So I have been relying on the specialists who help me take care of these patients. So there are things I don't know, and try not to interfere there in the area where I have not much knowledge.	collaboration (secondary)
	1001	I'm not sure if we have an official team. I think we've been talking about it for some time. Since I'm not taking care of a lot of these patients [off-mic], I may take care of an endocarditis patient once or twice a year. It's just not my own personal interest. So I'm not aware if we have a formal, interdisciplinary team, but certainly the process is something that requires a team approach. And that's being done, but I just don't know if we officially have such a team.	collaboration (secondary)
	1001	Yeah, absolutely. I think those patients should be taken care of by surgeons, medical specialists, psychiatrists, pharmacists – from every perspective to develop a plan.	collaboration (secondary)
collaboration with addiction medicine			

	1012	Yes, we have that and I've not been satisfied with that service. I think they are understaffed and underfunded.	collaboration with addiction medicine
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group

	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID
	1006	My other comment is just to reinforce the statements on what a huge difference the addiction medicine service made—when I heard that talk, it was several years ago, probably five. I thought well halleluiah, now there's some hope, 'cause otherwise just either treating a patient for four to six weeks on your service, or sending 'em back into the world to get reinfected.	collaboration with addiction medicine, multidisciplinary group
	1010	I can't say I have sought their support. We have the multidisciplinary meeting where I hear their views, you know listen to what they have to say. I have sought their medical advice and I think they are always available to give medical advice, but that is just one piece of the puzzle that you need to put together to decide what is the best course.	collaboration with addiction medicine, multidisciplinary group
	1010	How knowledgeable do you feel about the available treatments for people who use drugs? Um in terms of cardiac issues, infectious disease issues, or counseling? In terms of actual treatment of their substance use I know that things have changed in the past years and there is medications being given, suboxone, you know uh psychological help. But I can't say I am an expert for what works for a specific condition.	knowledge, SUD treatment, collaboration with addiction medicine
	1010	Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered	societal issue, SUD treatment, accountability, support for patient, collaboration with addiction medicine

		but in terms of how well it works and what the percentages are, I am not familiar.	
	1010	How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service.	SUD treatment, follow-up care, data, collaboration with addiction medicine, commitment to recovery, deservingness
	1010	And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	collaboration with addiction medicine, timing of SUD tx
	1010	Tell me about your experience with managing pain in this population. They always have much higher needs than the standard patient. I don't think it is because of who they are, like because they are crybabies, I think it well, it I think it is a medical fact that if you have been exposed to opiates then your baseline without anything is pain. I don't know what that pain is they talk about, this pain all over the place that goes away when they shoot up, I can't imagine what that is, but I would think that, it is something, the only way I can associate with that is with the flu and you have like this weird pain all over, it doesn't happen that often but we have all gotten the flu. Which is not quite a pain it's a different thing, but I would think it is the same.	pain management, empathy, collaboration with addiction medicine
	1010	Do you consult another service for pain management in this population? Not always. If we cannot handle the pain and the pain is affecting let me think. I don't think we always do actually. The addiction services are involved, and I believe they have something to do with that because you don't just want to give someone 50 Percocets and send them home. Usually the patients themselves are very scared of taking percocets and uh so I'm trying to remember exactly what we do. We don't always get the pain service, but the addiction service is involved, and I believe they are the ones who decide how much and what kind and that stuff.	pain management, collaboration with addiction medicine, training

	1010	ell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, pain management, collaboration with addiction medicine, accountability, liability of medical professionals, deservingness, follow-up care, protocol, risk evaluation
	1010	I would like people in various consulting services to use discourse and open-mindedness not as a talking point but as a good thing, as a virtue, something that has to happen when you take care of patients. I think that sometimes people are rushed to uh, you know they come in with preconceived ideas about who you are and what you are going to do, and I don't think that is fair, I don't think that is right.	support for surgeons, collaboration with addiction medicine, desired changes, disagreements (professional), multidisciplinary group
	1019	Right. Right. Um, is there someone you can call in the hospital with addiction medicine expertise? Sure, there's, uh, consult psychiatry and then there's also a… a drug addiction team. There's also a branch of psychiatry that deals specifically with drug addiction. So you can hook these patients up with a… a rehab counselor while they're in hospital.	collaboration with addiction medicine, timing of SUD tx
	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we	discussing addiction, collaboration with addiction medicine, SUD treatment, lack of knowledge

		get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	
	1019	Right. Right. Um, is there someone you can call in the hospital with addiction medicine expertise? Sure, there's, uh, consult psychiatry and then there's also a… a drug addiction team. There's also a branch of psychiatry that deals specifically with drug addiction. So you can hook these patients up with a… a rehab counselor while they're in hospital.	collaboration with addiction medicine, timing of SUD tx
	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration with addiction medicine, data, relapse, frustration, futility

	1008	nterviewer: Okay. Cool. And how knowledgeable do you feel about the available treatments for people who use drugs? You know, like available treatment for opioid use disorder or something? Respondent: I refer to the -- there's the -- that team-- that does this. I refer everybody to them. Interviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance. Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem	SUD treatment, lack of knowledge, commitment to recovery, withdrawal management, pain management, deservingness, collaboration with addiction medicine
	1002	Interviewer: And you had a good experience with those other teams? Respondent: Yeah, I think it's okay. Interviewer: Anything they could do better? Respondent: I don't know.	multidisciplinary group, collaboration with addiction medicine, collaboration (secondary)
	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform	discussing addiction, collaboration with addiction medicine, SUD treatment, lack of knowledge

		the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	
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	1018	Is there someone you can call in the hospital with addiction medicine expertise? Yes, both here and [prior institution] there was a good group.	collaboration with addiction medicine
	1011	Is there someone you can call in the hospital with addiction medicine expertise? Yes	collaboration with addiction medicine
	1016	I: Ok. Is there someone you can call in the hospital with addiction medicine expertise? S: Yes.	collaboration with addiction medicine
	1006	Interviewer: Is there someone you can call in the hospital with addiction medicine experience and expertise? Interviewee: We have a whole service. Actually, a few years ago I went to—it was a small group, kind of grand rounds type thing, I can't remember who sponsored it. It may have been infectious disease where the person from addiction medicine spoke, it was quite interesting.	collaboration with addiction medicine, multidisciplinary group, administration, support for surgeons
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs,	support for surgeons, changes over time, follow-up care, PICC line risk, administration, collaboration with addiction medicine, futility, societal issue

		and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good.	
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, post-operation care, paternalism, commitment to recovery, follow-up care, timing of SUD tx
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have	tx compared to colleagues, stigma , perception of risk in PWID, disagreements (professional), collaboration with addiction medicine, deservingness, multidisciplinary group

		two opinions, they respect the opinion and they'll go along with it	
	1006	Interviewer: Okay. To close, is there anything I haven't asked you about today that you'd like to add? Interviewee: Well, if we have those guidelines, I'd like to know where they are, 'cause I'd be interested in reading them. My other comment is just to reinforce the statements on what a huge difference the addiction medicine service made—when I heard that talk, it was several years ago, probably five. I thought well halleluiah, now there's some hope, 'cause otherwise just either treating a patient for four to six weeks on your service, or sending 'em back into the world to get reinfected.	collaboration with addiction medicine, protocol, changes over time, support for patient
	1002	Interviewer: Is there someone you feel you could call in the hospital who has addiction medicine expertise? Respondent: I'm not sure.	collaboration with addiction medicine
	1007	Thank you. So is there someone you can call in the hospital with addiction medicine expertise? Speaker 2: Absolutely. I mean, at our hospital, very… probably the best in the city for addiction. So it's good to be working carefully with them.	collaboration with addiction medicine, tx compared to broader
	1007	Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were	collaboration with addiction medicine, knowledge, discussing addiction, societal issue

		surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	
	1007	All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox. Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	rehab v detox, support for patient, collaboration with addiction medicine, defensive
	1007	Okay. So how about her opioid use disorder, how should it be treated and when? Speaker 2: Well, um, I mean I'm not an expert in the field. We wouldn't, like I said, we'll work very closely with addiction medicine, so I would defer to them, but I think they should be engaged immediately.	SUD treatment, collaboration with addiction medicine
	1007	Okay. Thank you. Please call me about your experience with managing pain in this population. Speaker 2: Um, again, we work with addiction medicine and have them consult before the surgery, but we would acknowledge them same as anyone else with additional methadone or whatever.	pain management, collaboration with addiction medicine

	1017	Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway.	discussing addiction, changes over time, commitment to recovery, patient consent, collaboration with addiction medicine, protocol, deservingness
	1017	So, you talked about when you were in BLANK. Is there someone you can call in the hospital here with addiction medicine expertise? S: Now…now we can. It is relatively recent.	collaboration with addiction medicine, changes over time
	1013	Looking back is there anything you would change about your approach? To those sorts of patients? I don't think so. The critical issue is getting addiction medicine involved. So, if you say over the course of my career years ago there wasn't really access to addiction medicine to make that happen.	SUD treatment, collaboration with addiction medicine, changes over time
	1013	s there someone you can call in the hospital with addiction medicine expertise? Yes, so we have got the addiction service Do you feel supported in your care of people who inject drugs? Yes. How do you think the hospital could support you more in the care of patients who inject drugs? Uh, I think that uh throwing more resources behind the whole addiction medicine effort. I think that um, I think there is a lot of ground to be gained there and I think that we need to continue to strive to be national leaders in that	collaboration with addiction medicine, support for patient, lack of resources
	1013	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge.	collaboration with addiction medicine, second chance, commitment to recovery, follow-up care, timing of SUD tx

		What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	
	1013	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	PICC line risk, collaboration with addiction medicine, accountability, commitment to recovery, support for patient, timing of SUD tx
	1003	nd then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards. Interviewer: How do you like, bring him in, into your cases? Respondent: Well, fortunately he's been with us for about a year, so I – when I go see a patient, once I assess them, I, if he hasn't seen the patient yet, I notify the medical team to get in contact with him, and he's pretty good at coming to see a patient within 24 hours. And so, that's great. And then, I stay in contact with him and you know, tell him the surgery is scheduled and he'll see the patient afterwards, too. So, it's been a good collegiality – collegial relationship – colleagues and addiction medicin	collaboration with addiction medicine, support for patient, support for surgeons, follow-up care, SUD treatment

	1003	Respondent: Well, I would like to see his efforts supported. Right now, he's the only one we have. I think – this is going to - I want the hospital to support him. In terms of me, my efforts, well I've got no major issues there. I mean, if I book someone up for surgery, then I don't [meet] any resistance from the hospital. They, you know, they don't – they trust our judgement about who needs an operation, and then our job to do a – execute, and do a good operation. So not particularly. I don't have any outstanding conflicts with the hospital in terms of support for the program.	collaboration with addiction medicine, support for surgeons, administration, discussing addiction, multidisciplinary group
	1003	we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	multidisciplinary group, collaboration with addiction medicine, pain management, post-operation care, timing of SUD tx
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	pain management, follow-up care, post-operation care, liability of medical professionals, collaboration with addiction medicine, changes over time
	1003	espondent: - we've gotten much better at preventing withdrawal. It used to be more of a problem than now. I think again, with addiction medicine involved, we maintain them in some narcotics before surgery, during, and after. We're not stopping things cold turkey. We're much better at that than we used to be. So, I've not seen much withdrawal, tell you the truth. Recently.	withdrawal management, changes over time, collaboration with addiction medicine
	1009	Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these	multidisciplinary group, collaboration with addiction medicine, protocol, risk evaluation

		cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	
	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we	multidisciplinary group, collaboration with addiction medicine, support for surgeons, accountability, frustration, futility, lack of resources, post-operation care

		feel supported for caring for these patients? One hundred percent, no.	
	1009	Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three	tx compared to colleagues, deservingness, collaboration with addiction medicine, multidisciplinary group, lack of resources, frustration, accountability, desired changes, follow-up care

		weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1009	nterviewer: I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration with addiction medicine, discussing addiction, frustration, futility

	1011	Do you feel supported in your care of people who inject drugs? Yes, so I, you know I think this is a great issue that we have started that we have this multidisciplinary team now that we meet, we schedule, we meet scheduled once a month but we can also call for ad hoc meetings if there is a patient that was extremely challenging and we needed help managing that. Its composed of the addiction treatment team, the ID team, cardiothoracic surgeons, their primary care providers or whomever is taking care of the floor, and really when we started the process it was interesting to watch how the team has evolved, because I remember when we started the process a couple years ago, everyone was coming at it from different perspectives and everyone had the patients best interest in heart but I don't think they were seeing what the other teams were seeing. You know the addiction team most of the time was saying you need to operate on these patients because that is what needs to happen and the surgeons were reluctant because of obvious reasons but what I find very interesting is that more often than not recently everyone is on the same page, or trying to get on the same page. There is much less arguments or disagreements as to what the best plan of care is for these patients might be.	multidisciplinary group, support for surgeons, empathy, changes over time, collaboration with addiction medicine
	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent

	1017	I: So, you talked about when you were in BLANK. Is there someone you can call in the hospital here with addiction medicine expertise? S: Now…now we can. It is relatively r	collaboration with addiction medicine, changes over time
	1013	Looking back is there anything you would change about your approach? To those sorts of patients? I don't think so. The critical issue is getting addiction medicine involved. So, if you say over the course of my career years ago there wasn't really access to addiction medicine to make that happen.	collaboration with addiction medicine, changes over time, SUD treatment
	1013	Is there someone you can call in the hospital with addiction medicine expertise? Yes, so we have got the addiction service	collaboration with addiction medicine
	1013	So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge.	timing of SUD tx, commitment to recovery, follow-up care, collaboration with addiction medicine, second chance
	1013	What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	lack of knowledge, collaboration with addiction medicine
	1013	So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	priorities, commitment to recovery, PICC line risk, collaboration with addiction medicine, timing of SUD tx, support for patient
	1015	: Is there someone you can call in the hospital with addiction medicine expertise? S: Yeah, I don't know that number, but people on my team do and we do get in touch with them.	collaboration with addiction medicine, lack of knowledge

	1007	Speaker 1: Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	SUD treatment, collaboration with addiction medicine, discussing addiction, societal issue
	1007	Speaker 1: All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox. Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	SUD treatment, knowledge, collaboration with addiction medicine, societal issue
	1007	Speaker 2: Um, again, we work with addiction medicine and have them consult before the surgery, but we would acknowledge them same as anyone else with additional methadone or whatever.	collaboration with addiction medicine, multidisciplinary group, SUD treatment
	1007	Speaker 1: Okay. So some hospitals convene a multidisciplinary group. To evaluates people who inject drugs for valve replacements. Does your institution do this as well? Speaker 2: Yes.	multidisciplinary group, collaboration with addiction medicine

		Speaker 1: Okay. So who comes to these meetings and has it been helpful? Speaker 2: Yes. Everybody. Um, multidisciplinary surgery, cardiology, and with practice ID, neurology, addiction medicine.	
	1001	Interviewer: Is there someone you can call in the hospital with addiction medicine expertise? Respondent: Yeah, there is I think a service now. I think this is recently established. I haven't had much experience working with this group of professionals here yet, but I'm happy to work with them if there is such opportunity. This group of patients represents a challenging patient population, I think not just from the medical standpoint. There is also a lot of ethic issues and social issues involved. So I feel there should be a team taking care of these patients.	collaboration with addiction medicine, multidisciplinary group, societal issue, follow-up care
	1001	Interviewer: All right, and do you feel knowledgeable about available treatments available to people who use drugs? Respondent: I have some knowledge, but I rely on the specialist – that you help me take care of those patients. Interviewer: Do you know what any of the available treatments are for opiate use disorder? Or mainly you work with the specialists? Respondent: I will say I mainly work with the specialists, yeah.	collaboration with addiction medicine, knowledge, SUD treatment, training
	1001	Interviewer: Do you find yourself consulting other services for pain management issues? Respondent: I almost routinely consult, yeah. So the two services – this is why I would hope there would be a program here. That way there would be a multidisciplinary care on each single patient who has such a history, but currently we have to call the individual [consult service] – for example, the drug addiction service and psychiatry. I cannot [tell you] how much they are able to help if they are willing, just because this group of patients always is challenging to everybody. So I think overall we are doing the best we can.	support for surgeons, pain management, multidisciplinary group, stigma , collaboration with addiction medicine
	1001	Interviewer: Can you tell me about your experience managing withdrawal in this population? Respondent: You know, I've seen that before. I've seen all kinds of withdrawal, not just from	withdrawal management, support for surgeons, multidisciplinary group, collaboration with addiction medicine

		narcotics – also alcohol, you know? But when it occurs, or clinically we suspect withdrawal, then we bring in the specialist. Certainly those patients will be carefully monitored and medicated.	
	1001	Interviewer: Have you ever personally experienced conflict with your team or other staff members in working with these patients? If so, how was it resolved, and what was the outcome? Respondent: I don't think so. Yeah, I am more interested in taking care of a patient surgically, but I know it's a challenging process. So I have been relying on the specialists who help me take care of these patients. So there are things I don't know, and try not to interfere there in the area where I have not much knowledge.	support for surgeons, lack of knowledge, disagreements (professional), collaboration with addiction medicine
	1004	I: is there someone you can call in the hospital with addiction medicine expertise? R: yes, he's added psychiatry and psychology support to patient care, the hospital has really only treated the acute physical needs before him. He's great, especially if the patient doesn't have a lot of social support.	collaboration with addiction medicine, support for patient, support for surgeons
	1004	I: What about after the surgery? Would a PICC line and sending a patient home be fine? Yes, that's the best way to get antibiotics. There's no point in keeping them in the hospital, we can't afford that. Though if they wanted to go to a nursing facility afterwards, I'd have no objection to that. The best option for the patient would be whatever Dustin recommends, in terms of relapse risk.	post-operation care, collaboration with addiction medicine, relapse, PICC line risk, cost
	1004	R: What is your sense of how like your approach to treating patients who inject drugs with infective endocarditis, compared to like, other people, other surgeons here at Tufts, or other surgeons around the country? I: I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	tx compared to broader, tx compared to colleagues, disagreements (professional), collaboration with addiction medicine, regional differences
	1004	I: Some hospitals convene a multi-disciplinary group to evaluate people who inject drugs, for valve replacement. Does this institution do that? R: I'm not sure, well, we had that meeting with Dr. Wurcel but that was more for research. When we're working with a case we have infectious disease doctors, and cardiology, and Dustin for addiction psychiatry.	multidisciplinary group, collaboration with addiction medicine

	1005	Yes, we recommend addiction medicine consultants on every patient.	collaboration with addiction medicine, multidisciplinary group
	1005	Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl just in the ICU, and then we try to bridge that to the lowest dose oral narcotic that we can on the floor. My preference is to try to minimize them to just tramadol and/or Tylenol. Many times the pain service will put folks on PCAs and continue their IV medication a lot longer than we like to do that.	pain management, multidisciplinary group, collaboration with addiction medicine
	1005	Interviewer: Okay. I think you're already answering this one as well, some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Interviewee: Not that I know of. Interviewer: Do you think it would be helpful? Interviewee: Yes. Interviewer: You already answered that. Who needs to be involved and come to these meetings to make it worthwhile? Interviewee: Well it would be a difficult time to try to get all of us together. Perhaps, a once every two weeks or once a month meeting on the difficult cases would be nice. I think that it needs to be cardiac surgery, cardiology, infectious disease, addiction medicine, pain team, social work and discharge planner.	multidisciplinary group, desired changes, collaboration with addiction medicine
	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration with addiction medicine, multidisciplinary group, futility, frustration

	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	collaboration with addiction medicine, support for surgeons, PICC line risk, administration
	1012	s there someone you can call in the hospital with addiction medicine expertise? Yes, we have that and I've not been satisfied with that service. I think they are understaffed and underfunded	collaboration with addiction medicine, lack of resources
	1012	ell me about your experience with managing withdrawal in this population. So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them hemodynamically unstable and it's just not safe.	withdrawal management, collaboration with addiction medicine, multidisciplinary group
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	contract, collaboration with addiction medicine, paternalism, multiple surgeries, tx compared to colleagues, support for patient, frustration
	1018	Is there someone you can call in the hospital with addiction medicine expertise? Yes, both here and [prior institution] there was a good group.	collaboration with addiction medicine
	1005	Yes, we recommend addiction medicine consultants on every patient.	collaboration with addiction medicine, multidisciplinary group
	1005	Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl just in the ICU, and then we try to bridge that to the lowest dose oral narcotic that we can on	pain management, multidisciplinary group, collaboration with addiction medicine

		the floor. My preference is to try to minimize them to just tramadol and/or Tylenol. Many times the pain service will put folks on PCAs and continue their IV medication a lot longer than we like to do that.	
	1005	Interviewer: Okay. I think you're already answering this one as well, some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Interviewee: Not that I know of. Interviewer: Do you think it would be helpful? Interviewee: Yes. Interviewer: You already answered that. Who needs to be involved and come to these meetings to make it worthwhile? Interviewee: Well it would be a difficult time to try to get all of us together. Perhaps, a once every two weeks or once a month meeting on the difficult cases would be nice. I think that it needs to be cardiac surgery, cardiology, infectious disease, addiction medicine, pain team, social work and discharge planner.	multidisciplinary group, desired changes, collaboration with addiction medicine
	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1017	I: So, you talked about when you were in BLANK. Is there someone you can call in the hospital here with addiction medicine	collaboration with addiction medicine, changes over time

		expertise? S: Now…now we can. It is relatively r	
	1004	yes, he's added psychiatry and psychology support to patient care, the hospital has really only treated the acute physical needs before him. He's great, especially if the patient doesn't have a lot of social support.	collaboration with addiction medicine, multidisciplinary group, support for surgeons, support for patient
	1004	What about after the surgery? Would a PICC line and sending a patient home be fine? Yes, that's the best way to get antibiotics. There's no point in keeping them in the hospital, we can't afford that. Though if they wanted to go to a nursing facility afterwards, I'd have no objection to that. The best option for the patient would be whatever Dustin recommends, in terms of relapse risk.	PICC line risk, relapse, multidisciplinary group, collaboration with addiction medicine
	1004	I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	disagreements (professional), tx compared to broader, tx compared to colleagues, collaboration with addiction medicine
	1004	I'm not sure, well, we had that meeting with Dr. Wurcel but that was more for research. When we're working with a case we have infectious disease doctors, and cardiology, and Dustin for addiction psychiatry.	multidisciplinary group, collaboration with addiction medicine
	1016	I: Ok. Is there someone you can call in the hospital with addiction medicine expertise? S: Yes	collaboration with addiction medicine
	1006	Interviewer: Is there someone you can call in the hospital with addiction medicine experience and expertise? Interviewee: We have a whole service. Actually, a few years ago I went to—it was a small group, kind of grand rounds type thing, I can't remember who sponsored it. It may have been infectious disease where the person from addiction medicine spoke, it was quite interesting.	administration, collaboration with addiction medicine, multidisciplinary group, support for surgeons

	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, commitment to recovery, follow-up care, post-operation care, risk evaluation
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group

	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID
	1006	My other comment is just to reinforce the statements on what a huge difference the addiction medicine service made—when I heard that talk, it was several years ago, probably five. I thought well halleluiah, now there's some hope, 'cause otherwise just either treating a patient for four to six weeks on your service, or sending 'em back into the world to get reinfected.	collaboration with addiction medicine, multidisciplinary group
	1012	Yes, we have that and I've not been satisfied with that service. I think they are understaffed and underfunded.	collaboration with addiction medicine
	1012	So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them hemodynamically unstable and it's just not safe.	withdrawal management, pain management, collaboration with addiction medicine, multidisciplinary group, disagreements (professional), paternalism, defensive
	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have	collaboration with addiction medicine, support for surgeons, PICC line risk, administration, blame (secondary), disassociation (secondary)

		a police officer there all the time. I don't know. I think the hospital's pretty supportive.	
	1015	I: Is there someone you can call in the hospital with addiction medicine expertise? S: Yeah, I don't know that number, but people on my team do and we do get in touch with them.	lack of knowledge, collaboration with addiction medicine
	1010	Is there someone you can call in the hospital with addiction medicine expertise? Yes there is a service.	collaboration with addiction medicine
	1010	Do you feel supported in your care of people who inject drugs? Supported by whom? Potentially that service? I can't say I have sought their support. We have the multidisciplinary meeting where I hear their views, you know listen to what they have to say. I have sought their medical advice and I think they are always available to give medical advice, but that is just one piece of the puzzle that you need to put together to decide what is the best course. Do you think the hospital could do more to support you in the care of these patients? No, I feel supported by the hospital.	support for surgeons, collaboration with addiction medicine, multidisciplinary group, administration
	1010	How knowledgeable do you feel about the available treatments for people who use drugs? Um in terms of cardiac issues, infectious disease issues, or counseling? In terms of actual treatment of their substance use I know that things have changed in the past years and there is medications being given, suboxone, you know uh psychological help. But I can't say I am an expert for what works for a specific cond	knowledge, SUD treatment, collaboration with addiction medicine

	1010	What do you think about drug rehab? Do you have thoughts on drug rehab? Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar. How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service. And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	SUD treatment, accountability, societal issue, support for patient, collaboration with addiction medicine
	1010	Tell me about your experience with managing pain in this population. They always have much higher needs than the standard patient. I don't think it is because of who they are, like because they are crybabies, I think it well, it I think it is a medical fact that if you have been exposed to opiates then your baseline without anything is pain. I don't know what that pain is they talk about, this pain all over the place that goes away when they shoot up, I can't imagine what that is, but I would think that, it is something, the only way I can associate with that is with the flu and you have like this weird pain all over, it doesn't happen that often but we have all gotten the flu. Which is not quite a pain it's a different thing, but I would think it is the same. Do you consult another service for pain management in this population? Not always. If we cannot handle the pain and the pain is affecting let me think. I don't think we always do actually. The addiction services are involved, and I believe they have something to do with that because you don't just want to give someone 50 Percocets and send them home. Usually the patients themselves are very scared of taking percocets and uh so I'm trying to remember exactly what	pain management, collaboration with addiction medicine

		we do. We don't always get the pain service, but the addiction service is involved, and I believe they are the ones who decide how much and what kind and that stuff.	
	1013	What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	lack of knowledge, collaboration with addiction medicine, disassociation (secondary)
	1014	I: Is there someone you can call in the hospital with addiction medicine expertise? S: Now, there is.	collaboration with addiction medicine, changes over time
	1011	Is there someone you can call in the hospital with addiction medicine expertise? Yes	collaboration with addiction medicine
	1011	Do you feel supported in your care of people who inject drugs? Yes, so I, you know I think this is a great issue that we have started that we have this multidisciplinary team now that we meet, we schedule, we meet scheduled once a month but we can also call for ad hoc meetings if there is a patient that was extremely challenging and we needed help managing that. Its composed of the addiction treatment team, the ID team, cardiothoracic surgeons, their primary care providers or whomever is taking care of the floor, and really when we started the process it was interesting to watch how the team has evolved, because I remember when we started the process a couple years ago, everyone was coming at it from different perspectives and everyone had the patients best interest in heart but I don't think they were seeing what the other teams were seeing. You know the addiction team most of the time was saying you need to operate on these patients because that is what needs to happen and the surgeons were reluctant because of obvious reasons but what I find very interesting is that more often than not recently everyone is on the same page, or trying to get on the same page. There is much less arguments or disagreements as to what the best plan of care is for these patients might be.	support for surgeons, multidisciplinary group, collaboration with addiction medicine

		How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	
	1011	How knowledgeable do you feel about the available treatments for people who use drugs? Um, I've learned some going to our multidisciplinary team meetings. Um, I don't consider myself to be an expert or even a specialist in that, but I am glad that I know people, I know who to call.	knowledge, SUD treatment, collaboration with addiction medicine
	1002	Interviewer: Is there someone you feel you could call in the hospital who has addiction medicine expertise? Respondent: I'm not sure.	collaboration with addiction medicine
	1002	Interviewer: And you had a good experience with those other teams? Respondent: Yeah, I think it's okay. Interviewer: Anything they could do better? Respondent: I don't know.	multidisciplinary group, collaboration with addiction medicine

	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards.	discussing addiction, SUD treatment, collaboration with addiction medicine, commitment to recovery, empathy, follow-up care, patient consent
	1003	fortunately he's been with us for about a year, so I – when I go see a patient, once I assess them, I, if he hasn't seen the patient yet, I notify the medical team to get in contact with him, and he's pretty good at coming to see a patient within 24 hours. And so, that's great. And then, I stay in contact with him and you know, tell him the surgery is scheduled and he'll see the patient afterwards, too. So, it's been a good collegiality – collegial relationship – colleagues and addiction medicine.	collaboration with addiction medicine, multidisciplinary group
	1003	Well, I would like to see his efforts supported. Right now, he's the only one we have. I think – this is going to - I want the hospital to support him. In terms of me, my efforts, well I've got no major issues there. I mean, if I book someone up for surgery, then I don't [meet] any resistance from the hospital. They, you know, they don't – they trust our judgement	multidisciplinary group, collaboration with addiction medicine, discussing addiction

		about who needs an operation, and then our job to do a – execute, and do a good operation. So not particularly. I don't have any outstanding conflicts with the hospital in terms of support for the program.	
	1003	Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	changes over time, support for patient, SUD treatment, stigma , societal issue, collaboration with addiction medicine, multidisciplinary group
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	accountability, changes over time, collaboration with addiction medicine, commitment to recovery, follow-up care, multidisciplinary group
	1003	ell, while they're in the hospital, obviously, they're being – well, we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help	multidisciplinary group, collaboration with addiction medicine, pain management, timing of SUD tx

		manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	pain management, changes over time, multidisciplinary group, collaboration with addiction medicine
	1003	we've gotten much better at preventing withdrawal. It used to be more of a problem than now. I think again, with addiction medicine involved, we maintain them in some narcotics before surgery, during, and after. We're not stopping things cold turkey. We're much better at that than we used to be. So, I've not seen much withdrawal, tell you the truth. Recently.	withdrawal management, multidisciplinary group, collaboration with addiction medicine
	1003	We've had a couple meetings. We should have more regular meetings. Dr. Wurcel actually had two excellent meetings that she directed. Yes, I think we should have like, at least monthly meetings with them more frequently. To discuss this problem. Yeah, multi-disciplinary approach. [What was] - what we've had. We had addiction medicine there, infectious disease, social work, surgeon - surgeons. Yeah.	collaboration with addiction medicine, multidisciplinary group
	1005	Interviewer: Is there someone in the hospital that you can call who has addiction medicine experience? Interviewee: Yes, we recommend addiction medicine consultants on every patient.	collaboration with addiction medicine, multidisciplinary group
	1005	Interviewer: Tell me a little bit about your experience with managing pain in this population? Interviewee: Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl just in the ICU, and then we try to bridge that to the lowest dose oral narcotic that we can on the floor. My preference is to	pain management, post-operation care, multidisciplinary group, collaboration with addiction medicine

		try to minimize them to just tramadol and/or Tylenol. Many times the pain service will put folks on PCAs and continue their IV medication a lot longer than we like to do that.	
	1005	Interviewer: Okay. Tell me your experience with managing withdrawal in this population? Interviewee: I think that by the time we see the patients and operate on them, usually the withdrawal has resolved and been treated by the medical or addiction team. We don't see a lot of withdrawal that we use benzos for in our patients when we operate on them. Interviewer: You may have already answered this, do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: No.	withdrawal management, collaboration with addiction medicine, pre-operation care, pain management
	1005	Okay. I think you're already answering this one as well, some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Interviewee: Not that I know of. Interviewer: Do you think it would be helpful? Interviewee: Yes. Interviewer: You already answered that. Who needs to be involved and come to these meetings to make it worthwhile? Interviewee: Well it would be a difficult time to try to get all of us together. Perhaps, a once every two weeks or once a month meeting on the difficult cases would be nice. I think that it needs to be cardiac surgery, cardiology, infectious disease, addiction medicine, pain team, social work and discharge planner.	multidisciplinary group, time constraints, desired changes, collaboration with addiction medicine
	1014	I: Is there someone you can call in the hospital with addiction medicine expertise? S: Now, there is.	collaboration with addiction medicine, changes over time

	1009	Is there someone that you could call in the hospital who has addiction medicine expertise? Surgeon: Yes. Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	collaboration with addiction medicine, multidisciplinary group, risk evaluation, futility
	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility

		to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration with addiction medicine, priorities, follow-up care, changes over time, discussing addiction, frustration, futility
commitment to recovery			

	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, futility, frustration, deservingness, redemption (secondary)
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation

		have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail.	time between operations, commitment to recovery, frustration, futility
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives
	1010	t does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	age, accountability, commitment to recovery, follow-up care, second chance, paternalism, discussing addiction, post-operation care

	1010	How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service.	SUD treatment, follow-up care, data, collaboration with addiction medicine, commitment to recovery, deservingness
	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	multiple surgeries, deservingness, lack of resources, commitment to recovery, frustration, futility, reinfection, relapse
	1010	For example, how would you feel about operating on someone who used to use drugs 10 years ago gets prosthetic valve endocarditis after a dental procedure? I wouldn't think twice about it. I would offer them an operation.	perception of risk in PWID, commitment to recovery, reinfection, time between operations
	1010	And what if when she presented with prosthetic valve endocarditis it was 5 years since she last used drugs? And then she relapsed? Yes. I would see that more favorably because I would think that she has shown that she can stay off drugs. Who am I to say what happened you know if she did it right after going home	perception of risk in PWID, relapse, commitment to recovery, deservingness, reinfection

		than if she did it 5 years later? Now what is the magic timeline? I don't know but to me that says that is someone who probably has a predilection to doing this and they fought hard for 5 years and uh, I would see it the same way as someone who had coronary artery disease and quit smoking for 5 years and then they smoked again after 5 years. Its uh, I am not going to pass judgement. So, it would make a difference, 5 years verses a day.	
	1019	Does this patient's commitment to treatment impact your surgical decisions? No. Absolutely not. That's not for me to judge.	commitment to recovery, deservingness, stigma
	1019	So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis	liver vs heart, accountability, commitment to recovery, deservingness, futility, stigma

	1019	OK. So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis Right because we have thousands of bioprostheses on the shelf. Um, not thousands maybe tens of… tens of… maybe a hundred, I don't know. [LAUGHTER] I don't know how many we have on shelf. But, we have lots. Right Point is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going	liver vs heart, commitment to recovery, futility, accountability, stigma

		to take care of the organs they’re going to get.	
	1008	what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	risk evaluation, deservingness, multiple surgeries, post-operation care, relapse, reinfection, commitment to recovery, follow-up care, frustration, futility

	1008	nterviewer: Okay. Cool. And how knowledgeable do you feel about the available treatments for people who use drugs? You know, like available treatment for opioid use disorder or something? Respondent: I refer to the -- there's the -- that team-- that does this. I refer everybody to them. Interviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance. Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem	SUD treatment, lack of knowledge, commitment to recovery, withdrawal management, pain management, deservingness, collaboration with addiction medicine

	1008	What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, multiple surgeries, risk evaluation, stigma , frustration, futility, paternalism
	1008	What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	priorities, medical model, deservingness, commitment to recovery, reinfection
	1008	And if it had been five years since she had last used drugs? Respondent: Yeah. I would be more prone to operate.	time between operations, deservingness, commitment to recovery, reinfection

	1019	OK. So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis Right because we have thousands of bioprostheses on the shelf. Um, not thousands maybe tens of… tens of… maybe a hundred, I don't know. [LAUGHTER] I don't know how many we have on shelf. But, we have lots. Right Point is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going	liver vs heart, commitment to recovery, futility, accountability, stigma

		to take care of the organs they're going to get.	
	1018	Does it impact what type of valve you use- mechanical or bioprosthetic that you would put in? Yes in that in certain say neurologic complications, mycotic aneurysms if present would strongly dissuade me from mechanical valves and anticoagulation but I do think often these patients are best served with bioprostheses, it gives them a period of simpler, less complicated life to see if they can wean themselves from substances. And if they can successfully then later convert to a mechanical	valve preference, commitment to recovery, perception of risk in PWID
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability

	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, stigma , tx compared to broader
	1018	What if it was 5 years since she last used drugs? Five years and this was a recurrent episode from reuse, yeah, she gets extra points for staying off drugs for 5 years.	commitment to recovery, second chances, time between operations, deservingness
	1016	I: Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more	reinfection, commitment to recovery, liability of medical professionals, risk evaluation, multiple surgeries

		operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	save lives, commitment to recovery, risk evaluation, deservingness, liability of medical professionals
	1016	Um, I think, too, the approach varies a little bit depending on what side of the heart, um, the lesion is on. So, um, if you have, uh, a lesion on the left side, we tend to be, and I tend to be a lot more aggressive, um, I'll tend to do more of a watch-and-wait on the right side of the heart. Um, in other words, let the patients get antibiotics, uh, because they, they've got bad tricuspid valve regurgitation, to some degree they can survive with that for a while. Let them prove that they can enter recovery, and then, I think the other piece of the puzzle is we have them come back to our clinic in six weeks for echo follow-up and to plan surgery at that time. The majority of patients that I see in consultation in the hospital do not show up to that six-week appointment. Um, I have had one, actually. Um, and so they take up clinic time, and, um, it's kind of my little, in some degree, my little test, if you're really committed and you come back to see me in my office, then I'm willing to operate on you,	deservingness, left vs right side, follow-up care, commitment to recovery

		but if you can't make the appointment, and you can't demonstrate some sort of, um, follow up, then, um, you know…	
	1016	S: Um, it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their recovery, and, and help when we have a team approach.	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	discussing addiction, support for patient, patient consent, patient story, commitment to recovery, empathy

	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve,	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID

		the mortality was essentially 100 percent, you're gonna keep relapsing.	
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, post-operation care, paternalism, commitment to recovery, follow-up care, timing of SUD tx
	1006	nterviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	commitment to recovery, data, futility, multiple surgeries, reinfection, deservingness, priorities, relapse
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't	liver vs heart, deservingness, frustration, reinfection, relapse, commitment to recovery

		proven their ability to stay off of the substance that caused the problem in the first place.	
	1006	Interviewee: Yeah, we see them. Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	deservingness, second chance, medical model, reinfection, commitment to recovery, data, futility, relapse
	1006	Interviewer: I think you're answering this question already, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	perception of risk in PWID, time between operations, commitment to recovery, deservingness, reinfection, protocol
	1006	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis than a 55-year-old? Interviewee: Not really, unless they have—the 55-year-old has stopped and started, stopped and started. Interviewer: Does age impact your decision to operate on a prosthetic valve infection? Interviewee: Well if they're really old, yeah, but other than that, no.	age, deservingness, perception of risk in PWID, commitment to recovery
	1006	Interviewer: What if it was five years since she last used drugs? Interviewee: Well you feel if it's a prosthetic valve infection, a little more inclined to give her a second chance	time between operations, commitment to recovery, second chance, deservingness, reinfection

	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail	time between operations, futility, stigma , deservingness, reinfection, commitment to recovery
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	relapse, perception of risk in PWID, commitment to recovery, futility, reinfection, deservingness
	1002	Interviewer: Does your patient's commitment to getting their substance use disorder treated impact your surgical decisions? Respondent: No. Interviewer: So if someone did not want to stop using drugs or get treatment – Respondent: Oh, you mean – okay. Yeah, I think that will change it, kind of. Interviewer: How much do you consider it? Imagine if someone is not interested at all in stopping drug use. Does that make you less likely to perform surgery? Respondent: Yes.	commitment to recovery, paternalism, deservingness
	1002	Interviewer: Is there a certain point where you think the person is committed enough? What makes you feel like someone is committed enough where you would consider it? Respondent: Yeah, if the patient is not willing to stop, then why do we need to do the surgery	commitment to recovery, deservingness, futility
	1002	Interviewer: What if it was five years since the last time she used drugs? [Outside interruption] Can you tell me about the operative risk or reoperation versus the original operation? Respondent: It totally depends on case by	deservingness, commitment to recovery, risk evaluation

		case, but yeah, in a case like that I think that's much, much easier.	
	1002	Interviewer: What is your sense about how you approach these patients in this population compared to your colleagues? Do you think it's similar? Different? Respondent: Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	tx compared to colleagues, second chance, reinfection, relapse, deservingness, commitment to recovery, frustration, futility, perception of risk in PWID
	1007	So does her commitments to treatments for opioid use disorders? Say she has, she goes through drug rehabilitation or detox. Does that impact your decision? Speaker 2: Yeah, It's a positive thing. Speaker 1: Okay. So why does it impact your decision to treat her, your decision to operate on her? Speaker 2: Well, in that case, in a particular Vignette, it doesn't, Speaker 1: It doesn't. Okay. Speaker 2: Because you're just, I mean, a lot of times these are not even that interactive patients	SUD treatment, commitment to recovery, defensive
	1017	Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway.	discussing addiction, changes over time, commitment to recovery, patient consent, collaboration with addiction medicine, protocol, deservingness
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to,	commitment to recovery, deservingness, futility, stigma , contract, accountability, relapse

		you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	
	1017	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Does age impact your decision at all to operate on prosthetic valve infections or the type of valve you use? S: No. It's not age, but rather, um, well, in the sense that, you know, we, all surgeons assess operative risk no matter what, so young people are at lower risk than older people. But, um, you know, 2019, it's about what their, um, where they are, where are they in their addiction.	age, perception of risk in PWID, deservingness, commitment to recovery
	1017	So, what do you think about these three options? A PICC line and go home, a PICC line and stay in the hospital, and a PICC line and go to a nursing facility. S: I think they are… I: Like which is the safest option, which one's best for the patient? S: I think it depends on each, I think it's a individual choice, depends what resources they have available to them, and again where are they in their addiction and, you know, what we are doing to support them. So, in the, you know, uh, without any resources, probably the safest thing to do is to literally keep them in the hospital until their antibiotics are up, second safest thing is a nursing home, and third safest thing is home, but I think that is the most vulnerable that they are, although, you know, we have had these patients score drugs in the hospital, have friends bring them in, so, in some respects, for the patients that are truly, um, in the throes of their addiction, it doesn't matter where you send them. There is no safe place.	PICC line risk, support for patient, commitment to recovery, futility
	1017	If she was 5 years clean, so 5 years since she last used drugs? S: Um, yeah, that would be a little bit different, because they, they have a capacity for abstinence, and, um, if they did it because they, they sought treatment, and they had resources to, um, do that again, I think that would mediate things. If it's because they lost resources, they lost a job, they've had, um, family problems, and things that are	time between operations, deservingness, commitment to recovery, support for patient

		unresolved that will not be resolved afterwards, then we are still back.	
	1013	Does it impact what type of valve you use- mechanical or bioprosthetic? It does to the extent of where they seem to be in their recovery. So, I have certainly have had patients who are in recovery and have been abstinent for a good period of time and they want a mechanical valve and they believe that they can be good about taking coumadin and consistent about taking their coumadin then they get a mechanical valve. If somebody is early on and we are worried about their ability to be compliant with anticoagulation, then we are more inclined to put in a tissue valve. So, I would say broadly speaking we tend to put tissue valves in them for that reason specifically compliance with coumadin.	commitment to recovery, perception of risk in PWID, valve preference
	1013	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge. What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	collaboration with addiction medicine, second chance, commitment to recovery, follow-up care, timing of SUD tx
	1013	Uh, yes it does and in the scenario, that you've described probably less so – it's the first operation and um, they're in cardiogenic shock. If somebody comes back and they are not committed and they are not in shock but they have, there is a suspicion for a vegetation and so on and so forth then it is not uncommon for us to say ok let's see if we can manage this with antibiotics at least and see if you can try to demonstrate and ability to be sober. The problem is if they come back again in shock what do you do? I don't think we turn someone down for surgery just because this is their second episode so there are placed that will have a you get one shot kind of a rule but I don't believe in that, that's not right, you can imagine someone who gets a valve replacement then is sober then relapses which is pretty common, right, and with the relapse	save lives, deservingness, commitment to recovery, second chance, relapse

		they get infected again but they were sober for two years until their mother died or something like that then they fell off the wagon, then it feels like you've got some hope if you can deal with the valve infection then they can get sober again.	
	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness.	frustration, futility, commitment to recovery, liability of medical professionals, priorities, relapse
	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	futility, deservingness, commitment to recovery, time between operations, multiple surgeries, liability of medical professionals

	1013	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	PICC line risk, collaboration with addiction medicine, accountability, commitment to recovery, support for patient, timing of SUD tx
	1013	Finally, if it was 5 years since she last used drugs? Then that is the scenario I talked about earlier where I would be much more, um, feel much more positive about trying to re-operate on her. Does the time periods between episodes of endocarditis change whether you would operate? I suppose it does in that the closer, the shorter that time period the less inclined I would be to re-operate.	time between operations, commitment to recovery, second chance
	1003	However, if someone is critically ill, and time is of the essence, then we will move ahead and do surgery regardless of whether or not I think they're going to be able to be successfully treated from the addiction standpoint. On the other hand, if a patient is not critically sick, and they're having a medical indication for surgery, however if they're not in a program, where I think they're going to be successful in avoiding use of drugs again, I may postpone surgery until they get into a rehab program. So, once we do the surgery, I know they'll be on the road to recovery. But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most	relapse, risk evaluation, timing of SUD tx, commitment to recovery, paternalism, protocol

		importantly, the patient will not do well in the long term.	
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy
	1003	What are some of like, the terms that you would use to discuss her addiction? Respondent: Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake.	commitment to recovery, discussing addiction, patient consent, patient story, follow-up care
	1003	And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and	SES, commitment to recovery, support for patient, patient story, empathy

		hopeful – and get a sense of what their potential is for recovering from the addiction problem.	
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	follow-up care, multidisciplinary group, changes over time, second chance, accountability, screening for ID, commitment to recovery, relapse
	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone. Interviewer: Interesting. Okay. Respondent: A period of six months, I don't know what the rules are hear. Or we don't do	second chance, liver vs heart, save lives, support for patient, paternalism, accountability, commitment to recovery

		liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	
	1003	f it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery. So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	relapse, stigma , paternalism, futility, commitment to recovery, multiple surgeries, deservingness
	1009	Interviewer: When talking to the patient, how does their commitment treatment sort of play into your surgical decisions, if it does? Surgeon: The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on	commitment to recovery, futility, protocol, tx compared to colleagues

		patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	
	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	futility, frustration, deservingness, protocol, tx compared to colleagues, reinfection, commitment to recovery

	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now.	discussing addiction, patient consent, futility, commitment to recovery
	1011	What do you think about drug rehab? I'm not sure what that completely entails but if that means that you know once the patients are beyond their acute phase, they can then go into chronic maintenance phase of whatever detox, addiction medications they're going to be on is what I understand it to be.	rehab v detox, commitment to recovery
	1011	Does the patient's commitment to treatment impact your surgical decisions? This is a hard one to answer. And that's because I think all these patients truly want to commit to treatment at the time they're having, they're facing the dilemma but it's going to be unclear if they are actually going to carry on with their promise. This may sound a little distrusting, I don't think they're actually trying to deceive or lie it's just the situation they're in. They're in a bad situation and they truly feel like they are not going to do drugs anymore once they get the operation. They really want to lead their life and get their act together but once the operation is done then they are back out on the street and they are not feeling as miserable as they were before the operation I think that that becomes a thing of the past and then the temptations of the problem that they are faced with come back again. So, it is really hard to make a judgement as to what is going to happen based on their commitment. The way it does impact it is that somebody who is up front about that they are not going to stop using drugs and they're going to continue to use drugs in that case you have to question the utility of intervening.	commitment to recovery, relapse, perception of risk in PWID, accountability

	1011	f you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant. The reason it is different though is that we still operate on them, you may ask the question well if that is how you feel then why do you still operate on these patients because you know no one would get a liver transplant if they are still drinking alcohol because the resources are different, there is only a finite number of livers and they really are in a position where they can put a hard stop to it and say no we are not going to do this because somebody else can get that liver. In our situation we don't make that an active hard stop for us because we are not limited by the amount of valves that we have or other things we have so we would like to give these patients a chance, we want to give them a chance we want to give them a shot at getting better so sometimes we do accept less than ideal situations.	liver vs heart, multiple surgeries, save lives, commitment to recovery, lack of resources, paternalism
	1011	It becomes trickier because at that point you are not relying on future projections, it's not what, like the conversation you had with the patient the first time around. Going back to your previous question about you know their commitment to quit injecting drugs at this point they have a track record so my first question would be, when Katie comes back is that was, she injecting drugs again since the time of her previous operation and I think that is the big question. Because patients can get endocarditis without injecting drugs, I mean that's not you know one population, so what I would say is that if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse.	protocol, deservingness, perception of risk in PWID, commitment to recovery, reinfection
	1011	Would your approach change if it was 5 years since she last used drugs? Yes.	time between operations, commitment to recovery, deservingness

	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	futility, commitment to recovery, accountability, relapse, contract, deservingness
	1017	I: Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Does age impact your decision at all to operate on prosthetic valve infections or the type of valve you use? S: No. It's not age, but rather, um, well, in the sense that, you know, we, all surgeons assess operative risk no matter what, so young people are at lower risk than older people. But, um, you know, 2019, it's about what their, um, where they are, where are they in their addiction	age, perception of risk in PWID, deservingness, commitment to recovery

	1017	I: So, what do you think about these three options? A PICC line and go home, a PICC line and stay in the hospital, and a PICC line and go to a nursing facility. S: I think they are… I: Like which is the safest option, which one's best for the patient? S: I think it depends on each, I think it's a individual choice, depends what resources they have available to them, and again where are they in their addiction and, you know, what we are doing to support them. So, in the, you know, uh, without any resources, probably the safest thing to do is to literally keep them in the hospital until their antibiotics are up, second safest thing is a nursing home, and third safest thing is home, but I think that is the most vulnerable that they are, although, you know, we have had these patients score drugs in the hospital, have friends bring them in, so, in some respects, for the patients that are truly, um, in the throes of their addiction, it doesn't matter where you send them. There is no safe place.	PICC line risk, futility, commitment to recovery
	1017	I: If she was 5 years clean, so 5 years since she last used drugs? S: Um, yeah, that would be a little bit different, because they, they have a capacity for abstinence, and, um, if they did it because they, they sought treatment, and they had resources to, um, do that again, I think that would mediate things. If it's because they lost resources, they lost a job, they've had, um, family problems, and things that are unresolved that will not be resolved afterwards, then we are still back.	time between operations, multiple surgeries, commitment to recovery, deservingness, support for patient
	1013	Does it impact what type of valve you use- mechanical or bioprosthetic? It does to the extent of where they seem to be in their recovery. So, I have certainly have had patients who are in recovery and have been abstinent for a good period of time and they want a mechanical valve and they believe that they can be good about taking coumadin and consistent about taking their coumadin then they get a mechanical valve. If somebody is early on and we are worried about their ability to be compliant with anticoagulation, then we are more inclined to put in a tissue valve. So, I would say broadly speaking we tend to put tissue valves in them for that reason specifically compliance with coumadin.	perception of risk in PWID, commitment to recovery, valve preference
	1013	So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention	timing of SUD tx, commitment to recovery, follow-up care, collaboration with addiction medicine, second chance

		and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge.	
	1013	Uh, yes it does and in the scenario, that you've described probably less so – it's the first operation and um, they're in cardiogenic shock. If somebody comes back and they are not committed and they are not in shock but they have, there is a suspicion for a vegetation and so on and so forth then it is not uncommon for us to say ok let's see if we can manage this with antibiotics at least and see if you can try to demonstrate and ability to be sober. The problem is if they come back again in shock what do you do? I don't think we turn someone down for surgery just because this is their second episode so there are placed that will have a you get one shot kind of a rule but I don't believe in that, that's not right, you can imagine someone who gets a valve replacement then is sober then relapses which is pretty common, right, and with the relapse they get infected again but they were sober for two years until their mother died or something like that then they fell off the wagon, then it feels like you've got some hope if you can deal with the valve infection then they can get sober again.	save lives, commitment to recovery, deservingness, relapse
	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral	frustration, priorities, futility, relapse, commitment to recovery, liability of medical professionals

		decision making around is this a behavior that they can control and all that kind of messiness	
	1013	So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	priorities, commitment to recovery, PICC line risk, collaboration with addiction medicine, timing of SUD tx, support for patient
	1015	I: How should this patient's opioid use disorder be treated and when? This is going back to Katie. S: Um…I don't think there is a time. I think it needs to be treated throughout the whole hospital stay and post-op. I don't think you say, ok now we've done surgery, now you start treatment. The treatment needs to start the minute they step in the door or become identified as drug users.	timing of SUD tx, pre-operation care, follow-up care, commitment to recovery
	1015	do you think that medications and psychotherapy, um, one works better than the other, or they need to coexist in your experience? S: I think they, I think they, I think, I don't have a lot of knowledge about therapies, but I think that, um, medications are important. Um…I believe that Suboxone is more efficacious than methadone, and I've seen a lot of people on methadone with real, no real plans to cut out, cut down, or quit, or change. Whereas with Suboxone, I believe there is evidence for that being a good treatment for this disease.	SUD treatment, commitment to recovery, lack of knowledge

	1015	I mean there are a number of them, yeah. I: Yeah. What…does it impact your decision to operate if their endocarditis is related to drug use? S: Um…sometimes. It really depends on how hard of a reoperation I think it's going to be. I: Gotcha. S: If I think I that, um, I'm going to cause more harm by reoperating and they continue to use IV drugs, then my decision is going to be, no I'm not going to reoperate. If there is something that is potentially related to past use and can be easily fixed, of course I would offer an operation. If they are active using and reinfected their valve, and they've got something that is easily fixable, then I'd consider doing it.	mechanical problem, seriousness, multiple surgeries, commitment to recovery, reinfection, relapse
	1007	Speaker 1: Okay. Thank you. Speaker 1: So does this patient's commitment to treatments, so treatment for opioid use disorder, does it impact your surgical decisions to operate on her? Speaker 2: Huh? In which way? Speaker 1: So does her commitments to treatments for opioid use disorders? Say she has, she goes through drug rehabilitation or detox. Does that impact your decision? Speaker 2: Yeah, It's a positive thing. Speaker 1: Okay. So why does it impact your decision to treat her, your decision to operate on her? Speaker 2: Well, in that case, in a particular Vignette, it doesn't, Speaker 1: It doesn't. Okay. Speaker 2: Because you're just, I mean, a lot of times these are not even that interactive patients.	commitment to recovery, SUD treatment
	1001	Respondent: Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, risk evaluation, discussing addiction, patient consent, liability of medical professionals, knowledge, contract
	1001	will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the	commitment to recovery, accountability, discussing addiction, paternalism, reinfection, priorities, risk evaluation

		patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of reinfection will be coming, and that would be even wors	
	1001	It's hard to say. To be honest, it's not exactly the same, but I understand. The mechanism is similar. I never use that example, liver transplant and relapse in alcohol use, as an example to my patients, but I think they are similar. To my knowledge, if a patient has no sign of quitting alcohol, the liver transplant will be contraindicated. That's based on my knowledge in my past in my training. But I think even though we have never made it clear in our practice to an endocarditis patient who has no plan of quitting the drug use – but I think eventually there will be an overall consensus, you know?	commitment to recovery, liver vs heart, protocol, disagreements (professional), contract
	1001	Interviewer: How would you feel about working with someone you used to use ten years ago, and then they get a prosthetic valve endocarditis because of a dental procedure? Would that make you feel differently than Katy's situation? Respondent: Yeah, because it's preventable. I think every surgeon's perspective will be different, but we're not just the surgeons [unintelligible 00:28:26] but we do care about their overall health, care, and the outcome in the long run. We wish to be able to identify the real cause of the underlying disease. For example, here if endocarditis is clearly drug related and there is evidence the patient has been relapsing back into drug use, their clinical suspicion for a reinfection will be very high and predicted. So this is a different scenario from endocarditis, from the routine dental procedure, or [undiagnosis] of the etiology. So this is completely two different scenarios. Even though the surgery itself is the same – the operative short-term outcome might be similar, but their prognosis is different. That affects the surgeon's perspective of the surgery itself.	commitment to recovery, perception of risk in PWID, accountability, deservingness, reinfection, follow-up care
	1001	terviewer: What if it was five years when she last used drugs? Would that change your opinion at all? Respondent: From ten years? Interviewer: So instead of it only being one year since she came back with the infection, what if it had been five years since she used drugs?	commitment to recovery, time between operations, perception of risk in PWID

		Respondent: It doesn't matter. All I care back is if the patient has been back to drug use or not.	
	1004	: So, what are some of the first thoughts that you consider when you're asked to evaluate a person who injects drugs for a valve replacement? R: sad. Tough decisions. These people come in sick and don't take care of themselves. I do worry about getting viral infections like Hep C and HIV. There are no professional guidelines.	infection risk to surgeons, stigma , accountability, protocol, lack of resources, deservingness, commitment to recovery
	1004	R: It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	commitment to recovery, deservingness, discussing addiction, priorities, support for patient, risk evaluation
	1004	I: how do you discuss drug use with a patient like this? Like what questions do you ask? What are some of like, the terms that you would use to discuss her addiction? R: Are you willing to stop using? Promise me that you'll stop using, that you'll do rehab. And if they come back, I wouldn't do it. That's pretty much what I say to patients around their addiction.	discussing addiction, commitment to recovery, patient consent, paternalism, contract
	1004	, imagine that you've been operating on Katie, she's done well, she's linked into a methadone maintenance program, and one year later she's back in the hospital; now she has prosthetic valve endocarditis. So, like, have you seen this in people who inject drugs? Like, do you have any specific cases that come to mind? R: Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	priorities, commitment to recovery, deservingness, frustration, futility, perception of risk in PWID, contract
	1004	R: Would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? I: Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting	commitment to recovery, stigma , pregnancy, perception of risk in PWID, frustration, discussing addiction, futility

		cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation	
	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1005	Interviewer: Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Yes. Interviewer: Can you say why or why not? Interviewee: I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	commitment to recovery
	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care

	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	commitment to recovery, deservingness, follow-up care, frustration, futility, post-operation care, reinfection, relapse, risk evaluation
	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	paternalism, deservingness, accountability, commitment to recovery, discussing addiction, frustration, futility, multiple surgeries, second chance, stigma

	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance
	1008	Interviewer: Okay. I have another -- and, so, imagine -- back to Katie, that you've operated on her. She's doing well. She's linked to a methadone maintenance program. And then one year later, she's back in the hospital and she has prosthetic valve endocarditis. So, you've seen this before? Respondent: Yep. Interviewer: Yeah. What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	data, deservingness, follow-up care, protocol, commitment to recovery, relapse, reinfection

	1008	Interviewer: Okay. Cool. And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, accountability, commitment to recovery, futility, post-operation care, priorities
	1008	Interviewer: Yeah. What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	societal issue, insurance, paternalism, commitment to recovery, relapse
	1008	Interviewer: Okay. So, in a case where like if the patient was definitely going to die without the surgery, like 100 percent mortality and had maybe 50 percent operative mortality? Respondent: Wouldn't matter. I would follow the same algorithm that I had before. If they came in shooting up drugs, they're not getting another operation. Interviewer: Okay. Wait. What about for folks who weren't injecting drugs, like -- Respondent: In the past? That had quit? Interviewer: Yeah. Respondent: Yeah, we would operate.	commitment to recovery, deservingness, futility, protocol, risk evaluation

	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues
	1018	Does it impact what type of valve you use- mechanical or bioprosthetic that you would put in? Yes in that in certain say neurologic complications, mycotic aneurysms if present would strongly dissuade me from mechanical valves and anticoagulation but I do think often these patients are best served with bioprostheses, it gives them a period of simpler, less complicated life to see if they can wean themselves from substances. And if they can successfully then later convert to a mechanical	perception of risk in PWID, valve preference, commitment to recovery
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, commitment to recovery, contract, accountability, paternalism, deservingness

	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	commitment to recovery, deservingness, second chance, liability of medical professionals, contract, futility, reinfection, multiple surgeries
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, paternalism, tx compared to broader, stigma
	1018	What if it was 5 years since she last used drugs? Five years and this was a recurrent episode from reuse, yeah, she gets extra points for staying off drugs for 5 years.	time between operations, deservingness, second chance, commitment to recovery
	1012	Does it impact what type of valve you chose? Yes. How so? Because generally they tend to be younger patients and younger patients if they have a valve lesion that's congenital or infectious from some other unfortune, unfortunate happenstance then you would probably advise them on a mechanical heart valve, mechanical heart valves require coumadin, and um, if you have a mechanical heart valve and you don't take your coumadin it's very very dangerous. So, most surgeons, I think do not put mechanical heart valves in people who are known drug users, unless they've been known to, you know, abstain for a long period of time, so you know, and we have all been burned by making exceptions to that rule.	age, perception of risk in PWID, deservingness, commitment to recovery, frustration

	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes.	discussing addiction, commitment to recovery, accountability, frustration, futility, patient consent, contract
	1012	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think it is a reasonable example. Do you think they are similar? Well in the sense that you know have a life-threatening problem, you know, what's different is the people that are uh, well couple things are different- one thing that is different is that in order to transplant a liver someone who's diseased their liver with chronic alcohol use, you have to get that liver from a donor which is a much more scarce resource than a valve which we can just pick off the shelf. So, in that sense I don't think it is a great example. And usually the valve, you know the endocarditis patients, it's more of an immediate life-threatening problem, whereas the liver cirrhotic is more of a chronic disease that they have developed over time. And another difference is the, when, my understanding is when they transplant alcoholic cirrhotics, they usually have demonstrated abstinence for a period of time which is generally, I would think 6 months or longer or else they have some other reason to think that they are absolutely not going to do it again. Um, and we don't have that luxury with endocarditis. They come in, they have a life-threatening problem, we can't wait 6 months to get that valve replaced.	liver vs heart, desired changes, priorities, commitment to recovery, time constraints

	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive
	1012	Finally, if it was 5 years since she last used drugs? Yeah so if it was 5 years since she last used, the suspicion would be that that is not true, but you know people can get valve infections from other routes, dental and other things, so yeah I would be more enthusiastic about operating on her in that last situation but as I said I would probably offer her a second operation no matter what the circumstance was.	time between operations, commitment to recovery, second chance, defensive, stigma
	1018	Does it impact what type of valve you use- mechanical or bioprosthetic that you would put in? Yes in that in certain say neurologic complications, mycotic aneurysms if present would strongly dissuade me from mechanical valves and anticoagulation but I do think often these patients are best served with	valve preference, commitment to recovery, perception of risk in PWID

		bioprostheses, it gives them a period of simpler, less complicated life to see if they can wean themselves from substances. And if they can successfully then later convert to a mechanical	
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, stigma , tx compared to broader
	1018	What if it was 5 years since she last used drugs? Five years and this was a recurrent episode from reuse, yeah, she gets extra points for staying off drugs for 5 years.	commitment to recovery, second chances, time between operations, deservingness

	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1005	Interviewer: Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Yes. Interviewer: Can you say why or why not? Interviewee: I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	commitment to recovery
	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care

	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	futility, commitment to recovery, accountability, relapse, contract, deservingness
	1017	I: Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Does age impact your decision at all to operate on prosthetic valve infections or the type of valve you use? S: No. It's not age, but rather, um, well, in the sense that, you know, we, all surgeons assess operative risk no matter what, so young people are at lower risk than older people. But, um, you know, 2019, it's about what their, um, where they are, where are they in their addiction	age, perception of risk in PWID, deservingness, commitment to recovery

	1017	I: So, what do you think about these three options? A PICC line and go home, a PICC line and stay in the hospital, and a PICC line and go to a nursing facility. S: I think they are… I: Like which is the safest option, which one's best for the patient? S: I think it depends on each, I think it's a individual choice, depends what resources they have available to them, and again where are they in their addiction and, you know, what we are doing to support them. So, in the, you know, uh, without any resources, probably the safest thing to do is to literally keep them in the hospital until their antibiotics are up, second safest thing is a nursing home, and third safest thing is home, but I think that is the most vulnerable that they are, although, you know, we have had these patients score drugs in the hospital, have friends bring them in, so, in some respects, for the patients that are truly, um, in the throes of their addiction, it doesn't matter where you send them. There is no safe place.	PICC line risk, futility, commitment to recovery
	1017	I: If she was 5 years clean, so 5 years since she last used drugs? S: Um, yeah, that would be a little bit different, because they, they have a capacity for abstinence, and, um, if they did it because they, they sought treatment, and they had resources to, um, do that again, I think that would mediate things. If it's because they lost resources, they lost a job, they've had, um, family problems, and things that are unresolved that will not be resolved afterwards, then we are still back.	time between operations, multiple surgeries, commitment to recovery, deservingness, support for patient
	1004	These people come in sick and don't take care of themselves	accountability, commitment to recovery, deservingness
	1004	It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	commitment to recovery, deservingness, desired changes, discussing addiction, priorities
	1004	R: Are you willing to stop using? Promise me that you'll stop using, that you'll do rehab. And if they come back, I wouldn't do it. That's pretty much what I say to patients around their addiction.	commitment to recovery, discussing addiction
	1004	Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	commitment to recovery, frustration, futility, priorities, risk evaluation, deservingness

	1004	Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation.	pregnancy, commitment to recovery, discussing addiction, frustration, futility, stigma
	1016	Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	commitment to recovery, liability of medical professionals, reinfection, risk evaluation, multiple surgeries
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a	risk evaluation, liability of medical professionals, save lives, commitment to recovery, deservingness

		surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	
	1016	Let them prove that they can enter recovery, and then, I think the other piece of the puzzle is we have them come back to our clinic in six weeks for echo follow-up and to plan surgery at that time. The majority of patients that I see in consultation in the hospital do not show up to that six-week appointment. Um, I have had one, actually. Um, and so they take up clinic time, and, um, it's kind of my little, in some degree, my little test, if you're really committed and you come back to see me in my office, then I'm willing to operate on you, but if you can't make the appointment, and you can't demonstrate some sort of, um, follow up, then, um, you know…	follow-up care, commitment to recovery, deservingness
	1016	it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their recovery, and, and help when we have a team approach.	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals

	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	commitment to recovery, discussing addiction, empathy, follow-up care, relapse, perception of risk in PWID, societal issue, second chance, support for patient
	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	discussing addiction, commitment to recovery, follow-up care, frustration, patient story, priorities, risk evaluation, societal issue, SUD treatment

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, commitment to recovery, follow-up care, post-operation care, risk evaluation
	1006	Interviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's	data, deservingness, commitment to recovery, priorities, relapse

		the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail.	time between operations, commitment to recovery, frustration, futility
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives

		gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	
	1012	Does it impact what type of valve you chose? Yes. How so? Because generally they tend to be younger patients and younger patients if they have a valve lesion that's congenital or infectious from some other unfortune, unfortunate happenstance then you would probably advise them on a mechanical heart valve, mechanical heart valves require coumadin, and um, if you have a mechanical heart valve and you don't take your coumadin it's very very dangerous. So, most surgeons, I think do not put mechanical heart valves in people who are known drug users, unless they've been known to, you know, abstain for a long period of time, so you know, and we have all been burned by making exceptions to that rule.	commitment to recovery
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes. Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging.	commitment to recovery, discussing addiction, frustration, accountability, patient consent, contract

	1012	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think it is a reasonable example. Do you think they are similar? Well in the sense that you know have a life-threatening problem, you know, what's different is the people that are uh, well couple things are different- one thing that is different is that in order to transplant a liver someone who's diseased their liver with chronic alcohol use, you have to get that liver from a donor which is a much more scarce resource than a valve which we can just pick off the shelf. So, in that sense I don't think it is a great example. And usually the valve, you know the endocarditis patients, it's more of an immediate life-threatening problem, whereas the liver cirrhotic is more of a chronic disease that they have developed over time. And another difference is the, when, my understanding is when they transplant alcoholic cirrhotics, they usually have demonstrated abstinence for a period of time which is generally, I would think 6 months or longer or else they have some other reason to think that they are absolutely not going to do it again. Um, and we don't have that luxury with endocarditis. They come in, they have a life-threatening problem, we can't wait 6 months to get that valve replaced.	liver vs heart, desired changes, commitment to recovery
	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these	patient story, commitment to recovery, futility, frustration, deservingness

		people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	
	1012	Finally, if it was 5 years since she last used drugs? Yeah so if it was 5 years since she last used, the suspicion would be that that is not true, but you know people can get valve infections from other routes, dental and other things, so yeah I would be more enthusiastic about operating on her in that last situation but as I said I would probably offer her a second operation no matter what the circumstance was.	time between operations, commitment to recovery, defensive, second chance
	1015	I: That's ok. Um…basically, do you think that medications and psychotherapy, um, one works better than the other, or they need to coexist in your experience? S: I think they, I think they, I think, I don't have a lot of knowledge about therapies, but I think that, um, medications are important. Um…I believe that Suboxone is more efficacious than methadone, and I've seen a lot of people on methadone with real, no real plans to cut out, cut down, or quit, or change. Whereas with Suboxone, I believe there is evidence for that being a good treatment for this disease.	lack of knowledge, SUD treatment, commitment to recovery
	1015	I: Yeah. What…does it impact your decision to operate if their endocarditis is related to drug use? S: Um…sometimes. It really depends on how hard of a reoperation I think it's going to be. I: Gotcha. S: If I think I that, um, I'm going to cause more harm by reoperating and they continue to use IV drugs, then my decision is going to be, no I'm not going to reoperate. If there is something that is potentially related to past use and can be easily fixed, of course I would offer an operation. If they are active using and reinfected their valve, and they've got something that is easily fixable, then I'd consider doing it.	reinfection, relapse, commitment to recovery, multiple surgeries

	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	commitment to recovery, deservingness, second chance, frustration, futility, reinfection, relapse, risk evaluation
	1014	S: Uh, so, um, so, hopefully, they're helping us. I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before.	SUD treatment, follow-up care, stigma , commitment to recovery
	1014	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes and no. I mean, the blatant refusal is, it gives me pause. If a patient is saying, "Nope, I won't stop," and if they are in a mental, you know, state, where they're absolutely, you know, saying, "You operate on me and I know I'm going to use again," you know, those are far and few in between. Those are rare, but sometimes you see them. And, and, you, kind of, wonder, what am I doing here? This is where, you know, the support, the hospital support, with psychiatrists and all the disciplines, it becomes a multidisciplinary	commitment to recovery, multidisciplinary group, stigma

		approach, and I've tried to involve other, some of my partners, like, you know, this guy is a recurrent offender, and he intends on, on, so what are we doing? So, that's, that's the epitome of futility in my eyes.	
	1011	Does the patient's commitment to treatment impact your surgical decisions? This is a hard one to answer. And that's because I think all these patients truly want to commit to treatment at the time they're having, they're facing the dilemma but it's going to be unclear if they are actually going to carry on with their promise. This may sound a little distrusting, I don't think they're actually trying to deceive or lie it's just the situation they're in. They're in a bad situation and they truly feel like they are not going to do drugs anymore once they get the operation. They really want to lead their life and get their act together but once the operation is done then they are back out on the street and they are not feeling as miserable as they were before the operation I think that that becomes a thing of the past and then the temptations of the problem that they are faced with come back again. So, it is really hard to make a judgement as to what is going to happen based on their commitment. The way it does impact it is that somebody who is up front about that they are not going to stop using drugs and they're going to continue to use drugs in that case you have to question the utility of intervening.	commitment to recovery

	1011	You operate on Katie and she does well. She is linked into a methadone maintenance program. About 1 year later she is back in the hospital and she has prosthetic valve endocarditis. Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. Any specific cases come to mind? A patient very similar to her in age who had a tricuspid valve replacement and came back with tricuspid valve endocarditis. Tell me your thoughts about management decisions in these cases It becomes trickier because at that point you are not relying on future projections, it's not what, like the conversation you had with the patient the first time around. Going back to your previous question about you know their commitment to quit injecting drugs at this point they have a track record so my first question would be, when Katie comes back is that was, she injecting drugs again since the time of her previous operation and I think that is the big question. Because patients can get endocarditis without injecting drugs, I mean that's not you know one population, so what I would say is that if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse. And you treat her like you would. Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody	patient story, risk evaluation, commitment to recovery, protocol, deservingness

		breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	
	1002	Respondent: Yeah, if the patient is not willing to stop, then why do we need to do the surgery?	commitment to recovery, deservingness
	1002	Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	commitment to recovery, deservingness, frustration, futility, risk evaluation, tx compared to colleagues, disagreements (professional)
	1003	Yeah. Well, they would undergo – we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive	SUD treatment, commitment to recovery, discussing addiction, follow-up care, multidisciplinary group, post-operation care, protocol

	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards.	discussing addiction, SUD treatment, collaboration with addiction medicine, commitment to recovery, empathy, follow-up care, patient consent
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think	accountability, changes over time, collaboration with addiction medicine, commitment to recovery, follow-up care, multidisciplinary group

		we're doing a better job of making sure that happens.	
	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone.	commitment to recovery, liver vs heart, deservingness, second chance
	1003	So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	commitment to recovery, deservingness, futility
	1003	Most patients I've found have gone on and been clean for a x number of months, sometimes years, and then gone back using drugs again. Chances are I'll offer them a second operation. If I get a sense they're going to try once more to fight the disease, and hopefully overcome it. So, it's - I know – I don't have a set answer; it depends on the set of	relapse, commitment to recovery, empathy

		circumstances, but I have to say, more often than that, we will offer them a second operation. Provided it get - I know that they tried in the past, and I think the capacity to try again.	
	1005	Interviewer: Looking back, I guess on similar situations, are there any things that you would change about approaches you've taken to these types of patients before? Interviewee: I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration, patient consent
	1005	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: Yes. Interviewer: If so, what questions did you ask, what are some of the terms you use to discuss addiction? Interviewee: I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation. Interviewer: Have you heard of the term opioid use disorder or used it when talking with a patient? Interviewee: Yes, I've heard of that term, but I haven't used that term with a patient.	discussing addiction, SUD treatment, commitment to recovery, patient consent, priorities, risk evaluation

	1005	Interviewer: Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Yes. Interviewer: Can you say why or why not? Interviewee: I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	commitment to recovery, deservingness, paternalism, accountability, cost
	1005	Interviewee: Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary. Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes.	multiple surgeries, pre-operation care, deservingness, reinfection, relapse, accountability, commitment to recovery, frustration
	1005	Interviewer: What if she injected cocaine, but did not inject heroin? Interviewee: Doesn't matter. Interviewer: What if it was five years since she last used drugs? Interviewee: It makes her not need rehab. Interviewer: All right, how does different types of drug use influence your decision to operate for endocarditis? Interviewee: It doesn't. I think we all tend to be a little bit more liberal with tobacco and marijuana over cocaine, heroin and methamphetamines, but in general it doesn't.	perception of risk in PWID, commitment to recovery
	1014	I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she	commitment to recovery, stigma , SUD treatment, follow-up care

		promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before. I don't have the answers.	
	1014	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes and no. I mean, the blatant refusal is, it gives me pause. If a patient is saying, "Nope, I won't stop," and if they are in a mental, you know, state, where they're absolutely, you know, saying, "You operate on me and I know I'm going to use again," you know, those are far and few in between. Those are rare, but sometimes you see them. And, and, you, kind of, wonder, what am I doing here? This is where, you know, the support, the hospital support, with psychiatrists and all the disciplines, it becomes a multidisciplinary approach, and I've tried to involve other, some of my partners, like, you know, this guy is a recurrent offender, and he intends on, on, so what are we doing? So, that's, that's the epitome of futility in my eyes.	commitment to recovery, stigma , multidisciplinary group
	1009	urgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things.	commitment to recovery, accountability, deservingness, paternalism
	1009	The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would	commitment to recovery, discussing addiction, patient consent, pre-operation care, futility, tx compared to colleagues

		really have to pause and think about whether to offer surgery because again it may be futile.	
	1009	Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	cost, liver vs heart, commitment to recovery, societal issue, lack of resources, insurance
	1001	Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, discussing addiction, knowledge, risk evaluation, rigidity (secondary)
	cont		

	1019	I have never said to a patient that I'm going to do this operation on you but, if you use drugs again, I'm not going to operate on you again. I think that's just about the worst thing that you can say to somebody. I think it's malpractice.	save lives, contract, deservingness
	1019	I have never said to a patient that I'm going to do this operation on you but, if you use drugs again, I'm not going to operate on you again. I think that's just about the worst thing that you can say to somebody. I think it's malpractice.	deservingness, save lives, contract
	1019	I have never said to a patient that I'm going to do this operation on you but, if you use drugs again, I'm not going to operate on you again. I think that's just about the worst thing that you can say to somebody. I think it's malpractice.	deservingness, save lives, contract
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility

	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	commitment to recovery, deservingness, futility, stigma , contract, accountability, relapse

	1017	There is the case of BLANK BLANK. So BLANK BLANK was a 30-year-old heroin user from the streets of BLANK who basically had endocarditis. I find him a very charming guy, so I did one valve replacement. About, oh, I don't know, 6 months later, he comes back and he now has still been using, and he promised me he'd stop. So I reoperated on him and did a homograft root replacement on him. Did great, actually. Six month later, he comes back and he's been using again, and now he's developed a big pseudoaneusrym that is a rupture of, uh, where we reconstructed him, so there's this big aneurysm. And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding. Recovered, and literally six months later I got a call that he had now infected his homograft because he's still using. So, I said, we're not going to do anything. I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point. Um, so that's my, my case that I will never forget about recidivism in drug users.	multiple surgeries, contract, perception of risk in PWID, relapse, priorities, second chance, deservingness, patient consent
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	futility, commitment to recovery, accountability, relapse, contract, deservingness
	1001	Respondent: Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to	commitment to recovery, risk evaluation, discussing addiction, patient consent, liability of medical professionals, knowledge, contract

		understand our perspective. That will facilitate better care down the road.	
	1001	It's hard to say. To be honest, it's not exactly the same, but I understand. The mechanism is similar. I never use that example, liver transplant and relapse in alcohol use, as an example to my patients, but I think they are similar. To my knowledge, if a patient has no sign of quitting alcohol, the liver transplant will be contraindicated. That's based on my knowledge in my past in my training. But I think even though we have never made it clear in our practice to an endocarditis patient who has no plan of quitting the drug use – but I think eventually there will be an overall consensus, you know?	commitment to recovery, liver vs heart, protocol, disagreements (professional), contract
	1004	I: how do you discuss drug use with a patient like this? Like what questions do you ask? What are some of like, the terms that you would use to discuss her addiction? R: Are you willing to stop using? Promise me that you'll stop using, that you'll do rehab. And if they come back, I wouldn't do it. That's pretty much what I say to patients around their addiction.	discussing addiction, commitment to recovery, patient consent, paternalism, contract
	1004	I: How should this patient (Katie's) OUD be treated? R: No idea, if she has the operation, she's agreed to the contract to enter treatment. I don't know anything about medications or psychotherapy.	lack of knowledge, SUD treatment, patient consent, contract
	1004	, imagine that you've been operating on Katie, she's done well, she's linked into a methadone maintenance program, and one year later she's back in the hospital; now she has prosthetic valve endocarditis. So, like, have you seen this in people who inject drugs? Like, do you have any specific cases that come to mind? R: Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	priorities, commitment to recovery, deservingness, frustration, futility, perception of risk in PWID, contract
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask?	discussing addiction, commitment to recovery, contract, accountability, paternalism, deservingness

		Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	commitment to recovery, deservingness, second chance, liability of medical professionals, contract, futility, reinfection, multiple surgeries
	1018	think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of.	data, follow-up care, contract, deservingness, desired changes, valve preference, stigma

	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes.	discussing addiction, commitment to recovery, accountability, frustration, futility, patient consent, contract
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	contract, collaboration with addiction medicine, paternalism, multiple surgeries, tx compared to colleagues, support for patient, frustration
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility

		failure to sterilize the field that's responsible for that.	
	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem

	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	futility, commitment to recovery, accountability, relapse, contract, deservingness
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes. Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging.	commitment to recovery, discussing addiction, frustration, accountability, patient consent, contract
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	tx compared to colleagues, frustration, paternalism, multiple surgeries, contract

	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not the heart, it is one of their problems, it is not their main problem. That's their problem.	patient consent, contract, second chance, empathy, patient story
	1014	When…there's a guy in BLANK, in BLANK, he used to make his patients sign a contract with them, that if you do this once, and if they recur, he would never do it again. And I've found that, kind of, I don't want to say, ludicrous, but, um, I didn't, that is not an idea that I find any affinity for. I mean, a contract, really? Do you think those guys are in a good mental state to able to abide to, you know, words written on a piece of paper? I just don't get it. I don't understand it. They're diseased. Their problem is not their heart. Right now, it is, but overall problem is in their brains.	contract, patient consent
	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not the heart, it is one of their problems, it is not their main problem. That's their problem.	contract, reinfection, second chance, empathy, patient story, patient consent
	1014	When…there's a guy in BLANK, in BLANK, he used to make his patients sign a contract with them, that if you do this once, and if they recur, he would never do it again. And I've found that, kind of, I don't want to say, ludicrous, but, um, I didn't, that is not an idea that I find any affinity for. I mean, a contract, really? Do you think those guys are in a good mental state to able to abide to, you know,	patient consent, contract

		words written on a piece of paper? I just don't get it. I don't understand it. They're diseased. Their problem is not their heart. Right now, it is, but overall problem is in their brains.	
Cost			
	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more people to operations that in other countries, even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	cost, changes over time, tx compared to broader, lack of resources, deservingness
	1019	Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital	cost, age, societal issue, PICC line risk, SES

		beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium,	
	1019	these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	cost, lack of resources, insurance, administration
	1019	You know. Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	PICC line risk, support for patient, risk evaluation, SES, cost, insurance

	1019	Um, do you feel supported in your care of the people who inject Absolutely. …drugs here? Okay, good. Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium, uh, these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	cost, support for surgeons, lack of resources, age, SES, insurance

	1019	Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	cost, insurance, SES, follow-up care, support for patient, PICC line risk
	1008	Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	liver vs heart, cost, deservingness, medical model, relapse, frustration, paternalism, reinfection

	1019	Um, do you feel supported in your care of the people who inject Absolutely. …drugs here? Okay, good. Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium, uh, these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	cost, support for surgeons, lack of resources, age, SES, insurance

	1019	Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	cost, insurance, SES, follow-up care, support for patient, PICC line risk
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, stigma , tx compared to broader
	1007	Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect because it's not, it's not so much a surgical…	support for surgeons, cost, data, societal issue, lack of resources

	1017	Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, administration, cost, perception of risk in PWID
	1017	Hmm, just that I think that, um, there are, um, particularly, uh, non-opioid, um, pain regimens that hospitals need to explore despite the cost. I think that we cannot use the same criteria when you've got such a complicated problem like this.	cost, pain management
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	desired changes, cost, insurance, support for patient, deservingness, SUD treatment

	1009	Interviewer: Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	cost, liver vs heart, lack of knowledge, insurance
	1017	I: Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, perception of risk in PWID, administration, cost

	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	insurance, societal issue, desired changes, cost, SUD treatment
	1001	Given the circumstances now, endocarditis is just pandemic, affecting the financial conditions and socioeconomics. It's difficult. I think that society cannot afford having this patient again and again, multiple times – and whether [unintelligible 00:24:55]. To me, even though we would [choose to save people's lives], there are certain limits to something we can do. But again, that requires a discussion between the healthcare professionals, not just the surgeons. It should be based on the studies or a recommendation from the society and/or the medical society, not just the surgical society.	prevalence of endocarditis, societal issue, multiple surgeries, cost, data, deservingness, save lives
	1001	Respondent: So we're not talking about the surgery at this point? This is medical? Interviewer: The medical management, mm-hmm. So the options are we can give her a PICC line and she can go home, we can give her a PICC line and she can stay in the hospital, or we can give her a PICC line and she can go to a nursing facility? Respondent: I'd prefer the patient stayed in the hospital, if possible, but I just don't think if that would actually happen because of the financial issue. I still believe overall the hospital is the safest place for those patients – being medically managed and closely monitored. I personally don't think a patient with a recent history of active drug use should go home with a PICC line. I think it's prohibited. That's just a perfect setup for drug use again at home.	cost, relapse, PICC line risk, accountability, follow-up care, protocol
	1004	I: What about after the surgery? Would a PICC line and sending a patient home be fine? Yes, that's the best way to get antibiotics. There's no point in keeping them in the hospital, we	post-operation care, collaboration with addiction medicine, relapse, PICC line risk, cost

		can't afford that. Though if they wanted to go to a nursing facility afterwards, I'd have no objection to that. The best option for the patient would be whatever Dustin recommends, in terms of relapse risk.	
	1004	R: DO you think treatment for endocarditis will change in the future? What changes would you want to see? I: No, I don't think that the treatment will change. This disease is one where prevention is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	desired changes, knowledge, changes over time, protocol, cost
	1004	R: If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato.	insurance, cost, societal issue, accountability, tx compared to broader
	1004	And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	futility, deservingness, infection risk to surgeons, stigma , screening for ID, cost
	1005	I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	deservingness, cost
	1005	I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	tx compared to broader, cost, desired changes, frustration

	1008	Do you think that the treatment for endocarditis in the people who inject drugs is going to -- will change in the future? Respondent: I hope so, but I doubt it. Interviewer: Okay. Respondent: I don't see any wonder drug coming around or other therapy. I think it's going to be this way for the next 10 years. Interviewer: And then maybe in the 10 years after that? Who knows? Respondent: Who knows. Interviewer: Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school. Interviewer: So, who like -- I don't know. Who would need to make changes then? Everyone? Respondent: Everybody. Interviewer: Yeah. Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	changes over time, pain management, accountability, cost, deservingness, frustration

	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, paternalism, tx compared to broader, stigma
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	administration, cost, accountability, insurance, support for patient, support for surgeons, SUD treatment, follow-up care, societal issue
	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated	lack of knowledge, SUD treatment, liability of medical professionals, perception of risk in PWID, cost, insurance

		from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, stigma , tx compared to broader
	1005	I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	deservingness, cost
	1005	I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	tx compared to broader, cost, desired changes, frustration

	1017	I: Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, perception of risk in PWID, administration, cost
	1004	No, I don't think that the treatment will change. This disease is one where prevention is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	protocol, changes over time, cost
	1004	If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato. And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	cost, screening for ID, societal issue, deservingness

	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	support for surgeons, administration, cost, accountability, support for patient, insurance, societal issue
	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	lack of knowledge, SUD treatment, cost, accountability, liability of medical professionals

	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more people to operations that in other countries, even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	changes over time, cost, deservingness, tx compared to broader
	1011	What do you think about these options? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Most of the times I think I would favor the PICC line and go to the nursing facility. Some of that is made out of pragmatism, being watchful, we end up canceling cases because we don't have enough ICU beds, or OR beds or hospital beds or whatever that is. You know one way we seem like we just want to do more cases, but we see that as those are real patients who need to be taken care of and if we keep someone in the hospital that doesn't need to be in the hospital then that is blocking someone else's care. And this is not necessarily you know the rationing of care, but it is sometimes just the appropriate use of care. So, I think that keeping them in the hospital for 6 weeks with a PICC line just to give them antibiotics I think is not the most optimal system that we have. And maybe that is where going back to your previous question, maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get	PICC line risk, cost, deservingness, societal issue

		antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the time. It's not like these patients are going back to their families, their grandparents, or an aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own police I think is a little too much to ask of them.	
	1002	Respondent: How would I approach? So, preoperative evaluation – you know, how serious the cardiogenic shock is, actually. You know, if the patient is in severe shock, it just depends on if it's hemodynamic shock, or even more hemodynamic and also metabolic shock, which means if the liver is dead and the kidneys are dead, then why do we need to do the surgery? So that's one thing we need to make sure, the surgical indication about the shock. Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result. Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the	pre-operation care, futility, cost

		surgery? So yeah, those are the first things we come up with.	
	1005	Interviewer: Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Yes. Interviewer: Can you say why or why not? Interviewee: I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	commitment to recovery, deservingness, paternalism, accountability, cost
	1005	nterviewer: Are there any changes that you would like to see with regards for treatment of endocarditis? Interviewee: I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	desired changes, multidisciplinary group, protocol, cost, insurance, tx compared to broader, frustration

	1009	Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	cost, liver vs heart, commitment to recovery, societal issue, lack of resources, insurance
Data			
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1010	How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my	SUD treatment, follow-up care, data, collaboration with addiction medicine, commitment to recovery, deservingness

		understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service.	
	1019	Right, right. You mentioned that they have a higher risk of infection with their mechanical… does it impact the type of valve you use, whether it's mechanical or bioprosthetic? There's no evidence in the literature to support, um, decreased infection, um, using either a bioprosthesis or a mechanical valve. I would say from my perspective, um, that an intravenous drug user, even… even if an intravenous drug user says that they have stopped and will not do it again, there's still, um, some percentage which will begin and begin injecting again and, if they have a mechanical valve with a blood thinner in - that's a problem. So I generally do not put mechanical valves in these patients.	data, relapse, perception of risk in PWID, valve preference
	1019	Right, right. You mentioned that they have a higher risk of infection with their mechanical… does it impact the type of valve you use, whether it's mechanical or bioprosthetic? There's no evidence in the literature to support, um, decreased infection, um, using either a bioprosthesis or a mechanical valve. I would say from my perspective, um, that an intravenous drug user, even… even if an intravenous drug user says that they have stopped and will not do it again, there's still, um, some percentage which will begin and begin injecting again and, if they have a mechanical valve with a blood thinner in - that's a problem. So I generally do not put mechanical valves in these patients.	valve preference, data, perception of risk in PWID, relapse

	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration with addiction medicine, data, relapse, frustration, futility
	1019	Right, right. You mentioned that they have a higher risk of infection with their mechanical… does it impact the type of valve you use, whether it's mechanical or bioprosthetic? There's no evidence in the literature to support, um, decreased infection, um, using either a bioprosthesis or a mechanical valve. I would say from my perspective, um, that an intravenous drug user, even… even if an intravenous drug user says that they have stopped and will not do it again, there's still, um, some percentage which will begin and begin injecting again and, if they have a mechanical valve with a blood thinner in - that's a problem. So I generally do not put mechanical valves in these patients.	valve preference, data, perception of risk in PWID, relapse
	1018	Do people who inject drugs have different operative and post-operative mortality or complications? Hm. That's a great question. My clinical impression is that they do have a higher rate of complications, um compared to another group that got their endocarditis from another means, but I um, but I'm not sure I've seen the data on that.	perception of risk in PWID, data
	1018	Looking back is there anything you would change about your approach for prior patients you have cared for? Only to recognize that homografts used to be a religion in the 80s and I think there is enough data now to show that a good debridement and a typical xenoprosthesis with a dacron	data, changes over time, mechanical problem

		graft still has very good results, excellent results although I think still not quite as good as grafts in the most challenging of infections.	
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, support for patient, stigma , data
	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem

	1011	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? The first things are medical. Thinking about the guidelines if the patient needs an operation, what is the physiological state, by that I mean what are the anatomic findings, what are his echo findings, and just exactly what I would think about any other patient who has a mechanical valve lesion.	protocol, data, priorities
	1006	Interviewer: Are there professional society guidelines? Interviewee: Oh, indications for surgery? Interviewer: Yeah, I think they mean with regards to IV drug users versus non-users. Interviewee: To be honest, I don't know There are guidelines if you're talking just about IV drug abuse or endocarditis indications and endocarditis more broadly. I don't think they draw distinctions in those indications between IV drug abusers and non IV drug abusers.	protocol, training, data, lack of resources
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID

		second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	
	1006	nterviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	commitment to recovery, data, futility, multiple surgeries, reinfection, deservingness, priorities, relapse
	1006	Interviewee: Yeah, we see them. Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	deservingness, second chance, medical model, reinfection, commitment to recovery, data, futility, relapse
	1007	Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since	support for surgeons, cost, data, societal issue, lack of resources

		as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect because it's not, it's not so much a surgical…	
	1017	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	protocol, lack of knowledge, lack of resources, data
	1013	I think that one thing that will be interesting to you in this study, or that would be interesting to be in this, is one area that I have really changed, my thinking has really evolved a lot is in right sided endocarditis. So, 20 years ago if someone had tricuspid valve endocarditis and a great big vegetation and severe tricuspid valve regurgitation and they embolized to their lungs and they had lung abscesses and maybe an empyema I would operate on them. I don't anymore. Because I think that they are better off being treated with antibiotics and even if they need a chest tube for their empyema, treat the infection unless, you can sterilize the vegetation, if you can't sterilize the vegetation then you are kind of stuck, you have to operate. But I am much more reluctant to operate on right sided disease now and I think that, if we can assemble enough information around that I think that could contribute to guidelines – it gets a little bit to your guideline question- that I think would actually be useful. I don't think we will ever have guidelines for these really difficult ethical ones but I can imagine developing an approach where for example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	protocol, multiple surgeries, medical model, data, changes over time, desired changes, left vs right side
	1003	So, a lot of clinical judgment goes into assessing these patients, and I rely on objective data based on the laboratory values; the presence perhaps of some fevers. But also, some of my previous experience managing these patients; I rely on my own personal experiences and knowing what seems to work and what doesn't work.	data, knowledge, risk evaluation, training

	1003	what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	relapse, risk evaluation, data, reinfection, age, follow-up care, post-operation care
	1003	Interviewer: Okay. Are there any guidelines or standards of care used at this hospital when assessing people who inject drugs for valve replacement? Respondent: [Laughter] No. There should be, but there's not. Interviewer: Okay. Interesting. Respondent: Nor do I think there is nationally. At our societies - cardiac surgery – I'm not seeing anything published about when to offer – how to assess a patient with endocarditis who uses drugs. No, I'm not seeing anything in our literature.	protocol, data, training
	1003	There should be, but there's not, because we – there's a lot of things in cardiac surgery that are now – there's task forces and they establish guidelines, that you're supposed to adhere, too for various – when to operate on someone with a valve problem; when to operate on someone with a coronary problem. Aortic problem. Heart failure problem. But I'm not seeing this addressed in our literature – when to operate on someone with endocarditis who uses drugs. I'm not sure there's anything on when to operate on someone with endocarditis, period. I'm not aware of any consensus statements about that. There should be, but there's not.	protocol, data, frustration

	1011	Do people who inject drugs have different operative and post-operative mortality? Um, I don't know the data for that. The general sense is that it is not the operation that is difficult. I think match for match these patients may actually be healthier than some of the other infections that we do. Infections in and of themselves have a higher mortality than non-infectious operations. That means that an aortic root replacement that is done for aortic aneurysm has a much lower mortality than an aortic root replacement that is done for endocarditis. Aortic, prosthetic aortic valve infections, which is done, redo aortic valve replacement which is done because the aortic valve over time deteriorated- had structural deterioration- has a much better outcome than if the valve were to get infected. So the endocarditis part surely makes the outcomes much worse but if you are asking me the question that does endocarditis unrelated to IV drug use is that different from endocarditis related to drug abuse I don't know the answer to that question.	data, perception of risk in PWID, knowledge
	1011	Does it impact what type of valve, for example mechanical or bioprosthetic valve? So, the data, um, there is no separate data on that, but it is a very interesting question that comes up every time. And personally, it does impact decision making.	data, perception of risk in PWID, valve preference
	1011	Now the, you know, the, I don't know what the circumstances are, or what the data shows that uh, what the data shows in terms of incidence of hepatitis C or HIV in patients who use drugs verses patients who don't use drugs but you think that they share some of the same risk factors for transmission, needles, and you know whatever. So, when we see a patient with injection drug abuse, we screen them, but I would be worried about getting hepatitis C in the same way that I would for a drug abuse patient than I would be for someone else who has hepatitis C for an unrelated reason. I think that is something that we ask the staff to be careful about as well because these are sharps that we are going to be handling, we are going to be dealing with bodily fluids, not only operating but perioperatively in the ICUs and floors pre and after the operation.	infection risk to surgeons, data, screening for ID, empathy

	1011	How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	lack of resources, accountability, post-operation care, data, follow-up care, support for patient
	1011	Tell me about the operative risks of reoperation verses the original operation. There is data about that, there is data out there to compare risks of first operation verses redo operation and it is a little bit heterogenous data but I think most of us would feel that there is some extra technical complexity to a redo operation without the endocarditis but you could get nearly equivalent outcomes in the second operation as you were the first operation. In the setting of endocarditis there is clear data to show, multiple papers, that if you have to do an operation for endocarditis mortality goes up for the first operation, so first operation with and without endocarditis and second operation with and without endocarditis every time endocarditis and infection make the mortality go higher.	data, save lives, risk evaluation
	1017	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	data, protocol, lack of knowledge, lack of resources
	1015	I: And are there any professional society guidelines…? S: Um…yes, but, um, they are not based on any evidence.	protocol, data, lack of knowledge

	1001	Given the circumstances now, endocarditis is just pandemic, affecting the financial conditions and socioeconomics. It's difficult. I think that society cannot afford having this patient again and again, multiple times – and whether [unintelligible 00:24:55]. To me, even though we would [choose to save people's lives], there are certain limits to something we can do. But again, that requires a discussion between the healthcare professionals, not just the surgeons. It should be based on the studies or a recommendation from the society and/or the medical society, not just the surgical society.	prevalence of endocarditis, societal issue, multiple surgeries, cost, data, deservingness, save lives
	1001	Interviewer: Do you think that treatment for endocarditis for people who inject drugs will change in the future? Respondent: I don't know. I hope. Interviewer: What kind of changes would you like to see? Respondent: I hope there would be a guidelines. You know, how many times do we do surgery? If they go back to drug use, should we withhold the surgical intervention? Or what would be the process? You know, the medicine is becoming both standardized or individualized. So I think for an endocarditis patient, it should be the future. On one side, we should clearly have guidelines from different perspectives. On the other side, we have to mainly treat an endocarditis patient individually, based on their own needs.	desired changes, protocol, data, changes over time, training
	1005	The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is.	data, pre-operation care, risk evaluation
	1008	Interviewer: Okay. I have another -- and, so, imagine -- back to Katie, that you've operated on her. She's doing well. She's linked to a methadone maintenance program. And then one year later, she's back in the hospital and she has prosthetic valve endocarditis. So, you've seen this before? Respondent: Yep. Interviewer: Yeah. What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean	data, deservingness, follow-up care, protocol, commitment to recovery, relapse, reinfection

		in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	
	1018	Do people who inject drugs have different operative and post-operative mortality or complications? Hm. That's a great question. My clinical impression is that they do have a higher rate of complications, um compared to another group that got their endocarditis from another means, but I um, but I'm not sure I've seen the data on that.	perception of risk in PWID, data
	1018	Looking back is there anything you would change about your approach for prior patients you have cared for? Only to recognize that homografts used to be a religion in the 80s and I think there is enough data now to show that a good debridement and a typical xenoprosthesis with a dacron graft still has very good results, excellent results although I think still not quite as good as grafts in the most challenging of infections.	data, changes over time, mechanical problem
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, data, support for patient, stigma
	1018	think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who	data, follow-up care, contract, deservingness, desired changes, valve preference, stigma

		continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of.	
	1018	Do people who inject drugs have different operative and post-operative mortality or complications? Hm. That's a great question. My clinical impression is that they do have a higher rate of complications, um compared to another group that got their endocarditis from another means, but I um, but I'm not sure I've seen the data on that.	perception of risk in PWID, data
	1018	Looking back is there anything you would change about your approach for prior patients you have cared for? Only to recognize that homografts used to be a religion in the 80s and I think there is enough data now to show that a good debridement and a typical xenoprosthesis with a dacron graft still has very good results, excellent results although I think still not quite as good as grafts in the most challenging of infections.	data, changes over time, mechanical problem
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, support for patient, stigma , data

	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem
	1005	The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is.	data, pre-operation care, risk evaluation
	1017	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	data, protocol, lack of knowledge, lack of resources

	1006	Interviewer: Are there professional society guidelines? Interviewee: Oh, indications for surgery? Interviewer: Yeah, I think they mean with regards to IV drug users versus non-users. Interviewee: To be honest, I don't know There are guidelines if you're talking just about IV drug abuse or endocarditis indications and endocarditis more broadly. I don't think they draw distinctions in those indications between IV drug abusers and non IV drug abusers.	data, lack of resources, protocol
	1006	Interviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	data, deservingness, commitment to recovery, priorities, relapse
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case,	data, changes over time, reinfection, stigma

		because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely. It could happen. Yeah. I: Interesting. How recent was that? S: Five years ago, six years ago. I could send it to you.	
	1014	I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data.	multidisciplinary group, data, discussing addiction
	1011	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? The first things are medical. Thinking about the guidelines if the patient needs an operation, what is the physiological state, by that I mean what are the anatomic findings, what are his echo findings, and just exactly what I would think about any other patient who has a mechanical valve lesion.	protocol, data, priorities
	1011	Does it impact what type of valve, for example mechanical or bioprosthetic valve? So, the data, um, there is no separate data on that, but it is a very interesting question that comes up every time. And personally, it does impact decision making. I do feel that these patients are in a very vulnerable situation, they have a lot of stresses going on in their life, and there is a lot that they have to figure out, especially someone who comes in who was actively using drugs at the time of their intervention, and the idea that they are going to go through this big operation, they are going to clean themselves up right away is sometimes too much to ask of them. It is not uncommon, I think for us to see some relapses before the patient eventually can fully quit. And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little	risk evaluation, data, societal issue, relapse, protocol

		anticoagulation and the valve becomes thrombosed, that's a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure themselves then that has a problem as well. So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	
	1003	Yeah, we – as you probably know, we're involved in a study looking at that - Dr. Wurcel is the lead investigator on that – what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	data, follow-up care, prevalence of endocarditis, post-operation care
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to	data, discussing addiction, follow-up care, multidisciplinary group

		have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely. It could happen. Yeah. I: Interesting. How recent was that? S: Five years ago, six years ago. I could send it to you.	data, changes over time, reinfection, stigma
	1014	I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data.	multidisciplinary group, data, discussing addiction
	1005	Interviewer: What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Interviewee: The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is. Interviewer: Do people who inject drugs have a different operative and postoperative mortality?	risk evaluation, pre-operation care, seriousness, data

		Interviewee: I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely.	data, reinfection, medical model, stigma , changes over time
Defensive			
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem

	1015	Have you had personal experience caring for a patient in a similar situation? S: Yes. I: How did you approach the case? S: Um…like I would any other case. I: Great. S: I didn't do anything differently. I: Ok. Looking back, is there anything different that you would change about your approach? S: No.	perception of risk in PWID, defensive
	1007	And how did you approach this case? Speaker 2: Um, yes and we approach it like, like any other patient. Speaker 1: Okay Speaker 2: Come up with the best plan for, for that patient. Speaker 1: Okay. So if you were to address Katie's issue, how would you approach Katie from the vignette? Speaker 2: Approach it? I mean in which way? I mean we would receive the patient, evaluate the patient. Speaker1: Yeah Speaker 2: Um…If she needed surgery, she was a reasonable candidate, which so far it looks like she has an indication, then we'd do surgery.	protocol, perception of risk in PWID, pre-operation care, defensive
	1007	All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox. Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	rehab v detox, support for patient, collaboration with addiction medicine, defensive

	1007	So does her commitments to treatments for opioid use disorders? Say she has, she goes through drug rehabilitation or detox. Does that impact your decision? Speaker 2: Yeah, It's a positive thing. Speaker 1: Okay. So why does it impact your decision to treat her, your decision to operate on her? Speaker 2: Well, in that case, in a particular Vignette, it doesn't, Speaker 1: It doesn't. Okay. Speaker 2: Because you're just, I mean, a lot of times these are not even that interactive patients	SUD treatment, commitment to recovery, defensive
	1007	Tell me your thoughts about management decisions for these relapse cases. Speaker 2: Well, I mean we manage them the same as any other patient. You um, you know, assessing the risk, the benefit, surgery, support system. Speaker 1: Okay. So does it impact your decision to operate if the endocarditis is related to drug use? Speaker 2: Yeah, everything impacts our decision to operate.	multiple surgeries, risk evaluation, reinfection, defensive
	1007	Um, do you look at the 25 year old with prosthetic valve endocarditis, different from the 55 year old? Speaker 2: Of course. We look at everybody different. Speaker 1: Yeah. So it, it seems like age impacts your decision to operate Speaker 2: Everything impacts. Any question that says that asks us to evaluate. We evaluate it. I look at a 23 year old, different than a 24 year old. Speaker 1: Yeah. Speaker 2: Everything goes into the evaluation.	age, risk evaluation, defensive
	1007	Speaker 1: Um, any specific things that help you choose like housing, insurance, job status and child do this impacts your decision? Speaker 2: Everything impacts	insurance, defensive
	1007	Okay, would your approach change if you learned that Katie presented with prosthetic valve endocarditis and she was pregnant? Speaker 2: Would I what? Speaker 1: Would your approach change if you learned that Katie presented to the… Sparker 2: Of course. Everything impacts	pregnancy, defensive

	1007	And then if she had used drugs, if the last time she used drugs was five years ago, does that also, Speaker 2: Everything affects the decision. Speaker 1: Okay, so does the time period between endocarditis… Speaker 2: I'm not saying… I don't know if… I don't want to rewrite your questions. Speaker 1: Yeah. Speaker 2: We're not saying we would refuse blindly or, or, or, or operate blindly on any of these situations. I'm just saying that everything affects	time between operations, defensive
	1007	Have you ever experienced conflicts within your team or with another staff when it comes to treating patients with injection drug use disorder? Speaker 2: Within our surgical team? Speaker 1: Yeah. Speaker 2: No. Speaker 1: Okay. Speaker 2: With, with the rest of the hospital, I mean, not conflicts, but you know, disagreements, in management style. Speaker 1: So were these disagreements in management style resolved. Were they resolved? Speaker 2: Yeah, it's always resolved.	tx compared to colleagues, disagreements (professional), administration, defensive
	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	deservingness, follow-up care, relapse, futility, frustration, tx compared to colleagues, reinfection, defensive

	1015	Have you had personal experience caring for a patient in a similar situation? S: Yes. I: How did you approach the case? S: Um…like I would any other case. I: Great. S: I didn't do anything differently.	perception of risk in PWID, defensive
	1015	: Does the patient's commitment to treatment impact your surgical decisions at all? S: No. I: Ok. And how come? S: Uh…because there's, uh, there's an identifiable, you know, problem, surgical problem, so that needs to be addressed and whether or not they are planning on quitting, it is not my place to hypothesize about that. It is just something that you would figure out after the fact.	perception of risk in PWID, mechanical problem, defensive
	1015	I: Ok. Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Ok. Does age at all impact your decision to operate on prosthetic valve infections? S: Um, only from a medical standpoint. I: Ok. S: The, you know, obviously the older they get the sicker they are, so yes it does in that respect, but not as a social determinant of whether I should operate. I: What about the different types of valves? Does age determine whether… S: No. I: Ok. So… S: Well, wait, yes it does actually. If, I mean, if you've got native valve endocarditis and you are a young person, you probably want to get a mechanical valve, so age does influence that decision. And likewise, if they are older, you probably want to put a bioprosthetic in.	age, valve preference, defensive
	1015	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I	tx compared to colleagues, deservingness, changes over time, defensive, second chance

		don't necessarily share that opinion in every case, but I do see the rationale in it, so…	
	1012	So, most surgeons, I think do not put mechanical heart valves in people who are known drug users, unless they've been known to, you know, abstain for a long period of time, so you know, and we have all been burned by making exceptions to that rule.	defensive, frustration
	1012	How did you approach that case? I replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	protocol, priorities, support for patient, accountability, defensive
	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive

		safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	
	1012	Finally, if it was 5 years since she last used drugs? Yeah so if it was 5 years since she last used, the suspicion would be that that is not true, but you know people can get valve infections from other routes, dental and other things, so yeah I would be more enthusiastic about operating on her in that last situation but as I said I would probably offer her a second operation no matter what the circumstance was.	time between operations, commitment to recovery, second chance, defensive, stigma
	1012	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Uh. I do a little bit less of it because of, because my practice is different. I don't get as many of the inpatient consults. So, I don't do much of the endocarditis here. My prior job I did a ton of endocarditis. I would say I am a little more aggressive in offering surgery than some. There are some surgeons that give people one chance and that's it, there is a lot that do that, and there are even some that don't give them any chances. Um and I am not making a judgement; my Catholic guilt will usually push me to operate a little bit more than some of the others.	tx compared to colleagues, defensive
	1012	So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them hemodynamically unstable and it's just not safe.	withdrawal management, pain management, collaboration with addiction medicine, multidisciplinary group, disagreements (professional), paternalism, defensive
	1012	Finally, if it was 5 years since she last used drugs? Yeah so if it was 5 years since she last used, the suspicion would be that that is not true,	time between operations, commitment to recovery, defensive, second chance

		but you know people can get valve infections from other routes, dental and other things, so yeah I would be more enthusiastic about operating on her in that last situation but as I said I would probably offer her a second operation no matter what the circumstance was.	
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	1015	Have you had personal experience caring for a patient in a similar situation? S: Yes. I: How did you approach the case? S: Um…like I would any other case. I: Great. S: I didn't do anything differently. I: Ok. Looking back, is there anything different that you would change about your approach? S: No.	perception of risk in PWID, defensive
	1015	I: Does the patient's commitment to treatment impact your surgical decisions at all? S: No. I: Ok. And how come? S: Uh…because there's, uh, there's an identifiable, you know, problem, surgical problem, so that needs to be addressed and whether or not they are planning on quitting, it is not my place to hypothesize about that. It is just something that you would figure out after the fact.	mechanical problem, defensive, perception of risk in PWID

	1015	I: Ok. Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Ok. Does age at all impact your decision to operate on prosthetic valve infections? S: Um, only from a medical standpoint. I: Ok. S: The, you know, obviously the older they get the sicker they are, so yes it does in that respect, but not as a social determinant of whether I should operate. I: What about the different types of valves? Does age determine whether… S: No. I: Ok. So… S: Well, wait, yes it does actually. If, I mean, if you've got native valve endocarditis and you are a young person, you probably want to get a mechanical valve, so age does influence that decision. And likewise, if they are older, you probably want to put a bioprosthetic in	age, valve preference, defensive
	1015	I: Yeah, sorry… What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I don't necessarily share that opinion in every case, but I do see the rationale in it, so…	tx compared to colleagues, changes over time, deservingness, defensive, second chances
Deservingness			

	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, futility, frustration, deservingness, redemption (secondary)
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation

		have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	
	1006	Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	deservingness, protocol, risk evaluation
	1006	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis than a 55-year-old? Interviewee: Not really, unless they have—the 55-year-old has stopped and started, stopped and started. Interviewer: Does age impact your decision to operate on a prosthetic valve infection? Interviewee: Well if they're really old, yeah, but other than that, no.	age, deservingness
	1006	Interviewer: What about if she injected cocaine but did not inject heroin? Interviewee: I'd treat 'em about the same, heroin has more addiction potentially, but it's not the only thing that goes into the equation. Interviewer: What if it was five years since she last used drugs? Interviewee: Well you feel if it's a prosthetic valve infection, a little more inclined to give her a second chance. Interviewer: Okay. How does different types of drug use influence your decision to operate for endocarditis? Interviewee: Define different kinds of drug use, it's all IV? Interviewer: I think they mean IV, different things that can be injected, or even including pills, does that play any role? Interviewee: Well it's the only people that can get endocarditis are the ones that inject. In terms of the different types of drugs, it doesn't	deservingness, risk evaluation

		really play that much of a role. I'm not sure that people really know what they're injecting anyway, just taking your dealer's word for it.	
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation

		problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID
	1010	How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service.	SUD treatment, follow-up care, data, collaboration with addiction medicine, commitment to recovery, deservingness

	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	multiple surgeries, deservingness, lack of resources, commitment to recovery, frustration, futility, reinfection, relapse
	1010	ell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, pain management, collaboration with addiction medicine, accountability, liability of medical professionals, deservingness, follow-up care, protocol, risk evaluation
	1010	I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason	liver vs heart, deservingness, stigma , reinfection, lack of resources, risk evaluation

		to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	
	1010	And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of their endocarditis that its really not indicated to operate on someone like them.	relapse, multiple surgeries, futility, risk evaluation, pre-operation care, deservingness
	1010	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Does age impact your decision to operate? If it is caused by drugs? No	age, deservingness, reinfection
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning	pregnancy, multidisciplinary group, risk evaluation, stigma , frustration, deservingness

		anything. Anything from medications to surgery, anesthesia, anything.	
	1010	And what if when she presented with prosthetic valve endocarditis it was 5 years since she last used drugs? And then she relapsed? Yes. I would see that more favorably because I would think that she has shown that she can stay off drugs. Who am I to say what happened you know if she did it right after going home than if she did it 5 years later? Now what is the magic timeline? I don't know but to me that says that is someone who probably has a predilection to doing this and they fought hard for 5 years and uh, I would see it the same way as someone who had coronary artery disease and quit smoking for 5 years and then they smoked again after 5 years. Its uh, I am not going to pass judgement. So, it would make a difference, 5 years verses a day.	perception of risk in PWID, relapse, commitment to recovery, deservingness, reinfection
	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, tx compared to colleagues, support for patient, support for surgeons, deservingness, administration, frustration
	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more	cost, changes over time, tx compared to broader, lack of resources, deservingness

		people to operations that in other countries, even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	
	1019	we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right And I don't think that's an ethically sound practice.	SUD treatment, deservingness, empathy, medical model
	1019	So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would… I would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh,	pain management, post-operation care, SUD treatment, discussing addiction, follow-up care, deservingness, perception of risk in PWID, paternalism

		problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	
	1019	Does this patient's commitment to treatment impact your surgical decisions? No. Absolutely not. That's not for me to judge.	commitment to recovery, deservingness, stigma
	1019	So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis	liver vs heart, accountability, commitment to recovery, deservingness, futility, stigma

	1019	oint is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going to take care of the organs they're going to get.	liver vs heart, deservingness, second chance, stigma
	1019	Does it… so it does not, does No. …it impact your decision to operate if the endocarditis is related to drug use No. Ok. Again, that's not my job. My job is to take care of patients with heart problems.	deservingness, save lives, priorities
	1019	I have never said to a patient that I'm going to do this operation on you but, if you use drugs again, I'm not going to operate on you again. I think that's just about the worst thing that you can say to somebody. I think it's malpractice.	save lives, contract, deservingness
	1019	However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	deservingness, empathy
	1019	Does this patient's commitment to treatment impact your surgical decisions? No. Absolutely not. That's not for me to judge.	deservingness

	1019	OK. Tell me your thoughts about management decisions regarding these cases. If a patient… Uh, if a patient is a candidate for surgery and the operation is feasible, operate. Okay Period. Okay Point blank. Does it… so it does not, does No. …it impact your decision to operate if the endocarditis is related to drug use No. Ok. Again, that's not my job. My job is to take care of patients with heart problems.	multiple surgeries, second chances, risk evaluation, deservingness, save lives
	1019	I have never said to a patient that I'm going to do this operation on you but, if you use drugs again, I'm not going to operate on you again. I think that's just about the worst thing that you can say to somebody. I think it's malpractice.	deservingness, save lives, contract
	1008	what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	risk evaluation, deservingness, multiple surgeries, post-operation care, relapse, reinfection, commitment to recovery, follow-up care, frustration, futility

	1008	Have you ever discussed the drug use with a patient like this? You know, like what kinds of questions would you ask? Respondent: Oh, every case. Interviewer: Okay. Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	pre-operation care, patient consent, discussing addiction, deservingness, paternalism, accountability
	1008	nterviewer: Okay. Cool. And how knowledgeable do you feel about the available treatments for people who use drugs? You know, like available treatment for opioid use disorder or something? Respondent: I refer to the -- there's the -- that team-- that does this. I refer everybody to them. Interviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance. Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem	SUD treatment, lack of knowledge, commitment to recovery, withdrawal management, pain management, deservingness, collaboration with addiction medicine

	1008	Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	liver vs heart, cost, deservingness, medical model, relapse, frustration, paternalism, reinfection
	1008	What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	priorities, medical model, deservingness, commitment to recovery, reinfection
	1008	like how -- what's the success rate of surgery versus -- or effectiveness rate, I guess, of surgery versus antibiotics? Respondent: For prosthetic valve? Interviewer: Yeah. Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time.	futility, deservingness, priorities, medical model, reinfection
	1008	Okay. And, so, would it impact you, and you've sort of spoken to this. But like, so, if endocarditis related to drug use, that impacts your decision to operate?	perception of risk in PWID, second chance, deservingness, multiple surgeries

		Respondent: The second time around? Absolutely. Yes.	
	1008	Okay. Okay. And then what about like age? So, if a 25-year-old with prosthetic valve endocarditis, would you look at that person differently than someone who's 55 and had prosthetic valve endocarditis? Respondent: Unless they're really elderly, I don't think that would have much impact. Interviewer: Okay. And if they were elderly? Respondent: Well, we're talking about drug addicts or? Interviewer: Yeah, I think so, in this case. Respondent: Age doesn't matter. There aren't too many 80-year-old drug addicts. There's some 50-year-old but they usually die when they're 30, 40	age, stigma , deservingness, futility
	1008	And if it had been five years since she had last used drugs? Respondent: Yeah. I would be more prone to operate.	time between operations, deservingness, commitment to recovery, reinfection
	1008	Okay. So, in a case where like if the patient was definitely going to die without the surgery, like 100 percent mortality and had maybe 50 percent operative mortality? Respondent: Wouldn't matter. I would follow the same algorithm that I had before. If they came in shooting up drugs, they're not getting another operation. Interviewer: Okay. Wait. What about for folks who weren't injecting drugs, like -- Respondent: In the past? That had quit? Interviewer: Yeah. Respondent: Yeah, we would operate.	perception of risk in PWID, deservingness
	1008	Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like	societal issue, deservingness, frustration, accountability

		that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school.	
	1002	Interviewer: Would your approach to your management of Katy change if you learned that she was pregnant when she came in? Respondent: I think so. Interviewer: How so? Respondent: How so? Like, case by case.	pregnancy, deservingness
	1019	However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	deservingness, empathy
	1019	Does this patient's commitment to treatment impact your surgical decisions? No. Absolutely not. That's not for me to judge.	deservingness
	1019	OK. Tell me your thoughts about management decisions regarding these cases. If a patient… Uh, if a patient is a candidate for surgery and the operation is feasible, operate. Okay Period. Okay Point blank. Does it… so it does not, does No. …it impact your decision to operate if the endocarditis is related to drug use No. Ok. Again, that's not my job. My job is to take care of patients with heart problems.	multiple surgeries, second chances, risk evaluation, deservingness, save lives
	1019	I have never said to a patient that I'm going to do this operation on you but, if you use drugs again, I'm not going to operate on you again. I think	deservingness, save lives, contract

		that's just about the worst thing that you can say to somebody. I think it's malpractice.	
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, risk evaluation, societal issue
	1018	What if it was 5 years since she last used drugs? Five years and this was a recurrent episode from reuse, yeah, she gets extra points for staying off drugs for 5 years.	commitment to recovery, second chances, time between operations, deservingness
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness

		getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	
	1016	I: Have you ever discussed drug use with a patient like this? You kind of mentioned that, yeah. You have. If so, what questions do you ask when talking about that? S: I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting substance abuse help. Um, and so I'm very up front with that in addition to the risks. This particular case, I'm not sure you will get to this in the interview, is in the aortic valve position. I think that, um, we look at things a little bit different if it is on the left or the right side of the heart, in terms of when we go to surgery and how aggressive we are. I: Have you ever heard the term opioid use disorder or used it when talking with patients? S: Um, I've seen it documented in the chart, I don't, I've never specifically used that terminology.	discussing addiction, deservingness, risk evaluation, left vs right side
	1016	Some people make comparisons between valve replacements in the setting of infective endocarditis and a liver transplant in the setting of alcoholism. What do you think of these examples? S: Um, they're both some degree self-inflicted. Um, I don't think the example holds up well, because you could argue that anybody that doesn't exercise or doesn't eat right that develops coronary disease, um, because of their lifestyle and diet is also self-inflicted, so, I think that, um, a disease is a disease, and as doctors it is our obligation to treat the patients. I: Great, ok, so going back to Katie. You operate on Katie, and she does well. She's linked into a methadone maintenance program. About one year later, she is back in the hospital and she has prosthetic valve	liver vs heart, deservingness, save lives

		endocarditis. We kind of talked about this before. Have you seen prosthetic valve endocarditis in people who inject drugs? S: Yes.	
	1016	I: Ok. Does anything specific help you choose, like the patient's housing, insurance, job status, child care? S: Um, do you mean in terms of leaving with a PICC line or… I: Yeah, like if whether they stay in the hospital, whether they go home, whether they go to a long-term care facility? S: Truthfully, um, I would say, no. Um, and the reason being is, if you're sick, I'm going to give you the care that you need to get through your illness. I understand there's a lot of social factors that get involved, but to me, these are very high risk patients, um, and there's a chance for, again, a lot of misuse of PICC lines, um, and I think that, um, you know, as much as you empathize with the needs for child care and all these other things, um, I feel like I still have to deliver the appropriate level of medical care.	SES, deservingness, PICC line risk
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	save lives, commitment to recovery, risk evaluation, deservingness, liability of medical professionals

	1016	Um, I think, too, the approach varies a little bit depending on what side of the heart, um, the lesion is on. So, um, if you have, uh, a lesion on the left side, we tend to be, and I tend to be a lot more aggressive, um, I'll tend to do more of a watch-and-wait on the right side of the heart. Um, in other words, let the patients get antibiotics, uh, because they, they've got bad tricuspid valve regurgitation, to some degree they can survive with that for a while. Let them prove that they can enter recovery, and then, I think the other piece of the puzzle is we have them come back to our clinic in six weeks for echo follow-up and to plan surgery at that time. The majority of patients that I see in consultation in the hospital do not show up to that six-week appointment. Um, I have had one, actually. Um, and so they take up clinic time, and, um, it's kind of my little, in some degree, my little test, if you're really committed and you come back to see me in my office, then I'm willing to operate on you, but if you can't make the appointment, and you can't demonstrate some sort of, um, follow up, then, um, you know…	deservingness, left vs right side, follow-up care, commitment to recovery
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID

		they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	
	1006	nterviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	commitment to recovery, data, futility, multiple surgeries, reinfection, deservingness, priorities, relapse
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	liver vs heart, deservingness, frustration, reinfection, relapse, commitment to recovery
	1006	Interviewee: Yeah, we see them. Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it.	deservingness, second chance, medical model, reinfection, commitment to recovery, data, futility, relapse

		If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	
	1006	Interviewer: I think you're answering this question already, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	perception of risk in PWID, time between operations, commitment to recovery, deservingness, reinfection, protocol
	1006	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis than a 55-year-old? Interviewee: Not really, unless they have—the 55-year-old has stopped and started, stopped and started. Interviewer: Does age impact your decision to operate on a prosthetic valve infection? Interviewee: Well if they're really old, yeah, but other than that, no.	age, deservingness, perception of risk in PWID, commitment to recovery
	1006	Interviewer: What about if she injected cocaine but did not inject heroin? Interviewee: I'd treat 'em about the same, heroin has more addiction potentially, but it's not the only thing that goes into the equation	risk evaluation, deservingness
	1006	Interviewer: What if it was five years since she last used drugs? Interviewee: Well you feel if it's a prosthetic valve infection, a little more inclined to give her a second chance	time between operations, commitment to recovery, second chance, deservingness, reinfection
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail	time between operations, futility, stigma , deservingness, reinfection, commitment to recovery

	1006	Interviewer: Tell me about the operative risks of reoperation versus that original operation? Interviewee: Well, that's a secondary, sternotomy, you have to cut out the infected prosthetic valve, removing all of the prosthetic valve material is a challenge and it could retain infection. It's a much higher risk procedure, or is a higher risk procedure, I shouldn't say much, that's quantitative.	perception of risk in PWID, multiple surgeries, deservingness, futility
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	relapse, perception of risk in PWID, commitment to recovery, futility, reinfection, deservingness
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle	tx compared to broader, tx compared to colleagues, frustration, deservingness, empathy, societal issue
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by—	tx compared to colleagues, stigma , perception of risk in PWID, disagreements (professional), collaboration with addiction medicine, deservingness, multidisciplinary group

		Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it	
	1002	Interviewer: Does your patient's commitment to getting their substance use disorder treated impact your surgical decisions? Respondent: No. Interviewer: So if someone did not want to stop using drugs or get treatment – Respondent: Oh, you mean – okay. Yeah, I think that will change it, kind of. Interviewer: How much do you consider it? Imagine if someone is not interested at all in stopping drug use. Does that make you less likely to perform surgery? Respondent: Yes.	commitment to recovery, paternalism, deservingness
	1002	Interviewer: Is there a certain point where you think the person is committed enough? What makes you feel like someone is committed enough where you would consider it? Respondent: Yeah, if the patient is not willing to stop, then why do we need to do the surgery	commitment to recovery, deservingness, futility
	1002	so you mean she is still doing the drug use? Interviewer: Yeah, and now she's come back with prosthetic valve endocarditis. Respondent: Yeah, what's the cause of that endocarditis? That's the important question. Interviewer: Would it impact your decision if it was because of drug use? Respondent: I think so. Interviewer: How so? Respondent: How so? Well, it depends. I think it depends on the [overlapping noise] scenario.	deservingness, multiple surgeries, relapse, perception of risk in PWID, reinfection

	1002	All right, and do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old with prosthetic valve endocarditis? Respondent: It depends on the patient. You know, the 55 and 22-year-old – it depends on how the patient is like for 55. So it's case by case. Interviewer: Does age usually impact your decision on deciding if you're going to operate on a prosthetic valve? Respondent: I think so.	age, reinfection, deservingness
	1002	Would your approach to your management of Katy change if you learned that she was pregnant when she came in? Respondent: I think so. Interviewer: How so? Respondent: How so? Like, case by case.	pregnancy, deservingness
	1002	Interviewer: What if it was five years since the last time she used drugs? [Outside interruption] Can you tell me about the operative risk or reoperation versus the original operation? Respondent: It totally depends on case by case, but yeah, in a case like that I think that's much, much easier.	deservingness, commitment to recovery, risk evaluation
	1002	If a patient has 100-percent mortality without surgery but have a 50-percent mortality with operation, is it worth taking the patient to the OR? So if you know they will not survive without the surgery – Respondent: Yeah, it totally depends on the patient, you know? The age or whatever. Yeah, if the patient is 80 years old or something, then why do I need to take the patient?	age, futility, deservingness
	1002	Interviewer: What is your sense about how you approach these patients in this population compared to your colleagues? Do you think it's similar? Different? Respondent: Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	tx compared to colleagues, second chance, reinfection, relapse, deservingness, commitment to recovery, frustration, futility, perception of risk in PWID

	1017	Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway.	discussing addiction, changes over time, commitment to recovery, patient consent, collaboration with addiction medicine, protocol, deservingness
	1017	I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us	deservingness, stigma , paternalism, perception of risk in PWID, futility, frustration, liability of medical professionals
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	commitment to recovery, deservingness, futility, stigma , contract, accountability, relapse
	1017	There is the case of BLANK BLANK. So BLANK BLANK was a 30-year-old heroin user from the streets of BLANK who basically had endocarditis. I find him a very charming guy, so I did one valve replacement. About, oh, I don't know, 6 months later, he comes back and he now has still been using, and he promised me he'd stop. So I reoperated on him and did a homograft root replacement on him. Did great, actually. Six month later, he comes back and he's been using again, and now he's developed a big pseudoaneusrym that is a rupture of, uh, where we reconstructed him, so there's this big aneurysm. And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to	multiple surgeries, contract, perception of risk in PWID, relapse, priorities, second chance, deservingness, patient consent

		death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding. Recovered, and literally six months later I got a call that he had now infected his homograft because he's still using. So, I said, we're not going to do anything. I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point. Um, so that's my, my case that I will never forget about recidivism in drug users.	
	1017	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Does age impact your decision at all to operate on prosthetic valve infections or the type of valve you use? S: No. It's not age, but rather, um, well, in the sense that, you know, we, all surgeons assess operative risk no matter what, so young people are at lower risk than older people. But, um, you know, 2019, it's about what their, um, where they are, where are they in their addiction.	age, perception of risk in PWID, deservingness, commitment to recovery
	1017	If she was 5 years clean, so 5 years since she last used drugs? S: Um, yeah, that would be a little bit different, because they, they have a capacity for abstinence, and, um, if they did it because they, they sought treatment, and they had resources to, um, do that again, I think that would mediate things. If it's because they lost resources, they lost a job, they've had, um, family problems, and things that are unresolved that will not be resolved afterwards, then we are still back.	time between operations, deservingness, commitment to recovery, support for patient
	1013	Uh, yes it does and in the scenario, that you've described probably less so – it's the first operation and um, they're in cardiogenic shock. If somebody comes back and they are not committed and they are not in shock but they have, there is a suspicion for a vegetation and so on and so forth then it is not uncommon for us to say ok let's see if we can manage this with antibiotics at least and see if you can try to demonstrate and ability to be sober. The problem is if they come back again in shock what do you do? I don't think we turn someone down for surgery just because this is their second episode so there are placed that will have a you get one shot kind of a rule but I don't believe in that, that's not right, you can imagine someone who gets a valve	save lives, deservingness, commitment to recovery, second chance, relapse

		replacement then is sober then relapses which is pretty common, right, and with the relapse they get infected again but they were sober for two years until their mother died or something like that then they fell off the wagon, then it feels like you've got some hope if you can deal with the valve infection then they can get sober again.	
	1013	ome people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I don't think it is a very good parallel. I think, for a bunch of reasons, one is actually maybe the opposite of what one might be thinking. For liver transplant, you are thinking about a scarce resource so I actually think it is harder to defend using a scarce resource in a situation where someone may or may not have recovered from their alcoholism. If they are still using alcohol then I think it is hard to defend doing a liver transplant when it's a scarce resource but we have plenty of valves on the shelf, that's not the issue. So, I don't think it is a great parallel. Now if people want to say its related to, that the parallel has to do with behaviors then I would say a lot of diseases that we treat are related to our behaviors whether its obesity, diabetes which leads to coronary artery disease which we treat all the time, or smoking which leads to coronary artery disease which we treat all of the time I mean a lot of conditions that adults get there are behavioral factors that contribute, so I don't think that's a legitimate criticism.	liver vs heart, deservingness, empathy, societal issue, support for patient
	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	futility, deservingness, commitment to recovery, time between operations, multiple surgeries, liability of medical professionals

	1013	If the patient had a 100% mortality without the surgery and a 50% operative mortality is it worth taking the patient to the OR? So, that's the way it usually gets presented to you by the medical student on the medicine service and I don't think about it that way. The way I think about it is the question of do I think that an operation is in the patient's best interest or not. So, lets imagine that the patient has, is an IV drug user, they've got prosthetic endocarditis, they've continually been using intravenous drugs, even in the hospital, and we see that, too right? Um, and then you presented that person to me and you say ok they have prosthetic valve endocarditis, its staph endocarditis, they've got an annular abscess they've got a mortality rate of 100% if you don't operate and they have been using drugs while they have been in the hospital, I don't think an operation is in their best interest. Could we potentially get then through the operation from a technical standpoint, yes, but do I think that we have a likelihood of restoring them to health, I would say no because their underlying condition is so severe. So, I think it is very seldom as simple a question as 100% without and 50% with. Have I adequately pivoted? And avoided answering that question? That's the way I think about it.	perception of risk in PWID, liability of medical professionals, futility, deservingness
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	desired changes, cost, insurance, support for patient, deservingness, SUD treatment
	1003	nterviewer: You know, what are your thoughts on management decisions in those cases? Respondent: Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I	accountability, liability of medical professionals, deservingness, relapse, follow-up care, post-operation care

		think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously.	
	1003	f it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery. So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	relapse, stigma , paternalism, futility, commitment to recovery, multiple surgeries, deservingness
	1003	Okay. Totally. Or – I think you said this. I think you've spoken to this, but like if it had been five years since she had last used drugs, and she showed up with endocarditis - Respondent: And she's using drugs again? If she - Interviewer: No, I think in this example, we're assuming that she's like on methadone, and stable on it. Respondent: Well, she needs an op – if she needs an operation, we'll certainly do it.	time between operations, deservingness, risk evaluation

	1003	Interviewer: What is your sense of how like your approach to treating patients who inject drugs with infective endocarditis, compared to like, other people, other surgeons here at Tufts, or other surgeons around the country? Respondent: Me personally? Interviewer: Yeah. Respondent: I think I'm more aggressive. Interviewer: Okay. Respondent: I'm more willing to do it. The first, time, second time, sometimes third time. That's just - my overall philosophy is different than my colleagues.	tx compared to colleagues, tx compared to broader, deservingness
	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it.	futility, frustration, deservingness, protocol, tx compared to colleagues, reinfection, commitment to recovery

		I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	
	1009	Interviewer: I think you've spoken about it this. But if she had been injecting cocaine but not heroin. Surgeon: Doesn't matter what they're injecting. Interviewer: And then in this case if it had been like five years since she had last used drugs, and she got it, again, from a dental procedure? You have talked about that. Surgeon: Yes.	deservingness, risk evaluation
	1009	If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	protocol, deservingness, futility, reinfection, relapse, risk evaluation

	1009	Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	tx compared to colleagues, deservingness, collaboration with addiction medicine, multidisciplinary group, lack of resources, frustration, accountability, desired changes, follow-up care

		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1011	And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little anticoagulation and the valve becomes thrombosed, that's a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure themselves then that has a problem as well. So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	risk evaluation, multiple surgeries, medical model, protocol, deservingness, paternalism, valve preference

	1011	o, it is really hard to make a judgement as to what is going to happen based on their commitment. The way it does impact it is that somebody who is up front about that they are not going to stop using drugs and they're going to continue to use drugs in that case you have to question the utility of intervening.	deservingness, futility
	1011	It becomes trickier because at that point you are not relying on future projections, it's not what, like the conversation you had with the patient the first time around. Going back to your previous question about you know their commitment to quit injecting drugs at this point they have a track record so my first question would be, when Katie comes back is that was, she injecting drugs again since the time of her previous operation and I think that is the big question. Because patients can get endocarditis without injecting drugs, I mean that's not you know one population, so what I would say is that if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse.	protocol, deservingness, perception of risk in PWID, commitment to recovery, reinfection
	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	deservingness, follow-up care, relapse, futility, frustration, tx compared to colleagues, reinfection, defensive
	1011	Would your approach change if it was 5 years since she last used drugs? Yes.	time between operations, commitment to recovery, deservingness

	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	futility, commitment to recovery, accountability, relapse, contract, deservingness
	1017	I: Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Does age impact your decision at all to operate on prosthetic valve infections or the type of valve you use? S: No. It's not age, but rather, um, well, in the sense that, you know, we, all surgeons assess operative risk no matter what, so young people are at lower risk than older people. But, um, you know, 2019, it's about what their, um, where they are, where are they in their addiction	age, perception of risk in PWID, deservingness, commitment to recovery

	1017	I: If she was 5 years clean, so 5 years since she last used drugs? S: Um, yeah, that would be a little bit different, because they, they have a capacity for abstinence, and, um, if they did it because they, they sought treatment, and they had resources to, um, do that again, I think that would mediate things. If it's because they lost resources, they lost a job, they've had, um, family problems, and things that are unresolved that will not be resolved afterwards, then we are still back.	time between operations, multiple surgeries, commitment to recovery, deservingness, support for patient
	1013	Uh, yes it does and in the scenario, that you've described probably less so – it's the first operation and um, they're in cardiogenic shock. If somebody comes back and they are not committed and they are not in shock but they have, there is a suspicion for a vegetation and so on and so forth then it is not uncommon for us to say ok let's see if we can manage this with antibiotics at least and see if you can try to demonstrate and ability to be sober. The problem is if they come back again in shock what do you do? I don't think we turn someone down for surgery just because this is their second episode so there are placed that will have a you get one shot kind of a rule but I don't believe in that, that's not right, you can imagine someone who gets a valve replacement then is sober then relapses which is pretty common, right, and with the relapse they get infected again but they were sober for two years until their mother died or something like that then they fell off the wagon, then it feels like you've got some hope if you can deal with the valve infection then they can get sober again.	save lives, commitment to recovery, deservingness, relapse
	1013	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I don't think it is a very good parallel. I think, for a bunch of reasons, one is actually maybe the opposite of what one might be thinking. For liver transplant, you are thinking about a scarce resource so I actually think it is harder to defend using a scarce resource in a situation where someone may or may not have recovered from their alcoholism. If they are still using alcohol then I think it is hard to defend doing a liver transplant when it's a scarce resource but we have plenty of valves on the shelf, that's not the issue. So, I don't think it is a great parallel. Now if people want to say its related to, that the parallel has to do with behaviors then I would say a lot of	liver vs heart, support for patient, societal issue, deservingness, empathy

		diseases that we treat are related to our behaviors whether its obesity, diabetes which leads to coronary artery disease which we treat all the time, or smoking which leads to coronary artery disease which we treat all of the time I mean a lot of conditions that adults get there are behavioral factors that contribute, so I don't think that's a legitimate criticism.	
	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	deservingness, reinfection, multiple surgeries, time between operations, futility, liability of medical professionals
	1013	So, that's the way it usually gets presented to you by the medical student on the medicine service and I don't think about it that way. The way I think about it is the question of do I think that an operation is in the patient's best interest or not. So, lets imagine that the patient has, is an IV drug user, they've got prosthetic endocarditis, they've continually been using intravenous drugs, even in the hospital, and we see that, too right? Um, and then you presented that person to me and you say ok they have prosthetic valve endocarditis, its staph endocarditis, they've got an annular abscess they've got a mortality rate of 100% if you don't operate and they have been using drugs while they have been in the hospital, I don't think an operation is in their best interest. Could we potentially get then through the operation from a technical standpoint, yes, but do I think that we have a likelihood of restoring them to health, I would say no because their underlying condition is so severe. So, I think it is very seldom as simple a question as 100% without and 50% with. Have I adequately pivoted? And avoided answering that question? That's the way I think about it.	deservingness, liability of medical professionals, futility, risk evaluation

	1015	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I don't necessarily share that opinion in every case, but I do see the rationale in it, so…	tx compared to colleagues, deservingness, changes over time, defensive, second chance
	1015	Ok. How do you think, um, your approach compares with other surgeons in the country or other countries in the world? S: I don't know about other countries, but I think that in this country, most groups have the same approach, recurrent active IV drug users typically do not get offered recurrent surg	tx compared to broader, deservingness
	1007	Speaker 1: All right, thank you. Now I'm going to introduce a clinical vignette and then you would answer questions subsequently. Katie's a thirty four year old woman who uses heroin by injection drug use. She has staphylococcus Aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is there is concern for an aortic roots abscess. So have you had a personal experience caring for patients with a similar situation? Speaker 2: Yes. Speaker 1: And how did you approach this case? Speaker 2: Um, yes and we approach it like, like any other patient. Speaker 1: Okay Speaker 2: Come up with the best plan for, for that patient. Speaker 1: Okay. So if you were to address Katie's issue, how would you approach Katie from the vignette? Speaker 2: Approach it? I mean in which way? I mean we would receive the patient, evaluate the patient. Speaker1: Yeah Speaker 2: Um…If she needed surgery, she was a reasonable candidate, which so far it looks like she has an indication, then we'd do surgery.	deservingness, protocol, risk evaluation

	1001	Interviewer: All right, and what do you think about the term 'drug rehab?' Respondent: I don't know the detail. I heard about the name. To me it is very difficult. I think theoretically there will be successful stories, but I see it clinically it happened a lot. People tended to relapse back into the drug use [in getting the effects again and again]. I think it's hard for people, and I think they all deserve to be placed in drug rehab, if possible, to have kind of their program that we help them get over the drug addiction, if possible. I personally think it should be mandatory for them to join this program, but I don't think it's going to be the case – but I would recommend that every patient who has been on drugs to be evaluated by the specialist. If they request those patients to go to rehab, I would support it.	SUD treatment, deservingness, relapse, follow-up care, multidisciplinary group
	1001	Interviewer: For Katy, do you think her opiate use disorder should be treated? Respondent: I believe so. I think drug use is not just a social issue. It is a disease, you know? I don't know if there is currently a definition for that, but that's just my personal opinion. I think they should be fairly treated, offered all the options, and carefully monitored with follow-up. It's a complex medical issue, not just a social issue.	SUD treatment, societal issue, empathy, deservingness, support for patient, follow-up care
	1001	Given the circumstances now, endocarditis is just pandemic, affecting the financial conditions and socioeconomics. It's difficult. I think that society cannot afford having this patient again and again, multiple times – and whether [unintelligible 00:24:55]. To me, even though we would [choose to save people's lives], there are certain limits to something we can do. But again, that requires a discussion between the healthcare professionals, not just the surgeons. It should be based on the studies or a recommendation from the society and/or the medical society, not just the surgical society.	prevalence of endocarditis, societal issue, multiple surgeries, cost, data, deservingness, save lives
	1001	I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	multiple surgeries, patient consent, deservingness, relapse, multidisciplinary group, reinfection, follow-up care

	1001	Interviewer: How would you feel about working with someone you used to use ten years ago, and then they get a prosthetic valve endocarditis because of a dental procedure? Would that make you feel differently than Katy's situation? Respondent: Yeah, because it's preventable. I think every surgeon's perspective will be different, but we're not just the surgeons [unintelligible 00:28:26] but we do care about their overall health, care, and the outcome in the long run. We wish to be able to identify the real cause of the underlying disease. For example, here if endocarditis is clearly drug related and there is evidence the patient has been relapsing back into drug use, their clinical suspicion for a reinfection will be very high and predicted. So this is a different scenario from endocarditis, from the routine dental procedure, or [undiagnosis] of the etiology. So this is completely two different scenarios. Even though the surgery itself is the same – the operative short-term outcome might be similar, but their prognosis is different. That affects the surgeon's perspective of the surgery itself.	commitment to recovery, perception of risk in PWID, accountability, deservingness, reinfection, follow-up care
	1004	: So, what are some of the first thoughts that you consider when you're asked to evaluate a person who injects drugs for a valve replacement? R: sad. Tough decisions. These people come in sick and don't take care of themselves. I do worry about getting viral infections like Hep C and HIV. There are no professional guidelines.	infection risk to surgeons, stigma , accountability, protocol, lack of resources, deservingness, commitment to recovery
	1004	R: It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	commitment to recovery, deservingness, discussing addiction, priorities, support for patient, risk evaluation
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	stigma , discussing addiction, liver vs heart, deservingness, frustration, futility
	1004	, imagine that you've been operating on Katie, she's done well, she's linked into a methadone maintenance program, and one year later she's back in the hospital; now she has prosthetic valve endocarditis. So, like, have you seen this in people who inject drugs? Like,	priorities, commitment to recovery, deservingness, frustration, futility, perception of risk in PWID, contract

		do you have any specific cases that come to mind? R: Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	
	1004	And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	futility, deservingness, infection risk to surgeons, stigma , screening for ID, cost
	1005	It doesn't necessarily what valve is placed when we think about our general population here, but I do think that we tend to place more tissue valves in younger patients if they use IV drugs.	age, deservingness
	1005	I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	deservingness, cost
	1005	I guess I've never thought about it. I think that the liver transplant group probably has a much more stringent criteria for transplanting alcohol users than we have for operating on drug users. It certainly maybe in the future that we need to become more strict with these patients. It's not uncommon for us to get called to do a third tricuspid on a patient that keeps reusing or is actively reusing. I typically tell people one operation and that's it. If we put these people in the same population as liver transplant patients we would probably be doing less valves on endocarditis patients because their criteria are more stringent.	liver vs heart, deservingness, second chance
	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care

	1005	Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: That patient would not be an active drug user and would be treated like any non drug user.	deservingness, risk evaluation, stigma
	1005	We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	risk evaluation, deservingness, futility, stigma
	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	commitment to recovery, deservingness, follow-up care, frustration, futility, post-operation care, reinfection, relapse, risk evaluation

	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	paternalism, deservingness, accountability, commitment to recovery, discussing addiction, frustration, futility, multiple surgeries, second chance, stigma
	1008	nterviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance.	SUD treatment, paternalism, deservingness
	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance

	1008	Interviewer: Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	liver vs heart, deservingness, futility, frustration, relapse, SUD treatment
	1008	Interviewer: Okay. I have another -- and, so, imagine -- back to Katie, that you've operated on her. She's doing well. She's linked to a methadone maintenance program. And then one year later, she's back in the hospital and she has prosthetic valve endocarditis. So, you've seen this before? Respondent: Yep. Interviewer: Yeah. What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	data, deservingness, follow-up care, protocol, commitment to recovery, relapse, reinfection

	1008	Interviewer: What is -- I don't have any medical training. So, like how -- what's the success rate of surgery versus -- or effectiveness rate, I guess, of surgery versus antibiotics? Respondent: For prosthetic valve? Interviewer: Yeah. Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time. Interviewer: Okay. And, so, would it impact you, and you've sort of spoken to this. But like, so, if endocarditis related to drug use, that impacts your decision to operate? Respondent: The second time around? Absolutely. Yes.	risk evaluation, deservingness
	1008	nterviewer: So, what if in like a case where someone who used to use drugs, you know, 10 years ago, got prosthetic valve endocarditis after a dental procedure or something? Respondent: We would treat them with antibiotics. Interviewer: Okay. Respondent: And if that -- if we can't cure them with that. Late endocarditis, about 50 percent of the time, you can treat just with antibiotics. But if they -- if we can't, if they have an abscess, we would operate.	deservingness
	1008	Interviewer: And, so, would your approach change if you had learned -- like when Katie presented with prosthetic valve endocarditis, she was pregnant? Like what would your treatment look like for someone who's pregnant? Respondent: Well, I probably would be more apt to operate or -- like doing surgery on somebody who's pregnant is at a very high risk for, you know, having spontaneous abortion.	pregnancy, deservingness, save lives

	1008	Interviewer: Yeah. Okay. What about if she was injecting cocaine but not heroin? Does that change your -- Respondent: Doesn't matter. Interviewer: Okay. And if it had been five years since she had last used drugs? Respondent: Yeah. I would be more prone to operate.	deservingness, risk evaluation
	1008	Interviewer: Okay. So, in a case where like if the patient was definitely going to die without the surgery, like 100 percent mortality and had maybe 50 percent operative mortality? Respondent: Wouldn't matter. I would follow the same algorithm that I had before. If they came in shooting up drugs, they're not getting another operation. Interviewer: Okay. Wait. What about for folks who weren't injecting drugs, like -- Respondent: In the past? That had quit? Interviewer: Yeah. Respondent: Yeah, we would operate.	commitment to recovery, deservingness, futility, protocol, risk evaluation
	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues

	1008	Do you think that the treatment for endocarditis in the people who inject drugs is going to -- will change in the future? Respondent: I hope so, but I doubt it. Interviewer: Okay. Respondent: I don't see any wonder drug coming around or other therapy. I think it's going to be this way for the next 10 years. Interviewer: And then maybe in the 10 years after that? Who knows? Respondent: Who knows. Interviewer: Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school. Interviewer: So, who like -- I don't know. Who would need to make changes then? Everyone? Respondent: Everybody. Interviewer: Yeah. Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	changes over time, pain management, accountability, cost, deservingness, frustration

	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, commitment to recovery, contract, accountability, paternalism, deservingness
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	commitment to recovery, deservingness, second chance, liability of medical professionals, contract, futility, reinfection, multiple surgeries
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, perception of risk in PWID, societal issue
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	deservingness, stigma , paternalism, frustration, futility, multidisciplinary group
	1018	What if it was 5 years since she last used drugs? Five years and this was a recurrent episode from reuse, yeah, she gets extra points for staying off drugs for 5 years.	time between operations, deservingness, second chance, commitment to recovery

	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	tx compared to broader, deservingness, liver vs heart, futility, paternalism
	1018	think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of.	data, follow-up care, contract, deservingness, desired changes, valve preference, stigma

	1012	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um. I wonder what kind of patient I am going to meet. Because they come, they sort of come in different favors. There's the sort of one that you know is kind of devastated and feels really terrible about what has happened and wants to get better and then there's one that's had this before and treated through it and it's like a revolving door and there is sort of a, you know, a spectrum of personalities and I kind of wonder which sort of patient I am about to meet.	deservingness, priorities, second chance, stigma
	1012	Does it impact what type of valve you chose? Yes. How so? Because generally they tend to be younger patients and younger patients if they have a valve lesion that's congenital or infectious from some other unfortune, unfortunate happenstance then you would probably advise them on a mechanical heart valve, mechanical heart valves require coumadin, and um, if you have a mechanical heart valve and you don't take your coumadin it's very very dangerous. So, most surgeons, I think do not put mechanical heart valves in people who are known drug users, unless they've been known to, you know, abstain for a long period of time, so you know, and we have all been burned by making exceptions to that rule.	age, perception of risk in PWID, deservingness, commitment to recovery, frustration
	1012	Are there professional society guidelines on this issue? Um. The ones that I am aware of are pretty wishy washy, they're not, you know, they don't guide us as to everybody gets one valve and after that no more, that's a personal and a programmatic decision on how aggressive to be with patients that continue to um use IV drugs and continue to get infection.	protocol, disagreements (professional), lack of resources, deservingness, reinfection, relapse
	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive

		unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	
	1012	you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not. And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness. And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? I	stigma , seriousness, relapse, reinfection, accountability, deservingness, follow-up care, multiple surgeries, futility, lack of resources
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability

	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, risk evaluation, societal issue
	1018	What if it was 5 years since she last used drugs? Five years and this was a recurrent episode from reuse, yeah, she gets extra points for staying off drugs for 5 years.	commitment to recovery, second chances, time between operations, deservingness
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness
	1005	It doesn't necessarily what valve is placed when we think about our general population here, but I do think that we tend to place more tissue valves in younger patients if they use IV drugs.	age, deservingness

	1005	I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	deservingness, cost
	1005	I guess I've never thought about it. I think that the liver transplant group probably has a much more stringent criteria for transplanting alcohol users than we have for operating on drug users. It certainly maybe in the future that we need to become more strict with these patients. It's not uncommon for us to get called to do a third tricuspid on a patient that keeps reusing or is actively reusing. I typically tell people one operation and that's it. If we put these people in the same population as liver transplant patients we would probably be doing less valves on endocarditis patients because their criteria are more stringent.	liver vs heart, deservingness, second chance
	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care
	1005	Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: That patient would not be an active drug user and would be treated like any non drug user.	deservingness, risk evaluation, stigma
	1005	We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	risk evaluation, deservingness, futility, stigma

	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	futility, commitment to recovery, accountability, relapse, contract, deservingness
	1017	I: Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Does age impact your decision at all to operate on prosthetic valve infections or the type of valve you use? S: No. It's not age, but rather, um, well, in the sense that, you know, we, all surgeons assess operative risk no matter what, so young people are at lower risk than older people. But, um, you know, 2019, it's about what their, um, where they are, where are they in their addiction	age, perception of risk in PWID, deservingness, commitment to recovery

	1017	I: If she was 5 years clean, so 5 years since she last used drugs? S: Um, yeah, that would be a little bit different, because they, they have a capacity for abstinence, and, um, if they did it because they, they sought treatment, and they had resources to, um, do that again, I think that would mediate things. If it's because they lost resources, they lost a job, they've had, um, family problems, and things that are unresolved that will not be resolved afterwards, then we are still back.	time between operations, multiple surgeries, commitment to recovery, deservingness, support for patient
	1004	These people come in sick and don't take care of themselves	accountability, commitment to recovery, deservingness
	1004	It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	commitment to recovery, deservingness, desired changes, discussing addiction, priorities
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	liver vs heart, stigma , deservingness, frustration, futility
	1004	Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	commitment to recovery, frustration, futility, priorities, risk evaluation, deservingness
	1004	If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato. And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	cost, screening for ID, societal issue, deservingness
	1016	I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting	stigma , deservingness, discussing addiction

		substance abuse help. Um, and so I'm very up front with that in addition to the risks.	
	1016	Some people make comparisons between valve replacements in the setting of infective endocarditis and a liver transplant in the setting of alcoholism. What do you think of these examples? S: Um, they're both some degree self-inflicted. Um, I don't think the example holds up well, because you could argue that anybody that doesn't exercise or doesn't eat right that develops coronary disease, um, because of their lifestyle and diet is also self-inflicted, so, I think that, um, a disease is a disease, and as doctors it is our obligation to treat the patients.	liver vs heart, deservingness, save lives
	1016	Does anything specific help you choose, like the patient's housing, insurance, job status, child care? S: Um, do you mean in terms of leaving with a PICC line or… I: Yeah, like if whether they stay in the hospital, whether they go home, whether they go to a long-term care facility? S: Truthfully, um, I would say, no. Um, and the reason being is, if you're sick, I'm going to give you the care that you need to get through your illness. I understand there's a lot of social factors that get involved, but to me, these are very high risk patients, um, and there's a chance for, again, a lot of misuse of PICC lines, um, and I think that, um, you know, as much as you empathize with the needs for child care and all these other things, um, I feel like I still have to deliver the appropriate level of medical care	PICC line risk, SES, deservingness
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program	risk evaluation, liability of medical professionals, save lives, commitment to recovery, deservingness

		or they're more likely to relapse, you wouldn't undertake that risk.	
	1016	Let them prove that they can enter recovery, and then, I think the other piece of the puzzle is we have them come back to our clinic in six weeks for echo follow-up and to plan surgery at that time. The majority of patients that I see in consultation in the hospital do not show up to that six-week appointment. Um, I have had one, actually. Um, and so they take up clinic time, and, um, it's kind of my little, in some degree, my little test, if you're really committed and you come back to see me in my office, then I'm willing to operate on you, but if you can't make the appointment, and you can't demonstrate some sort of, um, follow up, then, um, you know…	follow-up care, commitment to recovery, deservingness
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries

		about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	
	1006	Interviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	data, deservingness, commitment to recovery, priorities, relapse
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation

		or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	
	1006	Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	deservingness, protocol, risk evaluation
	1006	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis than a 55-year-old? Interviewee: Not really, unless they have—the 55-year-old has stopped and started, stopped and started. Interviewer: Does age impact your decision to operate on a prosthetic valve infection? Interviewee: Well if they're really old, yeah, but other than that, no.	age, deservingness
	1006	Interviewer: What about if she injected cocaine but did not inject heroin? Interviewee: I'd treat 'em about the same, heroin has more addiction potentially, but it's not the only thing that goes into the equation. Interviewer: What if it was five years since she last used drugs? Interviewee: Well you feel if it's a prosthetic valve infection, a little more inclined to give her a second chance. Interviewer: Okay. How does different types of drug use influence your decision to operate for endocarditis? Interviewee: Define different kinds of drug use, it's all IV? Interviewer: I think they mean IV, different things that can be injected, or even including pills, does that play any role? Interviewee: Well it's the only people that can get endocarditis are the ones that inject. In terms of the different types of drugs, it doesn't really play that much of a role. I'm not sure	deservingness, risk evaluation

		that people really know what they're injecting anyway, just taking your dealer's word for it.	
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation

		problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID
	1012	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um. I wonder what kind of patient I am going to meet. Because they come, they sort of come in different favors. There's the sort of one that you know is kind of devastated and feels really terrible about what has happened and wants to get better and then there's one that's had this before and treated through it and it's like a revolving door and there is sort of a, you know, a spectrum of personalities and I kind of wonder which sort of patient I am about to meet.	deservingness, stigma

	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, futility, frustration, deservingness
	1015	I: Yeah, sorry… What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I don't necessarily share that opinion in every case, but I do see the rationale in it, so…	tx compared to colleagues, changes over time, deservingness, defensive, second chances

	1015	I: Ok. How do you think, um, your approach compares with other surgeons in the country or other countries in the world? S: I don't know about other countries, but I think that in this country, most groups have the same approach, recurrent active IV drug users typically do not get offered recurrent surgery.	tx compared to colleagues, deservingness
	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	commitment to recovery, deservingness, second chance, frustration, futility, reinfection, relapse, risk evaluation
	1010	Tell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, accountability, deservingness, follow-up care, protocol, risk evaluation

	1010	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about those comparisons? I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	liver vs heart, deservingness, lack of resources, risk evaluation
	1010	You operate on Katie and she does well. She is linked into a methadone maintenance program. About 1 year later she is back in the hospital and she now has prosthetic valve endocarditis. Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. Any specific cases come to mind? One, two, three, four in 10 seconds. Tell me your thoughts about management decisions in these cases The issue starts I think earlier. And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have	deservingness, follow-up care, pre-operation care, risk evaluation

		multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of their endocarditis that its really not indicated to operate on someone like them.	
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	pregnancy, stigma , frustration, deservingness, multidisciplinary group
	1010	How about if she had injected cocaine but did not inject heroin? Does that change anything? Intravenously? Yes No And what if when she presented with prosthetic valve endocarditis it was 5 years since she last used drugs? And then she relapsed? Yes. I would see that more favorably because I would think that she has shown that she can stay off drugs. Who am I to say what happened you know if she did it right after going home than if she did it 5 years later? Now what is the magic timeline? I don't know but to me that says that is someone who probably has a predilection to doing this and they fought hard for 5 years and uh, I would see it the same way as someone who had coronary artery disease and quit smoking for 5 years and then they smoked again after 5 years. Its uh, I am not going to pass judgement. So, it would make a difference, 5 years verses a day.	risk evaluation, deservingness

	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, deservingness, administration, frustration
	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more people to operations that in other countries, even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	changes over time, cost, deservingness, tx compared to broader

	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	pain management, empathy, lack of knowledge, deservingness, training
	1014	I: Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think of these examples? S: Interesting. Let me think about it for a second. Uh… Yeah, they're similar. They're similar. They're similar, though, though, one aspect that they usually differ on is, is liver's moral ambiguity, on the liver side, you are taking a liver, the number of donors is limited, the pool is limited, and that liver that you are putting it on someone's high risk patient, you know, who might or might not recur, you know, without his alcoholism, and you, another patient that, didn't deserve it, but doesn't have that problem, he has some other liver problem not from alcoholism, and he did not get that liver, this patient did. Whereas for valves, I mean, the valves are there on the shelf, there are so many of them, so maybe in that perspective is a little bit different. But, there's a lot of commonalities between the two situations.	liver vs heart, deservingness

	1014	I: Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions. How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that. Am I confusing you?	second chances, deservingness, support for patient, SUD treatment, insurance, risk evaluation, SES
	1014	Those are real-life experiences that, that, you shake your head, and I'm like, really, Mr. Trust Fund, will operate on him twice or three times, and the guy coming from under the bridge doesn't deserve it? Maybe, this guy is more…you know...	SES, deservingness

	1011	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? I think they're, I think it's a reasonable comparison if you were to think about it in terms of disease and the treatment in the sense that uh, that the disease is not valve failure, that is the symptom of the problem that the patient is facing, the real problem is their drug abuse thing. If you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant. The reason it is different though is that we still operate on them, you may ask the question well if that is how you feel then why do you still operate on these patients because you know no one would get a liver transplant if they are still drinking alcohol because the resources are different, there is only a finite number of livers and they really are in a position where they can put a hard stop to it and say no we are not going to do this because somebody else can get that liver. In our situation we don't make that an active hard stop for us because we are not limited by the amount of valves that we have or other things we have so we would like to give these patients a chance, we want to give them a chance we want to give them a shot at getting better so sometimes we do accept less than ideal situations.	liver vs heart, lack of resources, deservingness

	1011	You operate on Katie and she does well. She is linked into a methadone maintenance program. About 1 year later she is back in the hospital and she has prosthetic valve endocarditis. Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. Any specific cases come to mind? A patient very similar to her in age who had a tricuspid valve replacement and came back with tricuspid valve endocarditis. Tell me your thoughts about management decisions in these cases It becomes trickier because at that point you are not relying on future projections, it's not what, like the conversation you had with the patient the first time around. Going back to your previous question about you know their commitment to quit injecting drugs at this point they have a track record so my first question would be, when Katie comes back is that was, she injecting drugs again since the time of her previous operation and I think that is the big question. Because patients can get endocarditis without injecting drugs, I mean that's not you know one population, so what I would say is that if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse. And you treat her like you would. Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody	patient story, risk evaluation, commitment to recovery, protocol, deservingness

		breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	
	1011	What do you think about these options? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Most of the times I think I would favor the PICC line and go to the nursing facility. Some of that is made out of pragmatism, being watchful, we end up canceling cases because we don't have enough ICU beds, or OR beds or hospital beds or whatever that is. You know one way we seem like we just want to do more cases, but we see that as those are real patients who need to be taken care of and if we keep someone in the hospital that doesn't need to be in the hospital then that is blocking someone else's care. And this is not necessarily you know the rationing of care, but it is sometimes just the appropriate use of care. So, I think that keeping them in the hospital for 6 weeks with a PICC line just to give them antibiotics I think is not the most optimal system that we have. And maybe that is where going back to your previous question, maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to	PICC line risk, cost, deservingness, societal issue

		put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the time. It's not like these patients are going back to their families, their grandparents, or an aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own police I think is a little too much to ask of them.	
	1011	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, I don't think so. I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one additional thing that I have to but not let that impact the decision making.	pregnancy, deservingness, multidisciplinary group
	1002	Respondent: Yeah, if the patient is not willing to stop, then why do we need to do the surgery?	commitment to recovery, deservingness

	1002	Respondent: Yeah, what's the cause of that endocarditis? That's the important question. Interviewer: Would it impact your decision if it was because of drug use? Respondent: I think so. Interviewer: How so? Respondent: How so? Well, it depends. I think it depends on the [overlapping noise] scenario. Interviewer: How do you feel about operating on someone who used to use drugs ten years ago, and then they get prosthetic valve endocarditis after a dental procedure? Respondent: I mean, why not operate?	deservingness
	1002	Respondent: It depends on the patient. You know, the 55 and 22-year-old – it depends on how the patient is like for 55. So it's case by case. Interviewer: Does age usually impact your decision on deciding if you're going to operate on a prosthetic valve? Respondent: I think so.	age, deservingness
	1002	Interviewer: Would your approach to your management of Katy change if you learned that she was pregnant when she came in? Respondent: I think so. Interviewer: How so? Respondent: How so? Like, case by case.	pregnancy, deservingness
	1002	Interviewer: If a patient has 100-percent mortality without surgery but have a 50-percent mortality with operation, is it worth taking the patient to the OR? So if you know they will not survive without the surgery – Respondent: Yeah, it totally depends on the patient, you know? The age or whatever. Yeah, if the patient is 80 years old or something, then why do I need to take the patient?	age, deservingness
	1002	Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	commitment to recovery, deservingness, frustration, futility, risk evaluation, tx compared to colleagues, disagreements (professional)

	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone.	commitment to recovery, liver vs heart, deservingness, second chance
	1003	So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	commitment to recovery, deservingness, futility
	1003	Respondent: I think I'm more aggressive. Interviewer: Okay. Respondent: I'm more willing to do it. The first, time, second time, sometimes third time. That's just - my overall philosophy is different than my colleagues. But, yeah. Interviewer: Okay. And patients – and - Respondent: Around the country? Interviewer: Yeah.	tx compared to broader, tx compared to colleagues, deservingness

		Respondent: I still think people like myself are a minority. Unfortunately,	
	1014	Those are real-life experiences that, that, you shake your head, and I'm like, really, Mr. Trust Fund, will operate on him twice or three times, and the guy coming from under the bridge doesn't deserve it? Maybe, this guy is more…you know...	SES, deservingness, rationalization (secondary)
	1005	nterviewer: Does it impact what type of valve, mechanical versus bioprosthetic valve you place? Interviewee: It doesn't necessarily what valve is placed when we think about our general population here, but I do think that we tend to place more tissue valves in younger patients if they use IV drugs.	age, perception of risk in PWID, valve preference, deservingness
	1005	Interviewer: Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Yes. Interviewer: Can you say why or why not? Interviewee: I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	commitment to recovery, deservingness, paternalism, accountability, cost
	1005	nterviewer: Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism, what do you think of these examples. Is it equivalent, similar, different? Interviewee: I guess I've never thought about it. I think that the liver transplant group probably has a much more stringent criteria for transplanting alcohol users than we have	multiple surgeries, liver vs heart, deservingness, second chance

		for operating on drug users. It certainly maybe in the future that we need to become more strict with these patients. It's not uncommon for us to get called to do a third tricuspid on a patient that keeps reusing or is actively reusing. I typically tell people one operation and that's it. If we put these people in the same population as liver transplant patients we would probably be doing less valves on endocarditis patients because their criteria are more stringent.	
	1005	Interviewee: Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary. Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes.	multiple surgeries, pre-operation care, deservingness, reinfection, relapse, accountability, commitment to recovery, frustration
	1005	Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: That patient would not be an active drug user and would be treated like any non drug user.	perception of risk in PWID, deservingness, reinfection, stigma
	1005	Interviewer: This is going to ask you to speak a little bit about the risks of a reoperation versus the original surgical procedure. Interviewee: Well reoperations always carry more risks. I think there's a higher pacemaker risk with any reoperation. Certainly a higher bleeding risk, stroke risk and length of operation. Interviewer: If a patient has 100 percent mortality without surgery and 50 percent operative mortality with an operation, is it worth taking the patient to the OR? Interviewee: We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can	risk evaluation, multiple surgeries, futility, deservingness, stigma

		only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	
	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	pain management, deservingness, empathy, lack of knowledge, training
	1014	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think of these examples? S: Interesting. Let me think about it for a second. Uh… Yeah, they're similar. They're similar. They're similar, though, though, one aspect that they usually differ on is, is liver's moral ambiguity, on the liver side, you are taking a liver, the number of donors is limited, the pool is limited, and that liver that you are putting it on someone's high risk patient, you know, who might or might not recur, you know, without his alcoholism, and you, another patient that, didn't deserve it, but doesn't have that problem, he has some other liver problem not from alcoholism, and he did	liver vs heart, deservingness

		not get that liver, this patient did. Whereas for valves, I mean, the valves are there on the shelf, there are so many of them, so maybe in that perspective is a little bit different. But, there's a lot of commonalities between the two situations.	
	1014	How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that.	support for patient, deservingness, insurance, SUD treatment, risk evaluation, SES
	1014	Those are real-life experiences that, that, you shake your head, and I'm like, really, Mr. Trust Fund, will operate on him twice or three times, and the guy coming from under the bridge doesn't deserve it? Maybe, this guy is more…you know...	SES, deservingness
	1009	Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in cardiogenic shock with severe heart failure and a root abscess, they need an operation.	risk evaluation, deservingness, priorities, protocol, save lives

	1009	I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around.	discussing addiction, patient consent, accountability, deservingness, multiple surgeries, paternalism, reinfection, futility
	1009	urgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things.	commitment to recovery, accountability, deservingness, paternalism
	1009	Interviewer: I think you've spoken about it this. But if she had been injecting cocaine but not heroin. Surgeon: Doesn't matter what they're injecting. Interviewer: And then in this case if it had been like five years since she had last used drugs, and she got it, again, from a dental procedure? You have talked about that. Surgeon: Yes	deservingness

	1009	What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	changes over time, accountability, deservingness, stigma
Desired Changes			
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	

	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	
	1010	I would like people in various consulting services to use discourse and open-mindedness not as a talking point but as a good thing, as a virtue, something that has to happen when you take care of patients. I think that sometimes people are rushed to uh, you know they come in with preconceived ideas about who you are and what you are going to do, and I don't think that is fair, I don't think that is right.	
	1019	Obviously I'd love… I'd love to have more minimally invasive methods. I'd love to have antibiotics that could cure cardiac abscesses and treat things like Staph aureus and Candida and eradicate them. Uh, I'd love to see, uh, prosthetic material that doesn't lend itself to infection, uh, which we don't have.	
	1019	there was a time in which a compound called Silzone was, uh… was implanted into, uh, valve sewing rings. It's… it was a metallic… it was a silver, uh, compound of some sort that was incorporated into, uh, sewing rings that has antibacterial properties. And so the idea was that you could put this in and, uh… and it would prevent prosthetic valve infections. The problem was that it also inhibited the ingrowth of fibroblasts and tissue into the sewing ring. And so these patients actually came back, paradoxically, with, um… a lot of paravalvar leaks and prosthetic valve endocarditis, even despite the fact that there was this so-called Silzone in it.	

		Right So, Carbomedics [sp?] had it. St. Jude had it, for a while, um… and then it disappeared. There was never [unintelligible], few papers in the literature published on it. But the companies, to the best of my knowledge, refused to acknowledge that it was because of the Silzone. Um, I don't think there was ever an open statement that said that we put this in and it was actually a bad idea. But they stopped using it, so they knew it was a bad idea. But I would love to see something like that.	
		Are there any changes that you would like to see? Well… Surgically, or… Uh… Uh, I'd love to see, um… You know, I'd love… Obviously I'd love… I'd love to have more minimally invasive methods. I'd love to have antibiotics that could cure cardiac abscesses and treat things like Staph aureus and Candida and eradicate them. Uh, I'd love to see, uh, prosthetic material that doesn't lend itself to infection, uh, which we don't have. There was a, uh… This was before your time, [REDACTED], but there was a, um… and you may have heard or you may not have… but there was a time in which a compound called Silzone was, uh… was implanted into, uh, valve sewing rings. It's… it was a metallic… it was a silver, uh, compound of some sort that was incorporated into, uh, sewing rings that has antibacterial properties. And so the idea was that you could put this in and, uh… and it would prevent prosthetic valve infections. The problem was that it also inhibited the ingrowth of fibroblasts and tissue into the sewing ring. And so these patients actually came back, paradoxically, with, um… a lot of paravalvar leaks and prosthetic valve endocarditis, even despite the fact that there was this so-called Silzone in it. Right So, Carbomedics [sp?] had it. St. Jude had it, for a while, um… and then it disappeared.	
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	1018	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Yeah, you know I keep thinking back to that movie I saw – Clockwork Orange- and I thought what if there really was a humane way to behaviorally condition or give drugs that make, that change the experience for the patient. We have to explore this.	
	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical	

		valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	
	1016	I: Do you think treatment for endocarditis in people who inject drugs will change in the future? S: Um, I, I think, I don't know the exact treatment will change, I mean it still comes down to antibiotics and debridement to some degree. Um, but I think the ways in which we can get patients to have more successful outcomes, um, I think there's a lot of room to improve on that. Um, and, hopefully to improve relapse and reinfection.	
	1006	Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can	

		make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	
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	1002	Interviewer: Do you think treatment for endocarditis for people who inject drugs will change in the future? Respondent: The surgery? You said the management or the surgery?	

		Interviewer: It could be both, either the management or the surgery. Respondent: Yeah. I think that will change, but I don't have anything up in my mind at this point.	
	1017	How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	
	1017	Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's	

		necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	
	1013	I think that one thing that will be interesting to you in this study, or that would be interesting to be in this, is one area that I have really changed, my thinking has really evolved a lot is in right sided endocarditis. So, 20 years ago if someone had tricuspid valve endocarditis and a great big vegetation and severe tricuspid valve regurgitation and they embolized to their lungs and they had lung abscesses and maybe an empyema I would operate on them. I don't anymore. Because I think that they are better off being treated with antibiotics and even if they need a chest tube for their empyema, treat the infection unless, you can sterilize the vegetation, if you can't sterilize the vegetation then you are kind of stuck, you have to operate. But I am much more reluctant to operate on right sided disease now and I think that, if we can assemble enough information around that I think that could contribute to guidelines – it gets a little bit to your guideline question- that I think would actually be useful. I don't think we will ever have guidelines for these really difficult ethical ones but I can imagine developing an approach where for example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients	

		have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	
	1003	Respondent: Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive.	

		Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to
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		do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	

		Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	
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		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1009	Interviewer: How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	

	1009	Interviewer: Do you think that treatment for endocarditis and people who inject drugs will change in the future? Surgeon: In terms of surgical management? Or? Interviewer: Yeah. Surgeon: No. I think the operations are pretty standard. In the absence of new antibiotics that are much more effective, I think it's still going to be the same. I think you operate on patients with heart failure and mechanical complications. Interviewer: What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of	

		thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	
	1013	And to close, is there anything I haven't asked you about today that you would like to say? I think that one thing that will be interesting to you in this study, or that would be interesting to be in this, is one area that I have really changed, my thinking has really evolved a lot is in right sided endocarditis. So, 20 years ago if someone had tricuspid valve endocarditis and a great big vegetation and severe tricuspid valve regurgitation and they embolized to their lungs and they had lung abscesses and maybe an empyema I would operate on them. I don't anymore. Because I think that they are better off being treated with antibiotics and even if they need a chest tube for their empyema, treat the infection unless, you can sterilize the vegetation, if you can't sterilize the vegetation then you are kind of stuck, you have to operate. But I am much more reluctant to operate on right sided disease now and I think that, if we can assemble enough information around that I think that could contribute to guidelines – it gets a little bit to your guideline question- that I think would actually be useful. I don't think we will ever have guidelines for these really difficult ethical ones but I can imagine developing an approach where for	

		example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	
	1015	Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Um, it is hard to predict, but maybe, just like everything else in medicine. I: Are there any changes that you want to see? S: Uh, I think honestly the change is going to start not with, uh, the disease, it's going to start with the disease of IV drug use and opioid use. It's not going to, I don't think the change is going to come from people who have already been infected. I: Who do you think need to make the changes in the treatment for…? S: I think it is a public health problem. I don't, the change can come from doctors, but I think the changes need to come from the companies that, um, promote this kind of behavior. Or, not, I shouldn't say that, promote, easy, um, access to opioids. I: And how much time do you think is needed for these changes? S: Oh, at least, uh, one generation. At least one generation.	
	1001	Interviewer: Are you interested in receiving more training on this? Respondent: Yeah, if my schedule allows.	
	1001	Interviewer: Do you think that treatment for endocarditis for people who inject drugs will change in the future? Respondent: I don't know. I hope. Interviewer: What kind of changes would you like to see? Respondent: I hope there would be a guidelines. You know, how many times do we do surgery? If they go back to drug use, should we withhold the surgical intervention? Or what	

		would be the process? You know, the medicine is becoming both standardized or individualized. So I think for an endocarditis patient, it should be the future. On one side, we should clearly have guidelines from different perspectives. On the other side, we have to mainly treat an endocarditis patient individually, based on their own needs.	
	1004	R: DO you think treatment for endocarditis will change in the future? What changes would you want to see? I: No, I don't think that the treatment will change. This disease is one where prevention is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	
	1005	Interviewer: Do you want to receive more training on this? Interviewee: No.	
	1005	The role of medications is hopefully to deter the patient from reusing their drug of choice and managing cravings and symptoms of desire for drugs.	
	1005	I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	

	1005	Interviewer: Okay. I think you're already answering this one as well, some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Interviewee: Not that I know of. Interviewer: Do you think it would be helpful? Interviewee: Yes. Interviewer: You already answered that. Who needs to be involved and come to these meetings to make it worthwhile? Interviewee: Well it would be a difficult time to try to get all of us together. Perhaps, a once every two weeks or once a month meeting on the difficult cases would be nice. I think that it needs to be cardiac surgery, cardiology, infectious disease, addiction medicine, pain team, social work and discharge planner.	
	1018	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Yeah, you know I keep thinking back to that movie I saw – Clockwork Orange- and I thought what if there really was a humane way to behaviorally condition or give drugs that make, that change the experience for the patient. We have to explore this	
	1018	think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical	

		valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of.	
	1018	And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	
	1012	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think it is a reasonable example. Do you think they are similar? Well in the sense that you know have a life-threatening problem, you know, what's different is the people that are uh, well couple things are different- one thing that is different is that in order to transplant a liver someone who's diseased their liver with chronic alcohol use, you have to get that liver from a donor which is a much more scarce resource than a valve which we can just pick off the shelf. So, in that sense I don't think it is a great example. And usually the valve, you know the endocarditis patients, it's more of an immediate life-threatening problem, whereas the liver cirrhotic is more of a chronic disease that they have developed over time. And another difference is the, when, my understanding is when they transplant alcoholic cirrhotics, they usually have demonstrated abstinence for a period of time which is generally, I would think 6 months or longer or else they have some other reason to think that they are absolutely not going to do it again. Um, and we don't have that luxury with endocarditis. They come in, they have a life-threatening problem, we can't wait 6 months to get that valve replaced.	

	1012	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Uh. I don't think that antibiotics are ever going to be significantly more powerful than they are right now. I would hope that at some point we get better treatments for the substance abuse which is the problem. What we are treating is a sequela of the problem but what we need to focus on is the problem and right now, even your study is not focusing on the problem, its focusing on how aggressive we are in treating one of the sequela of the problem. I hope that the focus can shift to a. why are so many young people using life-threatening drugs and b. once they have a life-threatening problem as a consequence why do they still do it. So, that is a, that's the problem.	
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	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	
	1004	It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	
	1016	I: Do you think treatment for endocarditis in people who inject drugs will change in the future? S: Um, I, I think, I don't know the exact treatment will change, I mean it still comes down to antibiotics and debridement to some degree. Um, but I think the ways in which we can get patients to have more successful outcomes, um, I think there's a lot of room to improve on that. Um, and, hopefully to improve relapse and reinfection.	

	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	
	1012	Have you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop	

		them up and help them get over their primary problem which is substance abuse.	
	1012	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think it is a reasonable example. Do you think they are similar? Well in the sense that you know have a life-threatening problem, you know, what's different is the people that are uh, well couple things are different- one thing that is different is that in order to transplant a liver someone who's diseased their liver with chronic alcohol use, you have to get that liver from a donor which is a much more scarce resource than a valve which we can just pick off the shelf. So, in that sense I don't think it is a great example. And usually the valve, you know the endocarditis patients, it's more of an immediate life-threatening problem, whereas the liver cirrhotic is more of a chronic disease that they have developed over time. And another difference is the, when, my understanding is when they transplant alcoholic cirrhotics, they usually have demonstrated abstinence for a period of time which is generally, I would think 6 months or longer or else they have some other reason to think that they are absolutely not going to do it again. Um, and we don't have that luxury with endocarditis. They come in, they have a life-threatening problem, we can't wait 6 months to get that valve replaced.	
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	1014	Um, try to educate the patient as much as we can, but again, you're talking to the wrong guy. We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over.	
	1014	I: Gotcha. Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Good question. The initial treatment, probably not. But afterwards, I hope it does. Because that would minimize recurrence. Again, recidivism is what kills them.	

	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	
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	1005	Interviewer: Do you want to receive more training on this? Interviewee: No. Interviewer: What do you think about drug rehab? Interviewee: I think it's excellent. Interviewer: Is it different than drug detox? Interviewee: Yes, but rehab can incorporate	

		some aspects of detox, depending on the center.	
	1005	Interviewer: What is the role of medications, they mean for opioid use disorder? Interviewee: The role of medications is hopefully to deter the patient from reusing their drug of choice and managing cravings and symptoms of desire for drugs. May I have a quick break to answer this page?	
	1005	nterviewer: Are there any changes that you would like to see with regards for treatment of endocarditis? Interviewee: I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	
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	1014	: Gotcha. Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Good question. The initial treatment, probably not. But afterwards, I hope it does. Because that would minimize recurrence. Again, recidivism is what kills them. I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data. I: How much time do you think is needed for these changes? S: I mean, we needed them five years ago. I: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? S: On and off. I: Do you think it's helpful?	
	1009	What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get	

		treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back.	
	1009	So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1009	How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	
	1009	Do you think that treatment for endocarditis and people who inject drugs will change in the future? Surgeon: In terms of surgical management? Or? Interviewer: Yeah. Surgeon: No. I think the operations are pretty standard. In the absence of new antibiotics	

		that are much more effective, I think it's still going to be the same. I think you operate on patients with heart failure and mechanical complications.	
Disagreements Professional			
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID
	1010	We don't have that in medicine, you don't have the option to say I do not feel comfortable exposing myself to this, I mean I am willing to take a chance when I don't know a patient has it, but if I have you know a drug addict with a high viral load I don't have the right in paper at least to say I do not feel comfortable operating. And maybe I shouldn't. I don't know. But it is something I think about. And the second thing that I think about is if you are a police officer and you get shot on the job, there is a huge mechanism to support you and your family, to support your family because you are gone, same if you are a firefighter and you are killed in fire. I think if something happened to me, my family would have a very hard time getting through. Because we as a profession lack the mechanisms to support each other. We actually do the opposite we don't treat each	infection risk to surgeons, support for surgeons, disagreements (professional)

		other well. So, because of these three reasons it does cross my mind a lot when I operate.	
	1010	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? They seem to uh, they seem to, not everyone, but many of them seem to talk better than I do and have more friends among the consulting services, but they don't end up operating on them I end up operating on them. I think I am a very direct person and that doesn't help me. Uh because I may rub someone the wrong way by telling them what I think, someone else may tell them what they want to hear which may make them feel good, but they don't operate. So uh, I mean I am a very direct person and the only thing that helps is going to bed at night and looking at myself in the mirror and I can say yeah, I am ok. But that doesn't help with your daily interactions.	tx compared to colleagues, disagreements (professional), frustration, multidisciplinary group
	1010	I would like people in various consulting services to use discourse and open-mindedness not as a talking point but as a good thing, as a virtue, something that has to happen when you take care of patients. I think that sometimes people are rushed to uh, you know they come in with preconceived ideas about who you are and what you are going to do, and I don't think that is fair, I don't think that is right.	support for surgeons, collaboration with addiction medicine, desired changes, disagreements (professional), multidisciplinary group
	1008	has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have	disagreements (professional), frustration

		the ethicist come in or anything like that. I think everybody sort of knows our approach.	
	1002	Conflicts? I don't think so.	disagreements (professional)
	1016	I: Do you and your team every get into conflict about a certain patient case or anything? S: Yeah, we have, we have discussions about it. Um, for sure. Um, and I think having, we have that multidisciplinary meeting, or we have a valve meeting on BLANK morning, and it's been really great in cases, um, where we've gotten both addiction psychiatry and infectious disease there to have a group discussion, on some of those complex cases where you're not really sure what to do.	multidisciplinary group, disagreements (professional)
	1006	I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation.	disagreements (professional), futility, seriousness, frustration, relapse
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it	tx compared to colleagues, stigma , perception of risk in PWID, disagreements (professional), collaboration with addiction medicine, deservingness, multidisciplinary group
	1002	Interviewer: Have you ever had any conflict with any staff members about deciding what's right for any patient? Respondent: Conflicts? I don't think so.	tx compared to colleagues, disagreements (professional)

	1007	Have you ever experienced conflicts within your team or with another staff when it comes to treating patients with injection drug use disorder? Speaker 2: Within our surgical team? Speaker 1: Yeah. Speaker 2: No. Speaker 1: Okay. Speaker 2: With, with the rest of the hospital, I mean, not conflicts, but you know, disagreements, in management style. Speaker 1: So were these disagreements in management style resolved. Were they resolved? Speaker 2: Yeah, it's always resolved.	tx compared to colleagues, disagreements (professional), administration, defensive
	1017	Recovered, and literally six months later I got a call that he had now infected his homograft because he's still using. So, I said, we're not going to do anything. I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point.	disagreements (professional)
	1017	Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	frustration, desired changes, multidisciplinary group, support for surgeons, accountability, disagreements (professional)
	1013	Have you ever experienced conflict within your team or other staff members and if so how was it resolved? So certainly, there have been instances where one member of the team declines to operate on a patient and I or someone else agrees to operate. But I don't see that as a conflict. This is such a difficult question that I think every person has to answer for themselves. And we never, I have never seen a situation where one	tx compared to colleagues, disagreements (professional)

		surgeon says I don't want to operate and another surgeon gave them a hard time, or told them they were wrong, told them that they were immoral or anything like that. I think everyone appreciates how incredibly complex this problem is.	
	1009	Interviewer: How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	disagreements (professional), accountability, desired changes, societal issue, support for patient
	1017	I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point.	disagreements (professional)
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group

		answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	
	1013	Have you ever experienced conflict within your team or other staff members and if so how was it resolved? So certainly, there have been instances where one member of the team declines to operate on a patient and I or someone else agrees to operate. But I don't see that as a conflict. This is such a difficult question that I think every person has to answer for themselves. And we never, I have never seen a situation where one surgeon says I don't want to operate and another surgeon gave them a hard time, or told them they were wrong, told them that they were immoral or anything like that. I think everyone appreciates how incredibly complex this problem is.	tx compared to colleagues, disagreements (professional)
	1015	Have you ever experienced conflict within your team or other staff members about this… S: No. Because at the end of the day, it's whatever you want to do as, you know, the surgeon treating the patient, so, no one is going to fault you, um, so… I'll leave it at that.	disagreements (professional), accountability, paternalism
	1015	people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	liability of medical professionals, disagreements (professional), accountability, multidisciplinary group, frustration

	1007	Speaker 1: Okay. Thank you. Um, please, what's your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to surgeons at your institution, in the country and in the world in general? Speaker 2: Similar to the other surgeon I work with here. And, um, there's such a wide range of opinions. Speaker 1: Yeah. Speaker 2: It's hard to tell. Speaker 1: Okay. Have you ever experienced conflicts within your team or with another staff when it comes to treating patients with injection drug use disorder? Speaker 2: Within our surgical team? Speaker 1: Yeah. Speaker 2: No. Speaker 1: Okay. Speaker 2: With, with the rest of the hospital, I mean, not conflicts, but you know, disagreements, in management style. Speaker 1: So were these disagreements in management style resolved. Were they resolved? Speaker 2: Yeah, it's always resolved.	tx compared to colleagues, disagreements (professional)
	1001	It's hard to say. To be honest, it's not exactly the same, but I understand. The mechanism is similar. I never use that example, liver transplant and relapse in alcohol use, as an example to my patients, but I think they are similar. To my knowledge, if a patient has no sign of quitting alcohol, the liver transplant will be contraindicated. That's based on my knowledge in my past in my training. But I think even though we have never made it clear in our practice to an endocarditis patient who has no plan of quitting the drug use – but I think eventually there will be an overall consensus, you know?	commitment to recovery, liver vs heart, protocol, disagreements (professional), contract
	1001	Interviewer: What's your sense about how you approach and treat patients who inject drugs in comparison to your colleagues? Respondent: I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own	tx compared to colleagues, lack of resources, protocol, disagreements (professional), risk evaluation, save lives, tx compared to broader

		opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	
	1001	Interviewer: Have you ever personally experienced conflict with your team or other staff members in working with these patients? If so, how was it resolved, and what was the outcome? Respondent: I don't think so. Yeah, I am more interested in taking care of a patient surgically, but I know it's a challenging process. So I have been relying on the specialists who help me take care of these patients. So there are things I don't know, and try not to interfere there in the area where I have not much knowledge.	support for surgeons, lack of knowledge, disagreements (professional), collaboration with addiction medicine
	1004	R: What is your sense of how like your approach to treating patients who inject drugs with infective endocarditis, compared to like, other people, other surgeons here at Tufts, or other surgeons around the country? I: I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	tx compared to broader, tx compared to colleagues, disagreements (professional), collaboration with addiction medicine, regional differences
	1005	No, I think there's two of us on staff that do the majority of this work. One of our surgeons isn't as comfortable with valve operations, so naturally he doesn't do as many endocarditis operations as others of us do. Some of our junior staff aren't as comfortable with the reoperations or the aortic roots. We just pass these patients amongst ourselves if we feel like they need to be treated by a different surgeon.	disagreements (professional), support for surgeons

	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues
	1012	Are there professional society guidelines on this issue? Um. The ones that I am aware of are pretty wishy washy, they're not, you know, they don't guide us as to everybody gets one valve and after that no more, that's a personal and a programmatic decision on how aggressive to be with patients that continue to um use IV drugs and continue to get infection.	protocol, disagreements (professional), lack of resources, deservingness, reinfection, relapse
	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive

		he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	
	1005	No, I think there's two of us on staff that do the majority of this work. One of our surgeons isn't as comfortable with valve operations, so naturally he doesn't do as many endocarditis operations as others of us do. Some of our junior staff aren't as comfortable with the reoperations or the aortic roots. We just pass these patients amongst ourselves if we feel like they need to be treated by a different surgeon.	disagreements (professional), support for surgeons
	1017	I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point.	disagreements (professional)
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group

		change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	
	1004	I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	disagreements (professional), tx compared to broader, tx compared to colleagues, collaboration with addiction medicine
	1016	Do you and your team every get into conflict about a certain patient case or anything? S: Yeah, we have, we have discussions about it. Um, for sure. Um, and I think having, we have that multidisciplinary meeting, or we have a valve meeting on BLANK morning, and it's been really great in cases, um, where we've gotten both addiction psychiatry and infectious disease there to have a group discussion, on some of those complex cases where you're not really sure what to do.	disagreements (professional), multidisciplinary group
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries

		supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID
	1012	So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them hemodynamically unstable and it's just not safe.	withdrawal management, pain management, collaboration with addiction medicine, multidisciplinary group, disagreements (professional), paternalism, defensive
	1015	I: Ok. Have you ever experienced conflict within your team or other staff members about this… S: No. Because at the end of the day, it's whatever you want to do as, you know, the surgeon treating the patient, so, no one is going to fault you, um, so… I'll leave it at that.	disagreements (professional), accountability

	1015	To close, is there anything I haven't asked you about that you would like to say? S: Uh…I think that, um, people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	liability of medical professionals, disagreements (professional), multidisciplinary group, frustration, accountability
	1013	Have you ever experienced conflict within your team or other staff members and if so how was it resolved? So certainly, there have been instances where one member of the team declines to operate on a patient and I or someone else agrees to operate. But I don't see that as a conflict. This is such a difficult question that I think every person has to answer for themselves. And we never, I have never seen a situation where one surgeon says I don't want to operate and another surgeon gave them a hard time, or told them they were wrong, told them that they were immoral or anything like that. I think everyone appreciates how incredibly complex this problem is.	tx compared to colleagues, disagreements (professional)
	1002	Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	commitment to recovery, deservingness, frustration, futility, risk evaluation, tx compared to colleagues, disagreements (professional)
	1002	Conflicts? I don't think so.	disagreements (professional)
	1005	Interviewer: Have you experienced conflict within your team or with other staff members? I think this is regarding approaches to these types of patients? Interviewee: No, I think there's two of us on staff that do the majority of this work. One of our surgeons isn't as comfortable with valve operations, so naturally he doesn't do as many endocarditis operations as others of us do. Some of our junior staff aren't as comfortable with the reoperations or the aortic roots. We just pass these patients amongst ourselves if we feel like they need to be treated by a different surgeon	support for surgeons, disagreements (professional)

	1009	How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	disagreements (professional), accountability, frustration, multidisciplinary group, follow-up care, societal issue, desired changes
Disassociation Secondary			
	1012	Have you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	disassociation (secondary), paternalism (secondary)
	1012	This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	disassociation (secondary)

	1012	I believe you already answered this but are there any guidelines or standards of care used at your hospital when assessing these patients? The surgical guidelines are following the treatment of endocarditis and they are not focused on IV drug users they are when do you operate on endocarditis in general and that has to do with the type of organism, how big the lesion is, whether or not there has been a neurologic injury, there's a list of criteria and that is what we follow in general. We have not come down on hard and fast rules about who gets surgery and how many times. I think we have left that to the discretion of the individual surgeons.	disassociation (secondary)
	1009	Interviewer: Mortality, is that something, or does it impact what type of valve you might give them? Surgeon: Mortality from the sense of the operation? Interviewer: Mm-hmm. Surgeon: It's something you think about. You always want to offer and operation where you think there's a mortality benefit, that they have a better chance of living with the operation than without. Sometimes, you know, questions of futility come into play but that comes into play later rather than the initial evaluation. Interviewer: Can you say more about the futility piece? Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if you fix the heart, they're never going to return to a quality of life. Other times there are complications that have arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	prioritization (secondary), disassociation (secondary)

	1009	Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	disassociation (secondary), rigidity (secondary)
	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation,	blame (secondary), disassociation (secondary), responsibility (secondary), rationalization (secondary)

		they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	knowledge, SUD treatment, medical model, disassociation (secondary)

	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	redemption (secondary), rigidity (secondary), disassociation (secondary)

	1009	Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	responsibility (secondary), disassociation (secondary)

		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1009	Interviewer: Do you think that treatment for endocarditis and people who inject drugs will change in the future? Surgeon: In terms of surgical management? Or? Interviewer: Yeah. Surgeon: No. I think the operations are pretty standard. In the absence of new antibiotics that are much more effective, I think it's still going to be the same. I think you operate on patients with heart failure and mechanical complications. Interviewer: What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think	blame (secondary), disassociation (secondary)

		unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	
	1009	Interviewer: And some hospitals convene a multidisciplinary group to evaluate people who inject drugs before their valve replacement. Does this hospital do that? Surgeon: No. Interviewer: Is that something you'd like to see? Surgeon: It probably wouldn't matter. Who's in the multidisciplinary group, right? Interviewer: Who do you think should be? Surgeon: I mean, really, when I have patients I speak with the Infectious Disease doctor and the cardiologist. The ultimate decision on whether the patient gets an operation is based on the surgeon, regardless of what the Infectious Disease doctor or cardiologist say. I think when these groups get together I think they spend an hour talking about nothing. You can get to the heart of the matter very quickly and so it would probably be a waste of – you know, there's not enough hours in a day to sit through an hour-long meeting. I think you can really get to the heart of the matter in terms of what needs to be done in just a few minutes.	disassociation (secondary), collaboration (secondary)

	1009	Interviewer: Are there any guidelines or standards of care used this hospital when you're assessing people who inject drugs for valve replacements? Surgeon: No. I mean, there's no guideline on what to do if someone who injects drugs. The guidelines are based on a patient's medical condition and in terms of whether you think they need an operation or not. Do they have an indication but the guidelines – no guideline will every say you have to operate because surgical guidelines always incorporate surgeon judgment. You can have someone that you think has an indication for surgery but that you feel is not indicated for X, Y or Z reasons, or is futile. And so there's nothing that ever says you have to in the surgical guidelines for endocarditis.	rigidity (secondary), disassociation (secondary)
	1006	Interviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	disassociation (secondary), rationalization (secondary)
	1002	I don't know. I don't have that much knowledge, except for the surgical part.	disassociation (secondary)
	1002	What's the benefit of doing the training? I'm happy to do it, but the amount of time – what's the rush now of doing the training events?	disassociation (secondary)
	1002	Interviewer: What do you think about the term drug rehab? Respondent: I don't know. [Laughs] I mean, I'm not so interested in those patient care – except for the surgical part. So I'm not so interested in those. Interviewer: Do you think that drug rehab is different than drug detox? Respondent: I don't know. No comment.	disassociation (secondary)

	1002	Interviewer: How should Katy, the patient that we were talking about – how should her opiate use disorder be treated? Respondent: I don't know.	disassociation (secondary)
	1002	Respondent: I don't have that much experience, so I don't know. Interviewer: If someone is experiencing withdrawal, would that make you more or less likely to operate? Respondent: I don't know.	withdrawal management, disassociation (secondary)
	1002	Interviewer: Sometimes people will compare individuals who require valve replacements who have endocarditis to someone who is an alcoholic and needs a liver transplant. Do you think those two examples are similar or different? Respondent: No, I think they're different. Interviewer: Different examples? Respondent: Yeah. Well, it's [unintelligible 00:14:10]. Interviewer: Why do you consider it different? Respondent: It's totally different. The heart and kidney [are] totally different, and then alcohol infection – those are different.	disassociation (secondary)
	1002	Interviewer: All right, so going back to Katy. Now you're considering the medical management of the prosthetic valve endocarditis. What do you think about these three options? Should you give Katy a PICC line and send her home? Should you give her a PICC line and have her stay in the hospital? Or should you give her a PICC line and have her go to a nursing facility? Respondent: Oh, so she's getting a PICC line for sure? Interviewer: Yes, she's getting a PICC line. Respondent: The nursing. Interviewer: The nursing? Okay. Do you think that's the safest option? Respondent: I think so. Interviewer: Do you consider other things, like if she has housing or transportation?	disassociation (secondary)

		Respondent: I don't know.	
	1011	Would you want to receive more training on this? In my current situation I feel very well supported by the teams that we have put together. I think that what that allows me to do is to focus on what I need to do, and I can completely rely on them to, let them do what they do best.	disassociation (secondary)
	1016	I: Yes, so talking about pain management, how knowledgeable do you feel about the drugs available, um, or available treatments for people who use drugs? S: Um, I feel somewhat knowledgeable, um, I'm also, as the attending surgeon, I'm not the prescriber of any medications, so usually the person ordering, it's going through the nurse practitioners and the ICU.	disassociation (secondary)
	1016	I: What are some of the available treatments for opioid use disorder? I know that you said you don't really prescribe them, and do you want to receive more training on this sort of thing? S: Um, I think what would be more practical is having my team, who is actually doing the prescribing, the nurse practitioners, receive more training.	disassociation (secondary)
	1016	I: Tell me about your experience with managing pain in this population. S: Um, we touched on this a little bit, but, um, I, I don't, as, kind of, the attending surgeon, I leave that to my team, um, so I'm not directly involved with pain management. I: Um, do you know what the nurse practitioners have found that works to treat pain or what doesn't work? S: Truthfully, I don't know. We have everything from the, the PCAs, um, which I feel like the	disassociation (secondary)

		patients like a lot. The issue is that, it's always very hard to wean them off the PCAs. And then, uh, a combination of, in general, we use oxycodone here.	
	1016	I: Yeah, and that was helpful for the patient, that was able to control their pain? Did they have to have, like, any additional medicines? S: I don't know, I can't remember off the top of my head, if he was supplemented with additional medications, um, or if it maybe reduced the amount of additional medications that we needed. Um, in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners pre	collaboration (secondary), disassociation (secondary)
	1016	I: Tell me about your experience with managing withdrawal in this population? Again, it might be the same as before, but… S: Um, I would say that I actually don't see much in the withdrawal space, because usually the patients come in and are in the hospital for a little while before they, um, before they, kind of, go to surgery, so it's usually more the ICU that is managing that or the floor. I: With the withdrawal experience maybe you have had in the past, does it affect your ability to operate or manage their pain? S: Um, I can't really answer that.	disassociation (secondary)
	1004	How knowledgeable do you feel about the available treatments for people who use drugs? Not very, there's methadone and suboxone. I don't want to receive more training on this, I don't have the time or the interest.	disassociation (secondary)
	1004	No idea, if she has the operation, she's agreed to the contract to enter treatment. I don't know anything about medications or psychotherapy.	disassociation (secondary), rigidity (secondary)
	1004	They require high doses, so I speak with the pain services. I don't know enough about pain	disassociation (secondary), collaboration (secondary)

		management, their tolerance is so high that I don't know what they need	
	1004	Zero: if the person is actively in withdrawal I will not operate, it's too risky	disassociation (secondary), rationalization (secondary), rigidity (secondary)
	1004	What about after the surgery? Would a PICC line and sending a patient home be fine? Yes, that's the best way to get antibiotics. There's no point in keeping them in the hospital, we can't afford that. Though if they wanted to go to a nursing facility afterwards, I'd have no objection to that. The best option for the patient would be whatever Dustin recommends, in terms of relapse risk.	collaboration (secondary), disassociation (secondary)
	1004	No, I don't think that the treatment will change. This disease is one where prevention is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	blame (secondary), disassociation (secondary)
	1004	If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato. And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	rationalization (secondary), disassociation (secondary)
	1015	I: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	collaboration (secondary), disassociation (secondary)

	1015	I: Ok. Tell me about your experience with managing withdrawal in this population? S: Honestly, I don't manage a lot of that, because it is either something they have already gone through or, you know, they've got a breathing tube in and it's not something that I've dealt with.	collaboration (secondary), disassociation (secondary)
	1015	I: If it was 5 years since she last used drugs? S: And she's now using again? I: She is not using. S; Oh. It wouldn't change anything. I: Ok. Let's see…Does the time period between endocarditis episodes change whether you would or wouldn't do the operation? S: Uh…it's hard to say. I mean, I don't see a lot of the people who come back that often because they go to other services, so…	disassociation (secondary)
	1015	I: Yeah, sorry… What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I don't necessarily share that opinion in every case, but I do see the rationale in it, so…	disassociation (secondary)
	1015	I: Ok. Have you ever experienced conflict within your team or other staff members about this… S: No. Because at the end of the day, it's whatever you want to do as, you know, the surgeon treating the patient, so, no one is going to fault you, um, so… I'll leave it at that.	disassociation (secondary)
	1007	Speaker 1: Okay. And are there any professional society guidelines that you also follow? Speaker 2: Um, we don't follow any particular we follow just universal precautions and try to be careful.	disassociation (secondary)

	1007	So you operate on Katie from the first vignette and she does well, she's linked to a Methadone maintenance program. About one year later, she's back to the hospital and she has prosthetic valve endocarditis. So have you seen prosthetic valve endocarditis in people who inject drugs? Speaker 2: Yes. Speaker 1: Okay. Any specific cases come to your mind? Speaker 2: Too many there. Speaker 1: Tell me your thoughts about management decisions for these relapse cases. Speaker 2: Well, I mean we manage them the same as any other patient. You um, you know, assessing the risk, the benefit, surgery, support system. Speaker 1: Okay. So does it impact your decision to operate if the endocarditis is related to drug use? Speaker 2: Yeah, everything impacts our decision to operate.	prioritization (secondary), disassociation (secondary)
	1007	Speaker 1: Um, any specific things that help you choose like housing, insurance, job status and child do this impacts your decision? Speaker 2: Everything impacts	disassociation (secondary)
	1007	Speaker 1: Okay, would your approach change if you learned that Katie presented with prosthetic valve endocarditis and she was pregnant? Speaker 2: Would I what? Speaker 1: Would your approach change if you learned that Katie presented to the… Sparker 2: Of course. Everything impacts	disassociation (secondary)
	1007	Speaker 1: Um, how about if she injected cocaine but did not inject heroin? Speaker 2: Everything Speaker 1: So it changes. And then if she had used drugs, if the last time she used drugs was five years ago, does that also, Speaker 2: Everything affects the decision. Speaker 1: Okay, so does the time period between endocarditis… Speaker 2: I'm not saying… I don't know if… I don't want to rewrite your questions. Speaker 1: Yeah. Speaker 2: We're not saying we would refuse blindly or, or, or, or operate blindly on any of these situations. I'm just saying that everything affects it. I mean,	risk evaluation, disassociation (secondary)

	1007	Speaker 1: Um, does the time period between endocarditis episodes change whether you would operate or not? Speaker 2: Meaning like a prosthetic valve infection? I don't know the question you were saying. Speaker 1: So it's just a follow up on the previous question. And it says, does the time period between endocarditis episodes change whether you would do the operation? Maybe shorter time period versus longer. Speaker 2: Everything affects it. If somebody gets infected, um, two months later, it's a very difficult operative situation versus two years later. So everything affects it.	disassociation (secondary)
	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration (secondary), blame (secondary), disassociation (secondary)
	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	collaboration with addiction medicine, support for surgeons, PICC line risk, administration, blame (secondary), disassociation (secondary)
	1008	Interviewer: Okay. Cool. And how knowledgeable do you feel about the available treatments for people who use drugs? You know, like available treatment for opioid use disorder or something?	disassociation (secondary)

		Respondent: I refer to the -- there's the -- that team-- that does this. I refer everybody to them.	
	1008	Interviewer: Okay. Can you tell me a little bit more about your experience managing pain in this population? You said like a little bit about it, but. Respondent: They just require a lot of medications. And they're in pain a lot. Because, you know, the receptors are down regulated, I think. Again, we get the experts involved to help manage that. Interviewer: There's a pain management service? Respondent: Yep. Yeah. Interviewer: Okay. What tends to work to treat their pain? Like what do they end up on usually? Do you know? Respondent: No. The usual stuff. I mean they give methadone. They give them all sorts of stuff and it's mainly narcotic-based, at least early on.	collaboration (secondary), disassociation (secondary)
	1008	Interviewer: Okay. Cool. And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	disassociation (secondary), rigidity (secondary)

	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	rigidity (secondary), disassociation (secondary)
	1008	Interviewer: Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school. Interviewer: So, who like -- I don't know. Who would need to make changes then? Everyone? Respondent: Everybody. Interviewer: Yeah. Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe	blame (secondary), rigidity (secondary), disassociation (secondary)

		them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	
	1013	How do you think the hospital could support you more in the care of patients who inject drugs? Uh, I think that uh throwing more resources behind the whole addiction medicine effort. I think that um, I think there is a lot of ground to be gained there and I think that we need to continue to strive to be national leaders in that	collaboration (secondary), disassociation (secondary)
	1013	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not very knowledgeable. I really don't, um, I'm not qualified to prescribe the pharmacologic treatment for it, its not what I do.	disassociation (secondary)
	1013	Would you want to receive more training on this? To be honest with you um, probably not. Its kind of interesting to hear about at grand rounds but where I am in my practice, I don't even write post-op, I don't even write discharge medications for my patients, the PAs do so understanding it to the degree that is necessary to incorporate it into our standard practice would be useful but the exact details I don't need to know	disassociation (secondary)
	1013	What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	lack of knowledge, collaboration with addiction medicine, disassociation (secondary)

	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness	disassociation (secondary), blame (secondary), redemption (secondary)
	1013	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Yeah, I think it is quite variable. Surgeons here, and we have certainly not mandated one approach. I think that there are a number of people who feel the way I do, there are some who are much more reluctant to operate.	responsibility (secondary), disassociation (secondary)
	1014	S: It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	prioritization (secondary), SUD (secondary), disassociation (secondary)

	1014	S: She's young. You gotta give her a shot. You can't waffle here, because right now her, to have a serious conversation with her at this point is out of question. She is in shock. The valve needs to be fixed. Mechanical problem that needs a mechanical solution. Unfortunately, you know, it is going to be a little bit more, uh, technically demanding and this is not a straightforward AVR, probably a root replacement, and to see what her outlook looks like on the, on the addiction, uh, on the addiction level is, is not, we don't have time to talk to her. We just have to operate on her. She's too young, can't let her go.	prioritization (secondary), disassociation (secondary), SUD (secondary)
	1014	I: Gotcha. How knowledgeable do you feel about the available treatments for people who use drugs? S: To a certain extent. You know, I mean, I mean, what do you mean treatments? I: Um, like, how knowledgeable are you about, like, methadone programs and treatment programs? S: I can, I can, you know, a little bit, but I, for me, all I need to do is to be the bridge to connect them with the right people, but I can't, I can't just have a deep, deep discussion.	disassociation (secondary), collaboration (secondary)
	1014	Um, try to educate the patient as much as we can, but again, you're talking to the wrong guy. We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over.	disassociation (secondary), SUD (secondary), collaboration (secondary)
	1014	S: Yeah, I remember, I did not operate on them the first time around, one of, one of our my partners did. And, you know, and sometimes, those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes	disassociation (secondary), rationalization (secondary), blame (secondary)

		you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her through a big operation and go back to square one down the road? When is enough? When enough is enough?	
	1014	I: Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions. How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the	redemption (secondary), rationalization (secondary), disassociation (secondary)

		guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that. Am I confusing you?	
	1001	The valve surgery certainly carries the different level of risk. So each value has different technical difficulty or aspect. For example, mitral valve – the surgery would be more challenging than aortic valve surgery. The [redo] surgery will be more difficult than the first-time operation. So I would say everybody is different. Every patient is different. So we will not know the patient's individual risk for surgery until we complete their preop testing and evaluation.	disassociation (secondary), prioritization (secondary)
	1001	We've been waiting to take on the [tough] cases, the patients who are not covered. Certainly this is not just our problem; this is society's issue. It's going to be the focus. I don't think there's anything that could be done better so far.	disassociation (secondary)
	1001	I almost routinely consult, yeah. So the two services – this is why I would hope there would be a program here. That way there would be a multidisciplinary care on each single patient who has such a history, but currently we have to call the individual [consult service] – for example, the drug addiction service and psychiatry. I cannot [tell you] how much they are able to help if they are willing, just because this group of patients always is challenging to everybody. So I think overall we are doing the best we can.	collaboration (secondary), disassociation (secondary)
	1001	Rehab? I don't know. It all depends. You know, every place is different. We have good experiences and bad experiences with rehab. So I cannot really comment. I know only even though this is not 100 percent, we can manage the patient in the hospital. We can provide the	disassociation (secondary)

		best care they can get, but I just cannot comment on if they can go to rehab. Theoretically they can, if the rehab place is a fair facility.	
	1001	To be honest, I really don't know the [outer perspective of our practice]. So there will be the case management and social workers who help with those perspectives. I make decisions based on a patient's own medical need. There will be other care that we have to consider, but gladly we have specialists to help us out.	collaboration (secondary), disassociation (secondary)
	1001	I don't think so. Yeah, I am more interested in taking care of a patient surgically, but I know it's a challenging process. So I have been relying on the specialists who help me take care of these patients. So there are things I don't know, and try not to interfere there in the area where I have not much knowledge.	collaboration (secondary), disassociation (secondary)
	1001	I'm not sure if we have an official team. I think we've been talking about it for some time. Since I'm not taking care of a lot of these patients [off-mic], I may take care of an endocarditis patient once or twice a year. It's just not my own personal interest. So I'm not aware if we have a formal, interdisciplinary team, but certainly the process is something that requires a team approach. And that's being done, but I just don't know if we officially have such a team.	collaboration (secondary), disassociation (secondary)
	1010	Tell me about your experience with managing withdrawal in this population. We don’t quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don’t quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don’t know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	collaboration (secondary), disassociation (secondary), rigidity (secondary)
	1001	I have some knowledge, but I rely on the specialist – that you help me take care of those patients.	disassociation (secondary)
	1001	Rehab? I don't know. It all depends. You know, every place is different. We have good experiences and bad experiences with rehab. So I cannot really comment. I know only even though this is not 100 percent, we can manage	disassociation (secondary)

		the patient in the hospital. We can provide the best care they can get, but I just cannot comment on if they can go to rehab. Theoretically they can, if the rehab place is a fair facility.	
	1001	I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	disassociation (secondary), responsibility (secondary)
Discussing Addiction			
	1010	What are your first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see how they ended up down that path.	priorities, patient story, empathy, discussing addiction
	1010	t does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for	age, accountability, commitment to recovery, follow-up care, second chance, paternalism, discussing addiction, post-operation care

		mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	support for patient, patient story, discussing addiction, stigma , societal issue, empathy
	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug	discussing addiction, post-operation care, mechanical problem, lack of knowledge, SUD treatment

		addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job	
	1019	So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would… I would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, post-operation care, SUD treatment, discussing addiction, follow-up care, deservingness, perception of risk in PWID, paternalism

	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	discussing addiction, collaboration with addiction medicine, SUD treatment, lack of knowledge
	1019	would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, timing of SUD tx, post-operation care, discussing addiction, paternalism

	1008	Have you ever discussed the drug use with a patient like this? You know, like what kinds of questions would you ask? Respondent: Oh, every case. Interviewer: Okay. Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	pre-operation care, patient consent, discussing addiction, deservingness, paternalism, accountability
	1002	Yes, but at the same time you need to make sure what other kinds of drugs they use. I would just ask really what they're using.	discussing addiction
	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	discussing addiction, collaboration with addiction medicine, SUD treatment, lack of knowledge
	1019	would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And…	pain management, timing of SUD tx, post-operation care, discussing addiction, paternalism

		and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability
	1016	: And how did you approach the case? S: Um, in that case, um, the patient was brought to the operating room and had, um, um, reconstruction of their root and valve. I did have an extensive preoperative conversation with the family members, um, and, um, the patient, regarding the risks of the surgery, um, and that the importance of refraining from drugs afterwards.	priorities, patient consent, discussing addiction
	1016	I: Have you ever discussed drug use with a patient like this? You kind of mentioned that, yeah. You have. If so, what questions do you ask when talking about that? S: I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting substance abuse help. Um, and so I'm very up front with that in addition to the risks. This particular case, I'm not sure you will get to this in the interview, is in the aortic valve position. I think that, um, we look at things a little bit different if it is on the left or the right side of the heart, in terms of when we go to surgery	discussing addiction, deservingness, risk evaluation, left vs right side

		and how aggressive we are. I: Have you ever heard the term opioid use disorder or used it when talking with patients? S: Um, I've seen it documented in the chart, I don't, I've never specifically used that terminology.	
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	discussing addiction, support for patient, patient consent, patient story, commitment to recovery, empathy
	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1002	Interviewer: Yeah. When you had a patient like this, like Katy from the vignette, did you ever discuss drug use? Respondent: Yeah, we made sure to. We just need to make sure to discuss this drug use before going to surgery, because that's probably the cause of these things.	pre-operation care, perception of risk in PWID, discussing addiction

	1002	Interviewer: Okay, and what kind of questions do you ask? Respondent: What kind of questions? The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	discussing addiction, lack of resources, patient consent, support for patient
	1002	Interviewer: What terms do you use to talk about addiction? For example, do you ever use terms like opiate use disorder to describe addiction? Respondent: Yes, but at the same time you need to make sure what other kinds of drugs they use. I would just ask really what they're using.	discussing addiction
	1007	Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, patient consent, support for patient, follow-up care, SUD treatment
	1007	Have you ever used the term opioid use disorder when speaking with patients of this sort? Speaker 2: Occasionally, Yea. Speaker 1: Okay. Speaker 2: Is this hard to keep track because there's all… the names keep changing.	discussing addiction, changes over time, lack of knowledge

	1007	Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	collaboration with addiction medicine, knowledge, discussing addiction, societal issue
	1007	Okay. Would you like to receive more training on, you know, medications used to treat opioid use disorder or do you think you're, would you like to receive it? Speaker 2: Sure! We could always learn.	knowledge, discussing addiction, training
	1017	Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway.	discussing addiction, changes over time, commitment to recovery, patient consent, collaboration with addiction medicine, protocol, deservingness
	1013	Um, so probably my first question that I ask is whether they are still using or not so the first thought is where are they in the, so I think of their drug use as the primary condition that we are managing and that the valve infection is a secondary consequence really of the what the underlying condition is. So, its where they are in the spectrum of that, So its just like when I'm asked to see a patient who has cancer who also has valve disease the first question I have	priorities, discussing addiction

		in mind is do they have metastatic cancer with 6 months to live, do they have an indolent prostate cancer that can go for years and years and years, where are they with their primary condition.	
	1013	Have you ever discussed drug use with a patient like this? Sure. If so, what questions did you ask? Well one question is do they intend to quit. And surprisingly sometimes patients say no I like using and I am going to continue to use. That is pretty uncommon but it will happen every now and then. What are some of the terms you use to discuss addiction? For example, have you heard of the term opiate use disorder or used it when talking to patients? I've heard the term; I probably don't use it when I am talking with a patient. When I talk with a patient directly its like we are talking here, I'd say using intravenous drugs. Using intravenous drugs is a threat to your life, you are going to continue to get infections. If we do this operate and put in an artificial valve and if you continue to use intravenous drugs the new valve is going to get infected. That's sort of that's how I would imagine that conversation to go	discussing addiction
	1013	Tell me about your experience with managing pain in this population. So, we get the pain service involved and it's a real challenge because they feel genuine pain, their threshold is lower and it is extremely hard to control their pain and so you have to rely a lot on non-steroidal agents, that kind of stuff What works or doesn't work to treat their pain in your experience? So Toradol [works] but it's a real challenge. And when I see somebody who's had that problem pre-op I warn them about it.	pain management, pre-operation care, discussing addiction
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the	support for patient, post-operation care, SUD treatment, save lives, follow-up care, discussing addiction, multidisciplinary group

		surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy
	1003	If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive. So then, you could have a live patient to have this discussion with. So, first and foremost, is to save the patient's life, so I'd recom – I would put the patient on a schedule, no matter what the social situation is, because I mean, we're here to help people and even you know, if she doesn't have surgery, she's going to die. So, that would be my approach.	patient consent, save lives, empathy, discussing addiction
	1003	What are some of like, the terms that you would use to discuss her addiction? Respondent: Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake.	commitment to recovery, discussing addiction, patient consent, patient story, follow-up care

	1003	Respondent: Well, I would like to see his efforts supported. Right now, he's the only one we have. I think – this is going to - I want the hospital to support him. In terms of me, my efforts, well I've got no major issues there. I mean, if I book someone up for surgery, then I don't [meet] any resistance from the hospital. They, you know, they don't – they trust our judgement about who needs an operation, and then our job to do a – execute, and do a good operation. So not particularly. I don't have any outstanding conflicts with the hospital in terms of support for the program.	collaboration with addiction medicine, support for surgeons, administration, discussing addiction, multidisciplinary group
	1009	Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around. Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I	accountability, discussing addiction, protocol, futility, medical model, paternalism, patient story

		just say if you use any sort of, you know, if you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on him twice and it came out that he doesn't care about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn't have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1009	nterviewer: I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration with addiction medicine, discussing addiction, frustration, futility

	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now.	discussing addiction, patient consent, futility, commitment to recovery
	1011	What questions do you ask? Charlie, what drugs were you using? When was the last time you used it? Have you tried quitting in the past? And then I ask them what their social support system is because I think that is what is going to prevent them from using drugs again.	discussing addiction, support for patient
	1011	Sure. What are some of the terms you use to discuss addiction? Have you ever heard of the term opiate use disorder or used it when talking with patients? So, I don't know what terms I would use. I would ask about addiction and detoxing centers and maintenance therapy, you know, deaddiction programs and stuff, so more in those setting. The opiate use disorder, I am sure I have used some variation of that phrase.	discussing addiction, SUD treatment
	1011	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? I think they're, I think it's a reasonable comparison if you were to think about it in terms of disease and the treatment in the sense that uh, that the disease is not valve failure, that is the symptom of the problem that the patient is facing, the real problem is their drug abuse thing.	liver vs heart, discussing addiction
	1011	I think this truly needs a multidisciplinary approach to this. Surgery is just one point; most surgeons' offices are not geared towards long term follow up they are not geared toward addiction management they are not geared towards drug rehab programs which is where a lot of support is required either other disciplines or other avenues in society. These patients they have a serious disease problem, the example that you gave about alcoholism, or cancer is more true than not, its not the valve that is the problem, the disease is the addiction.	multidisciplinary group, discussing addiction, follow-up care

	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1013	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? What are my first thoughts? Um, so probably my first question that I ask is whether they are still using or not so the first thought is where are they in the, so I think of their drug use as the primary condition that we are managing and that the valve infection is a secondary consequence really of the what the underlying condition is. So, its where they are in the spectrum of that, So its just like when I'm asked to see a patient who has cancer who also has valve disease the first question I have in mind is do they have metastatic cancer with 6 months to live, do they have an indolent prostate cancer that can go for years and years and years, where are they with their primary condition.	priorities, discussing addiction
	1013	Have you ever discussed drug use with a patient like this? Sure. If so, what questions did you ask? Well one question is do they intend to quit. And surprisingly sometimes patients say no I like using and I am going to continue to use. That is pretty uncommon but it will happen every now and then. What are some of the terms you use to discuss addiction? For example, have you heard of the term opiate use disorder or used it when	discussing addiction

		talking to patients? I've heard the term; I probably don't use it when I am talking with a patient. When I talk with a patient directly its like we are talking here, I'd say using intravenous drugs. Using intravenous drugs is a threat to your life, you are going to continue to get infections. If we do this operate and put in an artificial valve and if you continue to use intravenous drugs the new valve is going to get infected. That's sort of that's how I would imagine that conversation to go	
	1015	I: Have you ever discussed drug use with a patient like this? S: Yes. I: And what sort of questions did you ask? S: What kind of drugs do you use? How do you use them? Have you ever tried to stop? Um, have you ever tried to, uh, and then risk factors, you know, find out about their risk factors and if they have ever had treatment? I: Ok. Um, have you ever heard the term opioid use disorder or used it when talking with a patient? S: I've heard it. I've never used it in talking to them.	discussing addiction
	1015	Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Um, it is hard to predict, but maybe, just like everything else in medicine. I: Are there any changes that you want to see? S: Uh, I think honestly the change is going to start not with, uh, the disease, it's going to start with the disease of IV drug use and opioid use. It's not going to, I don't think the change is going to come from people who have already been infected. I: Who do you think need to make the changes in the treatment for…? S: I think it is a public health problem. I don't, the change can come from doctors, but I think the changes need to come from the companies that, um, promote this kind of behavior. Or, not, I shouldn't say that, promote, easy, um, access to opioids. I: And how much time do you think is needed for these changes? S: Oh, at least, uh, one generation. At least one generation.	changes over time, desired changes, societal issue, discussing addiction

	1007	Speaker 1: Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, follow-up care, patient consent, post-operation care, risk evaluation, societal issue
	1007	Speaker 1: Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	SUD treatment, collaboration with addiction medicine, discussing addiction, societal issue
	1001	Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	perception of risk in PWID, discussing addiction, save lives, prevalence of endocarditis
	1001	In this group of patients, if they continue the IV drug use, their lifestyle – the future reinfection will be very high. The surgical risk is high enough, and [in this moment] the cardiac surgeon's performance is carefully monitored by this society. So we're very concerned about our operative outcome. So I think if there is a high likelihood the patient would be back on	perception of risk in PWID, liability of medical professionals, discussing addiction, reinfection, relapse, administration

		the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	
	1001	Respondent: Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, risk evaluation, discussing addiction, patient consent, liability of medical professionals, knowledge, contract
	1001	will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of reinfection will be coming, and that would be even wors	commitment to recovery, accountability, discussing addiction, paternalism, reinfection, priorities, risk evaluation
	1001	Interviewer: All right, and what terms do you use to discuss addiction? Do you ever use opiate use disorder or other terms? Respondent: No, I don't. I just use 'drug use.' That clearly means the patient has been taking heroin or cocaine. I don't think there is a recommendation or anything clear at this point. I think it's nothing to do with the self – and then [identify the gender] is a separate issue. I simply just say you should stop using those drugs. I get to that point. Yeah, that's what I want to hear from the patient.	discussing addiction, priorities
	1004	R: It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	commitment to recovery, deservingness, discussing addiction, priorities, support for patient, risk evaluation
	1004	I: how do you discuss drug use with a patient like this? Like what questions do you ask? What are some of like, the terms that you would use to discuss her addiction? R: Are you willing to stop using? Promise me that you'll stop using, that you'll do rehab. And if they come back, I wouldn't do it. That's	discussing addiction, commitment to recovery, patient consent, paternalism, contract

		pretty much what I say to patients around their addiction.	
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	stigma , discussing addiction, liver vs heart, deservingness, frustration, futility
	1004	R: Would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? I: Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation	commitment to recovery, stigma , pregnancy, perception of risk in PWID, frustration, discussing addiction, futility
	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1005	Interviewer: Have you heard of the term opioid use disorder or used it when talking with a patient? Interviewee: Yes, I've heard of that term, but I haven't used that term with a patient.	discussing addiction

	1005	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, discussing addiction, frustration, post-operation care
	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	paternalism, deservingness, accountability, commitment to recovery, discussing addiction, frustration, futility, multiple surgeries, second chance, stigma
	1008	nterviewer: Okay. What are some of the terms that you use to discuss the addiction? Respondent: The terms? Interviewer: Yeah. Respondent: Injection, injecting IV drugs. Interviewer: Yeah. Respondent: I mean what else -- that's what it is. And that's what most people call it. I don't call it shooting up or -- but, yeah, using drugs, IV drugs, injecting drugs. That sort of thing.	discussing addiction

	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, commitment to recovery, contract, accountability, paternalism, deservingness
	1012	ave you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it,	empathy, discussing addiction, support for patient, training, mechanical problem, societal issue, save lives

		but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes.	discussing addiction, commitment to recovery, accountability, frustration, futility, patient consent, contract
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability
	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration

	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1005	Interviewer: Have you heard of the term opioid use disorder or used it when talking with a patient? Interviewee: Yes, I've heard of that term, but I haven't used that term with a patient.	discussing addiction
	1005	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, discussing addiction, frustration, post-operation care
	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1004	It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive	commitment to recovery, deservingness, desired changes, discussing addiction, priorities

		family, has she been hospitalized before for her substance use or for her endocarditis?	
	1004	R: Are you willing to stop using? Promise me that you'll stop using, that you'll do rehab. And if they come back, I wouldn't do it. That's pretty much what I say to patients around their addiction.	commitment to recovery, discussing addiction
	1004	Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation.	pregnancy, commitment to recovery, discussing addiction, frustration, futility, stigma
	1016	Um, in that case, um, the patient was brought to the operating room and had, um, um, reconstruction of their root and valve. I did have an extensive preoperative conversation with the family members, um, and, um, the patient, regarding the risks of the surgery, um, and that the importance of refraining from drugs afterwards. I: Looking back, is there anything different that you would change about your approach? S: Uh, in that particular case, um, no. The outcome was good.	patient consent, discussing addiction, priorities
	1016	I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting substance abuse help. Um, and so I'm very up front with that in addition to the risks.	stigma , deservingness, discussing addiction
	1016	Have you ever heard the term opioid use disorder or used it when talking with patients? S: Um, I've seen it documented in the chart, I don't, I've never specifically used that terminology.	discussing addiction
	1016	how would you feel about operating on someone who used to use drugs 10 years ago, gets prosthetic valve endocarditis after a dental procedure? S: I think that's a very different clinical situation. And, um, I think that that patient, you know, um, it's still risky in the sense that you're still undergoing the same challenges, and then you're still introducing narcotics again postoperatively for pain management, so I think that the counseling at the other, at the	time between operations, discussing addiction, pain management, perception of risk in PWID

		postoperative period is just as important in that second patient with the dental abscess. But it certainly makes my decision to replace the valve, um, a lot more straightforward	
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	commitment to recovery, discussing addiction, empathy, follow-up care, relapse, perception of risk in PWID, societal issue, second chance, support for patient
	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	discussing addiction, commitment to recovery, follow-up care, frustration, patient story, priorities, risk evaluation, societal issue, SUD treatment

	1012	Have you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	discussing addiction, medical model, save lives, desired changes, empathy
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes. Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging.	commitment to recovery, discussing addiction, frustration, accountability, patient consent, contract
	1015	I: And what sort of questions did you ask? S: What kind of drugs do you use? How do you use them? Have you ever tried to stop? Um, have you ever tried to, uh, and then risk factors, you know, find out about their risk factors and if they have ever had treatment? I: Ok. Um, have you ever heard the term opioid use disorder or used it when talking with a patient? S: I've heard it. I've never used it in talking to them.	discussing addiction, perception of risk in PWID

	1015	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Um, it is hard to predict, but maybe, just like everything else in medicine. I: Are there any changes that you want to see? S: Uh, I think honestly the change is going to start not with, uh, the disease, it's going to start with the disease of IV drug use and opioid use. It's not going to, I don't think the change is going to come from people who have already been infected. I: Who do you think need to make the changes in the treatment for…? S: I think it is a public health problem. I don't, the change can come from doctors, but I think the changes need to come from the companies that, um, promote this kind of behavior. Or, not, I shouldn't say that, promote, easy, um, access to opioids. I: And how much time do you think is needed for these changes? S: Oh, at least, uh, one generation. At least one generation.	desired changes, discussing addiction, changes over time, societal issue
	1010	There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see how they ended up down that path.	empathy, discussing addiction, knowledge, risk evaluation
	1010	Does a history of injecting drugs impact what type of valve you would choose? It does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point	discussing addiction, follow-up care, post-operation care, accountability, support for surgeons

		on this is a new beginning for the rest of their lives.	
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	discussing addiction, empathy, patient story, stigma , societal issue
	1014	I: Have you ever discussed drug use with a patient like Katie, in this scenario? S: After…in Katie, after the fact. If patients are stable, they come in, and they have a left-sided valve that's infected, mitral or tricuspid, and they don't have any MR, the vegetation is over, over an acceptable size, there's nothing humongous that could likely embolize and hurt them and have a stroke, yes, I talk to them and, we are not the experts. I talk to them as much as we know from our training and experience. We talk to them. More often than not, they tell us what we want to hear. "This is it. I will never do this again. I have a younger child, and I will never do that again. I promise." But I never make it, so…they're under the gun. They're sick, they're in the hospital, and you can't just, you know, box them in a corner and say, you gotta promise, I won't do this if you come back and infect…I tell them, I tell them	discussing addiction, empathy

		facts. But I try to make it, as much as I can, not a conditional conversation, meaning, you promise not to do this again, I will operate on you. Because, it's unfair, they're the patient, they're sick, they're in a bad spot, they're not doing well to begin with, they're using drugs, and for you to come in to be that overbearing on them, I think it is not the way you go. Having said that, if they are stable enough and they don't need an operation, I will say, we are going to send you home on antibiotics, I'll see you in a few weeks and repeat an echocardiogram to see if this thing is developing more, but so long as they are ok, antibiotics are the way to go, but you have to stop using. You know, under the gun, needing an operation, you cannot, there is no quid pro quo, I don't, they can, they will promise it, more often than not, I don't believe it, but you have to give them a shot. They're young.	
	1014	I: Have you ever heard the term opioid use disorder or used it when talking to your patient? S: I mean, I've heard about it, but I've never used it.	discussing addiction
	1014	I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data.	multidisciplinary group, data, discussing addiction
	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now. What questions do you ask? Charlie, what drugs were you using? When was the last time you used it? Have you tried quitting in the past? And then I ask them what their social support system is because I think that is what is going to prevent them from using drugs again.	discussing addiction, accountability, paternalism, SUD treatment

	1011	What are some of the terms you use to discuss addiction? Have you ever heard of the term opiate use disorder or used it when talking with patients? I don't know if I have used the exact phrase but generally I would… could you repeat the question? Sure. What are some of the terms you use to discuss addiction? Have you ever heard of the term opiate use disorder or used it when talking with patients? So, I don't know what terms I would use. I would ask about addiction and detoxing centers and maintenance therapy, you know, deaddiction programs and stuff, so more in those setting. The opiate use disorder, I am sure I have used some variation of that phrase.	discussing addiction, SUD treatment
	1002	Yeah, we made sure to. We just need to make sure to discuss this drug use before going to surgery, because that's probably the cause of these things.	discussing addiction, pre-operation care, risk evaluation
	1002	The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	discussing addiction, lack of resources, patient story
	1002	Yes, but at the same time you need to make sure what other kinds of drugs they use. I would just ask really what they're using.	discussing addiction
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	data, discussing addiction, follow-up care, multidisciplinary group
	1003	Yeah. Well, they would undergo – we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be	SUD treatment, commitment to recovery, discussing addiction, follow-up care, multidisciplinary group, post-operation care, protocol

		enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive	
	1003	So then, you could have a live patient to have this discussion with. So, first and foremost, is to save the patient's life, so I'd recom – I would put the patient on a schedule, no matter what the social situation is, because I mean, we're here to help people and even you know, if she doesn't have surgery, she's going to die. So, that would be my approach.	discussing addiction, post-operation care
	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards.	discussing addiction, SUD treatment, collaboration with addiction medicine, commitment to recovery, empathy, follow-up care, patient consent

	1003	Well, I would like to see his efforts supported. Right now, he's the only one we have. I think – this is going to - I want the hospital to support him. In terms of me, my efforts, well I've got no major issues there. I mean, if I book someone up for surgery, then I don't [meet] any resistance from the hospital. They, you know, they don't – they trust our judgement about who needs an operation, and then our job to do a – execute, and do a good operation. So not particularly. I don't have any outstanding conflicts with the hospital in terms of support for the program.	multidisciplinary group, collaboration with addiction medicine, discussing addiction
	1014	I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data.	multidisciplinary group, data, discussing addiction
	1005	Interviewer: Looking back, I guess on similar situations, are there any things that you would change about approaches you've taken to these types of patients before? Interviewee: I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration, patient consent
	1005	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: Yes. Interviewer: If so, what questions did you ask, what are some of the terms you use to discuss addiction? Interviewee: I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation. Interviewer: Have you heard of the term	discussing addiction, SUD treatment, commitment to recovery, patient consent, priorities, risk evaluation

		opioid use disorder or used it when talking with a patient? Interviewee: Yes, I've heard of that term, but I haven't used that term with a patient.	
	1005	terviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, accountability, insurance, discussing addiction, frustration, post-operation care
	1014	Have you ever discussed drug use with a patient like Katie, in this scenario? S: After…in Katie, after the fact. If patients are stable, they come in, and they have a left-sided valve that's infected, mitral or tricuspid, and they don't have any MR, the vegetation is over, over an acceptable size, there's nothing humongous that could likely embolize and hurt them and have a stroke, yes, I talk to them and, we are not the experts. I talk to them as much as we know from our training and experience. We talk to them. More often than not, they tell us what we want to hear. "This is it. I will never do this again. I have a younger child, and I will never do that again. I promise." But I never make it, so…they're under the gun. They're sick, they're in the hospital, and you can't just, you know, box them in a corner and say, you gotta promise, I won't do this if you come back and infect…I tell them, I tell them facts. But I try to make it, as much as I can, not a conditional conversation, meaning, you promise not to do this again, I will operate on you. Because, it's unfair, they're the patient, they're sick, they're in a bad spot, they're not doing well to begin with, they're using drugs, and for you to come in to be that overbearing	discussing addiction, empathy, left vs right side

		on them, I think it is not the way you go. Having said that, if they are stable enough and they don't need an operation, I will say, we are going to send you home on antibiotics, I'll see you in a few weeks and repeat an echocardiogram to see if this thing is developing more, but so long as they are ok, antibiotics are the way to go, but you have to stop using. You know, under the gun, needing an operation, you cannot, there is no quid pro quo, I don't, they can, they will promise it, more often than not, I don't believe it, but you have to give them a shot. They're young.	
	1014	I: Have you ever heard the term opioid use disorder or used it when talking to your patient? S: I mean, I've heard about it, but I've never used it.	discussing addiction
	1014	: Gotcha. Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Good question. The initial treatment, probably not. But afterwards, I hope it does. Because that would minimize recurrence. Again, recidivism is what kills them. I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data. I: How much time do you think is needed for these changes? S: I mean, we needed them five years ago. I: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? S: On and off. I: Do you think it's helpful?	desired changes, multidisciplinary group, protocol, time constraints, discussing addiction, societal issue
	1009	How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused	patient consent, discussing addiction, knowledge, pre-operation care, protocol

		some problem and that they're going to need surgery to fix it.	
	1009	I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around.	discussing addiction, patient consent, accountability, deservingness, multiple surgeries, paternalism, reinfection, futility
	1009	What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I just say if you use any sort of, you know, if you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm.	discussing addiction
	1009	The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	commitment to recovery, discussing addiction, patient consent, pre-operation care, futility, tx compared to colleagues

	1009	I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration with addiction medicine, priorities, follow-up care, changes over time, discussing addiction, frustration, futility
	1001	So I think if there is a high likelihood the patient would be back on the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	discussing addiction, rigidity (secondary)
	1001	Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, discussing addiction, knowledge, risk evaluation, rigidity (secondary)
Empathy			

		Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide?	
	1006	Interviewee: No, no idea.	
		What are your first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see	
	1010	how they ended up down that path.	

	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	
	1010	Tell me about your experience with managing pain in this population. They always have much higher needs than the standard patient. I don't think it is because of who they are, like because they are crybabies, I think it well, it I think it is a medical fact that if you have been exposed to opiates then your baseline without anything is pain. I don't know what that pain is they talk about, this pain all over the place that goes away when they shoot up, I can't imagine what that is, but I would think that, it is something, the only way I can associate with that is with the flu and you have like this weird pain all over, it doesn't happen that often but we have all gotten the flu. Which is not quite a pain it's a different thing, but I would think it is the same.	
	1010	he one thing that I have found useful in these meetings is that many people who may have thought that you are like the cold-hearted surgeon because you just wrote a note that no I don't think this person should have an operation hopefully, they will see that you are actually a human being. They're the ones that talk about being open minded and all this stuff but sometimes I don't think they are. So, if they meet you in person and have a discussion maybe they will see your viewpoint too, if they want to. So, I think they are very good. I think every time you bring people together and	

		discuss something it is always good and people who hide behind an email, keyboard, app, I think that is bad.	
	1019	we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right And I don't think that's an ethically sound practice.	
	1019	Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover	

		from their surgery.	
	1019	However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	
	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards	

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	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	
	1003	If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive. So then, you could have a live patient to have this discussion with. So, first and foremost, is to save the patient's life, so I'd recom – I would put the patient on a schedule, no matter what the social situation is, because I mean, we're here to help people and even you know, if she doesn't have surgery, she's going to die. So, that would be my approach.	
	1003	And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and	

		hopeful – and get a sense of what their potential is for recovering from the addiction problem.	
	1003	I have to say that's a minority [of] cases. Most patients I've found have gone on and been clean for a x number of months, sometimes years, and then gone back using drugs again. Chances are I'll offer them a second operation. If I get a sense they're going to try once more to fight the disease, and hopefully overcome it. So, it's - I know – I don't have a set answer; it depends on the set of circumstances, but I have to say, more often than that, we will offer them a second operation. Provided it get - I know that they tried in the past, and I think the capacity to try again.	
	1011	I do feel that these patients are in a very vulnerable situation, they have a lot of stresses going on in their life, and there is a lot that they have to figure out, especially someone who comes in who was actively using drugs at the time of their intervention, and the idea that they are going to go through this big operation, they are going to clean themselves up right away is sometimes too much to ask of them. It is not uncommon, I think for us to see some relapses before the patient eventually can fully quit.	
	1011	Now the, you know, the, I don't know what the circumstances are, or what the data shows that uh, what the data shows in terms of incidence of hepatitis C or HIV in patients who use drugs verses patients who don't use drugs but you think that they share some of the same risk factors for transmission, needles, and you know whatever. So, when we see a patient with injection drug abuse, we screen them, but I would be worried about getting hepatitis C in the same way that I would for a drug abuse patient than I would be for someone else who has hepatitis C for an unrelated reason. I think that is something that we ask the staff to be careful about as well because these are sharps that we are going to be handling, we are going to be dealing with bodily fluids, not only operating but perioperatively in the ICUs and floors pre and after the operation.	

	1011	Do you feel supported in your care of people who inject drugs? Yes, so I, you know I think this is a great issue that we have started that we have this multidisciplinary team now that we meet, we schedule, we meet scheduled once a month but we can also call for ad hoc meetings if there is a patient that was extremely challenging and we needed help managing that. Its composed of the addiction treatment team, the ID team, cardiothoracic surgeons, their primary care providers or whomever is taking care of the floor, and really when we started the process it was interesting to watch how the team has evolved, because I remember when we started the process a couple years ago, everyone was coming at it from different perspectives and everyone had the patients best interest in heart but I don't think they were seeing what the other teams were seeing. You know the addiction team most of the time was saying you need to operate on these patients because that is what needs to happen and the surgeons were reluctant because of obvious reasons but what I find very interesting is that more often than not recently everyone is on the same page, or trying to get on the same page. There is much less arguments or disagreements as to what the best plan of care is for these patients might be.	
	1011	Most of the times I think I would favor the PICC line and go to the nursing facility. Some of that is made out of pragmatism, being watchful, we end up canceling cases because we don't have enough ICU beds, or OR beds or hospital beds or whatever that is. You know one way we seem like we just want to do more cases, but we see that as those are real patients who need to be taken care of and if we keep someone in the hospital that doesn't need to be in the hospital then that is blocking someone else's care. And this is not necessarily you know the rationing of care, but it is sometimes just the appropriate use of care. So, I think that keeping them in the hospital for 6 weeks with a PICC line just to give them antibiotics I think is not the most optimal system that we have.	

	1011	maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the time. It's not like these patients are going back to their families, their grandparents, or an aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own police I think is a little too much to ask of them.	
	1017	S: Been doing this a long time. There are a lot of cases. There is the case of BLANK BLANK. So BLANK BLANK was a 30-year-old heroin user from the streets of BLANK who basically had endocarditis. I find him a very charming guy, so I did one valve replacement. About, oh, I don't know, 6 months later, he comes back and he now has still been using, and he promised me he'd stop. So I reoperated on him and did a homograft root replacement on him. Did great, actually. Six month later, he comes back and he's been using again, and now he's developed a big pseudoaneusrym that is a rupture of, uh, where we reconstructed him, so there's this big aneurysm. And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding. Recovered, and literally six months later I got a call that he had now infected his homograft because he's still using. So, I said, we're not going to do anything. I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point. Um, so that's my, my case that I will never forget about recidivism in drug users.	
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	1001	Interviewer: For Katy, do you think her opiate use disorder should be treated? Respondent: I believe so. I think drug use is not just a social issue. It is a disease, you know? I don't know if there is currently a definition for that, but that's just my personal opinion. I think they should be fairly treated, offered all the options, and carefully monitored with follow-up. It's a complex medical issue, not just a social issue.	
	1018	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um, my first reaction is sympathy. It's an addiction, it's not a crime. And um, most of the time, and um, I think your question specifically mentioned substance abuse, injection drugs, ok, yeah, it's sympathy. And looking forward to figuring out if there is a way to help this person.	

	1018	Have you seen prosthetic valve endocarditis in people who inject drugs? Yes Any specific cases come to mind? Well several just in my [time] here. Um where even the injectable drug is started while the patient was in the hospital recovering from surgery. I don't get angry it just raises my sympathy for their desperation	
	1018	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Um, I think they are fairly similar. I think maybe I am just a little more sympathetic to them but it's not a major difference.	
	1018	And to close, is there anything I haven't asked you about today that you would like to say? I have had friends, good friends suffer this, none with endocarditis, but I have seen what it did to their lives and maybe that is why I have a slightly different perspective on it. No one in my family has had that or endocarditis, so that is the personal side of it.	
	1012	The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	

	1012	ave you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	
	1012	Do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? I mean sometimes. Those things sometimes weigh into your decision, sometimes they have little kids and you know those things influence what you do, but in general no.	
	1018	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um, my first reaction is sympathy. It's an addiction, it's not a crime. And um, most of the time, and um, I think your question specifically mentioned substance abuse, injection drugs, ok, yeah, it's sympathy. And looking forward to figuring out if there is a way to help this person.	
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	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	
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	1010	There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see how they ended up down that path.	
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	

	1014	I: Have you ever discussed drug use with a patient like Katie, in this scenario? S: After…in Katie, after the fact. If patients are stable, they come in, and they have a left-sided valve that's infected, mitral or tricuspid, and they don't have any MR, the vegetation is over, over an acceptable size, there's nothing humongous that could likely embolize and hurt them and have a stroke, yes, I talk to them and, we are not the experts. I talk to them as much as we know from our training and experience. We talk to them. More often than not, they tell us what we want to hear. "This is it. I will never do this again. I have a younger child, and I will never do that again. I promise." But I never make it, so…they're under the gun. They're sick, they're in the hospital, and you can't just, you know, box them in a corner and say, you gotta promise, I won't do this if you come back and infect…I tell them, I tell them facts. But I try to make it, as much as I can, not a conditional conversation, meaning, you promise not to do this again, I will operate on you. Because, it's unfair, they're the patient, they're sick, they're in a bad spot, they're not doing well to begin with, they're using drugs, and for you to come in to be that overbearing on them, I think it is not the way you go. Having said that, if they are stable enough and they don't need an operation, I will say, we are going to send you home on antibiotics, I'll see you in a few weeks and repeat an echocardiogram to see if this thing is developing more, but so long as they are ok, antibiotics are the way to go, but you have to stop using. You know, under the gun, needing an operation, you cannot, there is no quid pro quo, I don't, they can, they will promise it, more often than not, I don't believe it, but you have to give them a shot. They're young.	
	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not	

		the heart, it is one of their problems, it is not their main problem. That's their problem.	
	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	
	1011	Do you worry about getting viral infections like Hep C and HIV? Um, I do. I worry not only for myself but also for the staff that is taking care of these patients, I worry for my family if I were to get infected. So, I think those are just normal human reactions, but I worry about that stuff for anybody who has hepatitis C. Now the, you know, the, I don't know what the circumstances are, or what the data shows that uh, what the data shows in terms of incidence of hepatitis C or HIV in patients who use drugs verses patients who don't use drugs but you think that they share some of the same risk factors for transmission, needles, and you know whatever. So, when we see a patient with injection drug abuse, we screen them, but I would be worried about getting hepatitis C in the same way that I would for a drug abuse patient than I would be for someone else who has hepatitis C for an unrelated reason. I think that is something that we ask the staff to be careful about as well	

		because these are sharps that we are going to be handling, we are going to be dealing with bodily fluids, not only operating but perioperatively in the ICUs and floors pre and after the operation.	
	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards.	
	1003	Most patients I've found have gone on and been clean for a x number of months, sometimes years, and then gone back using drugs again. Chances are I'll offer them a second operation. If I get a sense they're going to try once more to fight the disease, and hopefully overcome it. So, it's - I know – I don't have a set answer; it depends on the set of	

		circumstances, but I have to say, more often than that, we will offer them a second operation. Provided it get - I know that they tried in the past, and I think the capacity to try again.	
	1014	Have you ever discussed drug use with a patient like Katie, in this scenario? S: After…in Katie, after the fact. If patients are stable, they come in, and they have a left-sided valve that's infected, mitral or tricuspid, and they don't have any MR, the vegetation is over, over an acceptable size, there's nothing humongous that could likely embolize and hurt them and have a stroke, yes, I talk to them and, we are not the experts. I talk to them as much as we know from our training and experience. We talk to them. More often than not, they tell us what we want to hear. "This is it. I will never do this again. I have a younger child, and I will never do that again. I promise." But I never make it, so…they're under the gun. They're sick, they're in the hospital, and you can't just, you know, box them in a corner and say, you gotta promise, I won't do this if you come back and infect…I tell them, I tell them facts. But I try to make it, as much as I can, not a conditional conversation, meaning, you promise not to do this again, I will operate on you. Because, it's unfair, they're the patient, they're sick, they're in a bad spot, they're not doing well to begin with, they're using drugs, and for you to come in to be that overbearing on them, I think it is not the way you go. Having said that, if they are stable enough and they don't need an operation, I will say, we are going to send you home on antibiotics, I'll see you in a few weeks and repeat an echocardiogram to see if this thing is developing more, but so long as they are ok, antibiotics are the way to go, but you have to stop using. You know, under the gun, needing an operation, you cannot, there is no quid pro quo, I don't, they can, they will promise it, more often than not, I don't believe it, but you have to give them a shot. They're young.	
	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the	

		road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not the heart, it is one of their problems, it is not their main problem. That's their problem.	
	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	
Follow-up Care			
	1012	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	timing of SUD tx, follow-up care, support for patient, collaboration (secondary)

	1006	Interviewer: Tell me about your experience with managing pain in this population? Interviewee: They take a lot of pain medicine. It's a little challenging because it's hard to draw the line between what's legitimate postoperative discomfort and what is drug seeking behavior. We try and stay away from the drugs like Dilaudid. Interviewer: What works to treat their pain? Interviewee: I try and use nonopioid medications, but otherwise just titrate the dose of standard opioids. Interviewer: What has not worked? Interviewee: What has not worked for their pain? Interviewer: Mm-hmm. Interviewee: Gosh, in early postop, expecting them to get by on acetaminophen and Motrin is unrealistic 'cause their sternotomies are painful, but I [unintelligible 13:30] hasn't worked, give 'em enough opiates it feels okay. Then there are the other drugs, Toradol and things like that, but once they're out a few days it'll change over to that. Interviewer: Do you consult another service for pain management? Interviewee: Not usually.	pain management, follow-up care, post-operation care
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group

	1006	Interviewer: All right, so this next little section gives us a couple of different options for IV antibiotic therapies. The question is what do you think about these options, what do you think a PICC line and going home? Interviewee: Negatory, I don't do that. Interviewer: What about a PICC line and staying in the hospital? Interviewee: That's what we do with a lot of patients. Interviewer: PICC line and going to a nursing facility? Interviewee: Depends on the nursing facility. It's amazing, they actually have overdoses on the addiction medicine floor in the hospital, it's amazing. If it's a nursing home that doesn't have a actual addiction medicine specialization I would not do it. Interviewer: I think you may have been answering this already as well, what is the safest option? Interviewee: In hospital therapy, if they require IV therapy, and ideally you'd have a oral drug that the organism is susceptible to and they can send 'em home on pills.	PICC line risk, follow-up care, post-operation care
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy	support for patient, SUD treatment, changes over time, desired changes, follow-up care

		and medical—or medication that really eliminated the craving would help a lot.	
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	multidisciplinary group, futility, desired changes, follow-up care, societal issue
	1010	t does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	age, accountability, commitment to recovery, follow-up care, second chance, paternalism, discussing addiction, post-operation care
	1010	How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of	SUD treatment, follow-up care, data, collaboration with addiction medicine, commitment to recovery, deservingness

		evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service.	
	1010	ell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, pain management, collaboration with addiction medicine, accountability, liability of medical professionals, deservingness, follow-up care, protocol, risk evaluation
	1010	For a patient with prosthetic valve endocarditis. PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? I would certainly not put a PICC line in someone then send them home. If they came back because of documented drug use, then I think that is a disservice to the patient. PICC line and hospital I would have no issue with that that is usually what we do. PICC line and facility, there are two facilities that come to mind that patient's themselves know that it is easier for them to get drugs there than get drugs at home. PICC line and [specific rehab] I would say yes. PICC line and uh what's the one ? [Specific facility] Yes [specific facility], no. Uh there is another one too ? [Specific facility] [Specific facility], no. You know uh, I think talking to the patient and see what they think because you know they are addicted but they are not, you know they could be bad, they could be good, they could be very smart, they could be dumb, they could be anything, but they're addicted. Just like you know it makes no sense when someone talks to a patient loud, they're not deaf, they just have coronary disease, it's the same thing as well.	PICC line risk, follow-up care, priorities, protocol

	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things.	timing of SUD tx, lack of knowledge, risk evaluation, perception of risk in PWID, follow-up care, post-operation care
	1019	So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would… I would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, post-operation care, SUD treatment, discussing addiction, follow-up care, deservingness, perception of risk in PWID, paternalism

	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would…	timing of SUD tx, follow-up care, perception of risk in PWID, post-operation care
	1019	Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	cost, insurance, SES, follow-up care, support for patient, PICC line risk

	1008	what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	risk evaluation, deservingness, multiple surgeries, post-operation care, relapse, reinfection, commitment to recovery, follow-up care, frustration, futility
	1008	And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, post-operation care, liability of medical professionals, follow-up care, accountability, paternalism
	1008	What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the,	post-operation care, liability of medical professionals, follow-up care, accountability, paternalism, insurance

		you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	
	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would…	timing of SUD tx, follow-up care, perception of risk in PWID, post-operation care
	1019	Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	cost, insurance, SES, follow-up care, support for patient, PICC line risk
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that	follow-up care, support for patient, societal issue, administration, tx compared to broader

		hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	
	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem
	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have small kids and they're taking care of them or	follow-up care, insurance, lack of resources, rationalization (secondary)

		someone else is taking care of them- the whole family, partner situation is not always the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	
	1016	I: Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	support for surgeons, pain management, follow-up care, post-operation care, multidisciplinary group
	1016	I: How do you think this patient—going back to Katie—how do you think this patient's opioid use disorder should be treated? S: Um, pass. I mean I can say that, to get enrolled in a program, to support her so she doesn't return to using drugs, whether that's with methadone or, um, you know, other medications that may be available. Beyond the specifics of that… I: When do you think that would take place? S: Um, a plan should be in place as they are leaving the hospital, or, you know, instituted before they leave the hospital so there's no drop out in care. I: What is the role of medications in that? S: Um, my understanding is that, um, medications such as methadone can help prevent patients from going back to using IV drugs. Um, and is, I don't want to say a bridge, but to some degree, a nice, um, bridge medication. Um, my bias is that, um, while it prevents them from using illegal drugs, it is still a substance that they become dependent on in the long-term. I: How about psychotherapy? What role do you think that plays? S: I think psychotherapy is very important. Um,	SUD treatment, timing of SUD tx, follow-up care

		I don't know how many patients get that, or, receive it, or, how many patients are willing to participate in it. Um, but I do think it's an important piece to recovery.	
	1016	Um, I think, too, the approach varies a little bit depending on what side of the heart, um, the lesion is on. So, um, if you have, uh, a lesion on the left side, we tend to be, and I tend to be a lot more aggressive, um, I'll tend to do more of a watch-and-wait on the right side of the heart. Um, in other words, let the patients get antibiotics, uh, because they, they've got bad tricuspid valve regurgitation, to some degree they can survive with that for a while. Let them prove that they can enter recovery, and then, I think the other piece of the puzzle is we have them come back to our clinic in six weeks for echo follow-up and to plan surgery at that time. The majority of patients that I see in consultation in the hospital do not show up to that six-week appointment. Um, I have had one, actually. Um, and so they take up clinic time, and, um, it's kind of my little, in some degree, my little test, if you're really committed and you come back to see me in my office, then I'm willing to operate on you, but if you can't make the appointment, and you can't demonstrate some sort of, um, follow up, then, um, you know…	deservingness, left vs right side, follow-up care, commitment to recovery
	1016	S: Um, it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies,	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals

		it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their recovery, and, and help when we have a team approach.	
	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good.	support for surgeons, changes over time, follow-up care, PICC line risk, administration, collaboration with addiction medicine, futility, societal issue

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, post-operation care, paternalism, commitment to recovery, follow-up care, timing of SUD tx
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs. Interviewer: I think it just answered this, it wants me to ask you, do these types of treatment exist alone or do they need to be combined?	SUD treatment, multidisciplinary group, support for patient, medical model, follow-up care

		Interviewee: Oh, absolutely combined.	
	1006	Interviewer: Tell me about your experience with managing pain in this population? Interviewee: They take a lot of pain medicine. It's a little challenging because it's hard to draw the line between what's legitimate postoperative discomfort and what is drug seeking behavior. We try and stay away from the drugs like Dilaudid. Interviewer: What works to treat their pain? Interviewee: I try and use nonopioid medications, but otherwise just titrate the dose of standard opioids. Interviewer: What has not worked? Interviewee: What has not worked for their pain? Interviewer: Mm-hmm. Interviewee: Gosh, in early postop, expecting them to get by on acetaminophen and Motrin is unrealistic 'cause their sternotomies are painful, but I [unintelligible 13:30] hasn't worked, give 'em enough opiates it feels okay. Then there are the other drugs, Toradol and things like that, but once they're out a few days it'll change over to that. Interviewer: Do you consult another service for pain management? Interviewee: Not usually.	pain management, post-operation care, perception of risk in PWID, follow-up care
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group

		withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	
	1006	Interviewer: All right, so this next little section gives us a couple of different options for IV antibiotic therapies. The question is what do you think about these options, what do you think a PICC line and going home? Interviewee: Negatory, I don't do that. Interviewer: What about a PICC line and staying in the hospital? Interviewee: That's what we do with a lot of patients. Interviewer: PICC line and going to a nursing facility? Interviewee: Depends on the nursing facility. It's amazing, they actually have overdoses on the addiction medicine floor in the hospital, it's amazing. If it's a nursing home that doesn't have a actual addiction medicine specialization I would not do it.	post-operation care, PICC line risk, frustration, follow-up care
	1006	Interviewer: I think you may have been answering this already as well, what is the safest option? Interviewee: In hospital therapy, if they require IV therapy, and ideally you'd have a oral drug that the organism is susceptible to and they can send 'em home on pills. Interviewer: Any specific things that help you choose such as housing, insurance, job status, childcare? Interviewee: I'd make every effort to do it as an inpatient.	post-operation care, PICC line risk, follow-up care

	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	desired changes, SUD treatment, societal issue, medical model, support for patient, changes over time, follow-up care
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving	multidisciplinary group, support for patient, societal issue, lack of resources, futility, desired changes, follow-up care
	1002	erviewer: Some hospitals can have a multidisciplinary group to evaluate these specific patients and cases. Do you know if [Tess] has that? Respondent: I don't know. Interviewer: Do you think it would be helpful to have? Respondent: I think so. Interviewer: Who do you imagine would be there?	multidisciplinary group, training, follow-up care, lack of knowledge

		Respondent: [The patient], cardiology, and then some other pain control. What else? Like, pharmacists and then coordinators who can reach out to the family. I think that's about it, yeah.	
	1007	Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, patient consent, support for patient, follow-up care, SUD treatment
	1007	Um, she's toward the end of the spectrum that needs surgery very soon because of her aortic insufficiency, which is in the acute phase, its poorly tolerated. So she's somebody that would probably need surgery sooner than later, would need some medical optimization in an ICU setting. Um, probably would need some reformed social addiction medicine engagement early on. But it's, it's not going to do much at this point and it's more for the recovery and future.	pre-operation care, post-operation care, follow-up care
	1007	PICC line and go home? PICC line and stay in the hospital and PICC line and go to the nursery facility. Speaker 2: What do I think in which way? Speaker 1: It's an open ended question. We just want to know your, your perspectives on them Speaker 2: I think the unwritten standard today is that most people stay in house because of fear of liability.	post-operation care, priorities, liability of medical professionals, PICC line risk, follow-up care

		Speaker 1: Okay Speaker 2: Whether that's justified or not, that is kind of the most popular answer. Speaker 1: Okay, so what's the safest option? What would you think is the safest option and what's the best for this patient. Speaker 2: To stay in house.	
	1017	: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for patient, frustration, administration, follow-up care, lack of resources, multidisciplinary group
	1017	How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	support for surgeons, desired changes, multidisciplinary group, follow-up care, timing of SUD tx, support for patient
	1017	How should this patient's opioid use disorder be treated and when? S: With respect to someone who has an infected valve? I: Um, yeah. Or back to the vignette with Katie, who, uh, yeah, has an infected valve… S: I think it needs to, well, ideally it starts in the hospital with establishing long-term relationships with professionals and a team that is going to manage their addiction. I: What does the role of medications play in that? S: I don't know. I'm sure there is a role. I: And how about psychotherapy? S: I'm a big fan. So, I think, I don't know, but I think there is a role.	support for patient, timing of SUD tx, follow-up care
	1013	o people who inject drugs have different operative and post-operative mortality? So, their typically their perioperative mortality is actually lower than most inpatients we see and the reason for that is that they are very	perception of risk in PWID, age, follow-up care

		often younger so they have fewer comorbidities um and the investigations we have done here suggest that their long-term mortality may well be worse although the challenge always with people who inject drugs is getting adequate follow up so many get lost to follow up.	
	1013	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge. What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	collaboration with addiction medicine, second chance, commitment to recovery, follow-up care, timing of SUD tx
	1003	what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	relapse, risk evaluation, data, reinfection, age, follow-up care, post-operation care
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social	support for patient, post-operation care, SUD treatment, save lives, follow-up care, discussing addiction, multidisciplinary group

		and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy
	1003	What are some of like, the terms that you would use to discuss her addiction? Respondent: Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake.	commitment to recovery, discussing addiction, patient consent, patient story, follow-up care
	1003	nd then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards. Interviewer: How do you like, bring him in, into your cases? Respondent: Well, fortunately he's been with us for about a year, so I – when I go see a patient, once I assess them, I, if he hasn't seen the patient yet, I notify the medical team to get in contact with him, and he's pretty good	collaboration with addiction medicine, support for patient, support for surgeons, follow-up care, SUD treatment

		at coming to see a patient within 24 hours. And so, that's great. And then, I stay in contact with him and you know, tell him the surgery is scheduled and he'll see the patient afterwards, too. So, it's been a good collegiality – collegial relationship – colleagues and addiction medicin	
	1003	. And how knowledgeable do you yourself feel about like, available treatments for people who use drugs? You know, do you know of any – of the available treatments for opioid use disorder, is that something you'd be interested in getting more training on? Respondent: Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be interested in doing that, but it's you know, right now, not practical. For me.	SUD treatment, time constraints, training, follow-up care, protocol
	1003	And what do you think about like, drug rehab? Do you think it's different – is it different than drug detox? Do you think it's - Respondent: Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease	stigma , societal issue, timing of SUD tx, multidisciplinary group, medical model, regional differences, follow-up care, changes over time, support for patient

		team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	follow-up care, multidisciplinary group, changes over time, second chance, accountability, screening for ID, commitment to recovery, relapse
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	pain management, follow-up care, post-operation care, liability of medical professionals, collaboration with addiction medicine, changes over time
	1003	nterviewer: You know, what are your thoughts on management decisions in those cases? Respondent: Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I	accountability, liability of medical professionals, deservingness, relapse, follow-up care, post-operation care

		think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously.	
	1003	I have to say that's a minority [of] cases. Most patients I've found have gone on and been clean for a x number of months, sometimes years, and then gone back using drugs again. Chances are I'll offer them a second operation. If I get a sense they're going to try once more to fight the disease, and hopefully overcome it. So, it's - I know – I don't have a set answer; it depends on the set of circumstances, but I have to say, more often than that, we will offer them a second operation. Provided it get - I know that they tried in the past, and I think the capacity to try again.	follow-up care, relapse, prevalence of endocarditis, multiple surgeries, second chance, accountability, empathy
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	post-operation care, PICC line risk, futility, frustration, follow-up care, perception of risk in PWID, desired changes, protocol, support for patient

	1003	Interviewer: What if it was a different kind of valve? Not - like not a prosthetic valve, but I don't know [unintelligible 0:29:20] the other kind of it. Respondent: A native valve? Interviewer: Yeah. Respondent: Another – oh. Well, that's unusual. Most of the time, someone comes back with a second valve operation, the existing valve they have is going to be infected. But in the rare circumstance not the case, we would offer them surgery, certainly. And again, operation does [unintelligible] more risk, because there is scar tissue on the heart and so forth. Interviewer: Mm-hmm. Or, what if it was like a mechanical valve that had been used the first time? Respondent: Yeah. We've seen that. Well, we'd take it out and put another valve in; probably another mechanical, unless they've shown that they can't tolerate Coumadin. But we'll put a mechanical in and if they can – they do tolerate Coumadin, yeah.	valve preference, multiple surgeries, follow-up care, risk evaluation

	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to	support for surgeons, administration, tx compared to broader, accountability, desired changes, follow-up care, frustration, lack of resources, post-operation care, multidisciplinary group

		do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	

	1009	Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	tx compared to colleagues, deservingness, collaboration with addiction medicine, multidisciplinary group, lack of resources, frustration, accountability, desired changes, follow-up care

		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1011	How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	lack of resources, accountability, post-operation care, data, follow-up care, support for patient
	1011	n the case of this vignette how should this patient's opioid use disorder be treated and when? I think form my perspective what she needs right away, or what she needs first is the	timing of SUD tx, priorities, pain management, follow-up care

		treatment for her cardiogenic shock and the problem that she has that she will require some sort of a surgical operation based on whatever the imaging suggests and then after that there has to be attention to her acute pain needs because it is a surgical procedure she is going to have some pain but as she weans away from her operation I think that is where the transition needs to happen.	
	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	deservingness, follow-up care, relapse, futility, frustration, tx compared to colleagues, reinfection, defensive
	1011	Most of the times I think I would favor the PICC line and go to the nursing facility. Some of that is made out of pragmatism, being watchful, we end up canceling cases because we don't have enough ICU beds, or OR beds or hospital beds or whatever that is. You know one way we seem like we just want to do more cases, but we see that as those are real patients who need to be taken care of and if we keep someone in the hospital that doesn't need to be in the hospital then that is blocking someone else's care. And this is not necessarily you know the rationing of care, but it is sometimes just the appropriate use of care. So, I think that keeping them in the hospital for 6 weeks with a PICC line just to give them antibiotics I think is not the most optimal system that we have.	follow-up care, PICC line risk, empathy, lack of resources

	1011	I think this truly needs a multidisciplinary approach to this. Surgery is just one point; most surgeons' offices are not geared towards long term follow up they are not geared toward addiction management they are not geared towards drug rehab programs which is where a lot of support is required either other disciplines or other avenues in society. These patients they have a serious disease problem, the example that you gave about alcoholism, or cancer is more true than not, its not the valve that is the problem, the disease is the addiction.	multidisciplinary group, discussing addiction, follow-up care
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	support for patient, timing of SUD tx, multidisciplinary group, follow-up care
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility

	1017	I: How should this patient's opioid use disorder be treated and when? S: With respect to someone who has an infected valve? I: Um, yeah. Or back to the vignette with Katie, who, uh, yeah, has an infected valve… S: I think it needs to, well, ideally it starts in the hospital with establishing long-term relationships with professionals and a team that is going to manage their addiction. I: What does the role of medications play in that?	time of treatment, follow-up care, support for patient
	1013	o people who inject drugs have different operative and post-operative mortality? So, their typically their perioperative mortality is actually lower than most inpatients we see and the reason for that is that they are very often younger so they have fewer comorbidities um and the investigations we have done here suggest that their long-term mortality may well be worse although the challenge always with people who inject drugs is getting adequate follow up so many get lost to follow up.	age, follow-up care, post-operation care
	1013	So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge.	timing of SUD tx, commitment to recovery, follow-up care, collaboration with addiction medicine, second chance
	1015	: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	support for surgeons, accountability, follow-up care, administration, frustration
	1015	I: How should this patient's opioid use disorder be treated and when? This is going back to Katie. S: Um…I don't think there is a time. I think it needs to be treated throughout the whole hospital stay and post-op. I don't think you say,	timing of SUD tx, pre-operation care, follow-up care, commitment to recovery

		ok now we've done surgery, now you start treatment. The treatment needs to start the minute they step in the door or become identified as drug users.	
	1015	: Ok. So…I'm going to list three options for Katie. A PICC line and going home, a PICC line and staying in the hospital, and a PICC line and going to a nursing facility. Which of those do you feel is the safest option? S: Uh…well, up until I started here, I thought a PICC line and staying in the hospital, but I've sent a number of patients to nursing facilities for monitored antibiotics and I think that is perfectly fine. I: Any specific things help you choose, like housing, insurance, job status, or anything like that? S: No. Availability, that's it.	PICC line risk, follow-up care, lack of resources, SES
	1007	Speaker 1: Do they have different operative and post-operative mortality complications compared to other patients? Speaker 2: Yes. Speaker 1: Okay… Um, can you please tell me my about that? Speaker 2: So, I mean, every patient is individual, but there are trends. A lot of these patients tend to be younger, so in some ways a healthier, which is what we're trying to assess, is the risk of surgery benefit. On the other hand, some social issues make them higher risk.	risk evaluation, societal issue, follow-up care
	1007	Speaker 1: Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, follow-up care, patient consent, post-operation care, risk evaluation, societal issue

	1001	Do people who inject drugs have different operative and postoperative mortality? Are there any other complications? Respondent: It depends, you know? It depends on I think the reason for surgery. I mean, if that is related to the infection itself, I think the postoperative – the infection and recurrence of the infection will be much higher. On the other side, there is always then noncompliance with those patients potentially that can increase the postoperative risk, as well. You know, with the potential noncompliance, their recovery can be prolonged and would increase difficulty in the care of those patients.	perception of risk in PWID, post-operation care, follow-up care
	1001	Interviewer: Is there someone you can call in the hospital with addiction medicine expertise? Respondent: Yeah, there is I think a service now. I think this is recently established. I haven't had much experience working with this group of professionals here yet, but I'm happy to work with them if there is such opportunity. This group of patients represents a challenging patient population, I think not just from the medical standpoint. There is also a lot of ethic issues and social issues involved. So I feel there should be a team taking care of these patients.	collaboration with addiction medicine, multidisciplinary group, societal issue, follow-up care
	1001	Interviewer: All right, and what do you think about the term 'drug rehab?' Respondent: I don't know the detail. I heard about the name. To me it is very difficult. I think theoretically there will be successful stories, but I see it clinically it happened a lot. People tended to relapse back into the drug use [in getting the effects again and again]. I think it's hard for people, and I think they all deserve to be placed in drug rehab, if possible, to have kind of their program that we help them get over the drug addiction, if possible. I personally think it should be mandatory for them to join this program, but I don't think it's going to be the case – but I would recommend that every patient who has been on drugs to be evaluated by the specialist. If they request those patients to go to rehab, I would support it.	SUD treatment, deservingness, relapse, follow-up care, multidisciplinary group
	1001	Interviewer: For Katy, do you think her opiate use disorder should be treated? Respondent: I believe so. I think drug use is not just a social issue. It is a disease, you know? I don't know if there is currently a definition for	SUD treatment, societal issue, empathy, deservingness, support for patient, follow-up care

		that, but that's just my personal opinion. I think they should be fairly treated, offered all the options, and carefully monitored with follow-up. It's a complex medical issue, not just a social issue.	
	1001	Interviewer: For this patient, when do you think this treatment should be started? Respondent: I would say start it right away, because they should be evaluated even in preop. Then they can be carefully monitored. You know, theoretically I would want those patients to be closely monitored for the first few months after surgery, and that way there's no chance for them to get back into the drug use – because the risk for reinfection within the first few months is very, very high.	timing of SUD tx, pre-operation care, relapse, accountability, follow-up care, post-operation care, perception of risk in PWID
	1001	nterviewer: Okay, and what has not worked well for managing pain in this population that you've seen with patients? Respondent: Yeah, because all the narcotics are associated with side effects, so there's a limit to use. So overuse causes problems, can delay their progress from recovery [overlapping noise] even affect the hemodynamics. Typically after a surgery, after three or four days the pain should be minimal. That is usually the time for patient to resume some degree of their activity at baseline, but our experience is the [possibility] of recover for the drug use patients is a little bit delayed. It's more or less related to the overuse of narcotics postop.	pain management, post-operation care, perception of risk in PWID, follow-up care
	1001	about a year later she's back in the hospital and has prosthetic valve endocarditis. Have you seen prosthetic value endocarditis in people who inject drugs? Respondent: Yeah, of course. Interviewer: Is there any specific case that stands out in your mind that you could think of, and could you tell me about it? Respondent: Yeah, I think this patient most likely would require a [homograft] in the beginning, to be honest, where [the abscess is confirmed]. And the reinfection of root abscess – a homograft in the same location – would almost mean 100-percent mortality, to be honest. [Off-mic] So technically very difficult to treat, but certainly everybody is different.	multiple surgeries, risk evaluation, seriousness, follow-up care

	1001	I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	multiple surgeries, patient consent, deservingness, relapse, multidisciplinary group, reinfection, follow-up care
	1001	Interviewer: How would you feel about working with someone you used to use ten years ago, and then they get a prosthetic valve endocarditis because of a dental procedure? Would that make you feel differently than Katy's situation? Respondent: Yeah, because it's preventable. I think every surgeon's perspective will be different, but we're not just the surgeons [unintelligible 00:28:26] but we do care about their overall health, care, and the outcome in the long run. We wish to be able to identify the real cause of the underlying disease. For example, here if endocarditis is clearly drug related and there is evidence the patient has been relapsing back into drug use, their clinical suspicion for a reinfection will be very high and predicted. So this is a different scenario from endocarditis, from the routine dental procedure, or [undiagnosis] of the etiology. So this is completely two different scenarios. Even though the surgery itself is the same – the operative short-term outcome might be similar, but their prognosis is different. That affects the surgeon's perspective of the surgery itself.	commitment to recovery, perception of risk in PWID, accountability, deservingness, reinfection, follow-up care
	1001	Respondent: So we're not talking about the surgery at this point? This is medical? Interviewer: The medical management, mm-hmm. So the options are we can give her a PICC line and she can go home, we can give her a PICC line and she can stay in the hospital, or we can give her a PICC line and she can go to a nursing facility? Respondent: I'd prefer the patient stayed in the hospital, if possible, but I just don't think if that would actually happen because of the financial issue. I still believe overall the hospital is the safest place for those patients – being medically managed and closely monitored. I personally don't think a patient with a recent history of active drug use should	cost, relapse, PICC line risk, accountability, follow-up care, protocol

		go home with a PICC line. I think it's prohibited. That's just a perfect setup for drug use again at home.	
	1001	Rehab? I don't know. It all depends. You know, every place is different. We have good experiences and bad experiences with rehab. So I cannot really comment. I know only even though this is not 100 percent, we can manage the patient in the hospital. We can provide the best care they can get, but I just cannot comment on if they can go to rehab. Theoretically they can, if the rehab place is a fair facility.	post-operation care, SUD treatment, risk evaluation, follow-up care, paternalism
	1001	Interviewer: Do you consider other things if you're choosing what to do with the PICC line, like housing, insurance, job status, or childcare? Do any of those things come to mind? Respondent: To be honest, I really don't know the [outer perspective of our practice]. So there will be the case management and social workers who help with those perspectives. I make decisions based on a patient's own medical need. There will be other care that we have to consider, but gladly we have specialists to help us out.	PICC line risk, liability of medical professionals, follow-up care, multidisciplinary group, insurance
	1001	Interviewer: Can you tell me about the operative risk of reoperation versus the original operation? Respondent: Yeah, because every time we've done something in the chest – and it's similar in other territory – there's always scar tissue formation. And going to the chest again to have the area exposed will be much more challenging, potentially given the history of infection. So the risk of injury, interoperative, will be high, and the operative mortality will be at least double, sometimes even higher depending on the complexity of the operation.	multiple surgeries, risk evaluation, perception of risk in PWID, time between operations, follow-up care

	1001	Interviewer: This is the final question. Some hospitals have a multidisciplinary group to evaluate people who inject drugs. Do you know if that's done here? Any times that you're ever meeting with a multidisciplinary group? Respondent: I'm not sure if we have an official team. I think we've been talking about it for some time. Since I'm not taking care of a lot of these patients [off-mic], I may take care of an endocarditis patient once or twice a year. It's just not my own personal interest. So I'm not aware if we have a formal, interdisciplinary team, but certainly the process is something that requires a team approach. And that's being done, but I just don't know if we officially have such a team. Interviewer: Okay, but you think it would be helpful? Respondent: Yeah, absolutely. I think those patients should be taken care of by surgeons, medical specialists, psychiatrists, pharmacists – from every perspective to develop a plan.	support for surgeons, multidisciplinary group, follow-up care
	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration
	1005	Well that patient's critically ill, so that patient needs to be—should probably be in the hospital for six weeks, because if she gets better from her shock and then gets tuned up and then have surgery, then she'll need probably two to four weeks of postoperative IV antibiotics in the hospital, and then we prefer to discharge straight to rehab.	follow-up care, save lives

	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	commitment to recovery, deservingness, follow-up care, frustration, futility, post-operation care, reinfection, relapse, risk evaluation
	1008	Interviewer: Does it impact the kind of valve that you would give them the first time? Respondent: Well, people that inject drugs tend not to live as long as people that don't. So, I would tend to put more tissue valves in. I don't think there's a difference in, you know, re-infection. But I think I would put more tissue valves in these people, which is a reason they're going to be on Warfarin, anyway. Then I would put them in a mechanical valve if they're young.	follow-up care, multiple surgeries, post-operation care, reinfection, relapse, risk evaluation
	1008	Interviewer: Okay. I have another -- and, so, imagine -- back to Katie, that you've operated on her. She's doing well. She's linked to a methadone maintenance program. And then one year later, she's back in the hospital and she has prosthetic valve endocarditis. So, you've seen this before? Respondent: Yep. Interviewer: Yeah. What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the	data, deservingness, follow-up care, protocol, commitment to recovery, relapse, reinfection

		-- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	
	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	tx compared to broader, follow-up care, administration, societal issue

	1018	atie, in our vignette, how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	paternalism, multidisciplinary group, post-operation care, save lives, follow-up care, timing of SUD tx
	1018	think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of.	data, follow-up care, contract, deservingness, desired changes, valve preference, stigma
	1012	The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility	accountability, societal issue, lack of knowledge, support for patient, empathy, follow-up care, lack of resources

		where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	administration, cost, accountability, insurance, support for patient, support for surgeons, SUD treatment, follow-up care, societal issue
	1012	What do you think about drug rehab? Uh, I think it's, I think it's necessary for most patients to get over this problem, intense rehab, drug rehabilitation, I think it's necessary. And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	rehab v detox, follow-up care, support for patient, timing of SUD tx

	1012	you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not. And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness. And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? I	stigma , seriousness, relapse, reinfection, accountability, deservingness, follow-up care, multiple surgeries, futility, lack of resources
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	follow-up care, support for patient, societal issue, administration, tx compared to broader
	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem

		mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	
	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration
	1005	Well that patient's critically ill, so that patient needs to be—should probably be in the hospital for six weeks, because if she gets better from her shock and then gets tuned up and then have surgery, then she'll need probably two to four weeks of postoperative IV antibiotics in the hospital, and then we prefer to discharge straight to rehab.	follow-up care, save lives
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration

	1017	I: How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	support for patient, timing of SUD tx, multidisciplinary group, follow-up care
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility
	1017	I: How should this patient's opioid use disorder be treated and when? S: With respect to someone who has an infected valve? I: Um, yeah. Or back to the vignette with Katie, who, uh, yeah, has an infected valve… S: I think it needs to, well, ideally it starts in the hospital with establishing long-term relationships with professionals and a team that is going to manage their addiction. I: What does the role of medications play in that?	time of treatment, follow-up care, support for patient
	1016	Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's	support for surgeons, post-operation care, follow-up care, pain management, multidisciplinary group

		kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	
	1016	How do you think this patient—going back to Katie—how do you think this patient's opioid use disorder should be treated? S: Um, pass. I mean I can say that, to get enrolled in a program, to support her so she doesn't return to using drugs, whether that's with methadone or, um, you know, other medications that may be available. Beyond the specifics of that… I: When do you think that would take place? S: Um, a plan should be in place as they are leaving the hospital, or, you know, instituted before they leave the hospital so there's no drop out in care.	SUD treatment, follow-up care, timing of SUD tx
	1016	Let them prove that they can enter recovery, and then, I think the other piece of the puzzle is we have them come back to our clinic in six weeks for echo follow-up and to plan surgery at that time. The majority of patients that I see in consultation in the hospital do not show up to that six-week appointment. Um, I have had one, actually. Um, and so they take up clinic time, and, um, it's kind of my little, in some degree, my little test, if you're really committed and you come back to see me in my office, then I'm willing to operate on you, but if you can't make the appointment, and you can't demonstrate some sort of, um, follow up, then, um, you know…	follow-up care, commitment to recovery, deservingness
	1016	it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals

		there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their recovery, and, and help when we have a team approach.	
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	commitment to recovery, discussing addiction, empathy, follow-up care, relapse, perception of risk in PWID, societal issue, second chance, support for patient
	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	discussing addiction, commitment to recovery, follow-up care, frustration, patient story, priorities, risk evaluation, societal issue, SUD treatment

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, commitment to recovery, follow-up care, post-operation care, risk evaluation
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs.	SUD treatment, support for patient, follow-up care, medical model, multidisciplinary group

	1006	Interviewer: Tell me about your experience with managing pain in this population? Interviewee: They take a lot of pain medicine. It's a little challenging because it's hard to draw the line between what's legitimate postoperative discomfort and what is drug seeking behavior. We try and stay away from the drugs like Dilaudid. Interviewer: What works to treat their pain? Interviewee: I try and use nonopioid medications, but otherwise just titrate the dose of standard opioids. Interviewer: What has not worked? Interviewee: What has not worked for their pain? Interviewer: Mm-hmm. Interviewee: Gosh, in early postop, expecting them to get by on acetaminophen and Motrin is unrealistic 'cause their sternotomies are painful, but I [unintelligible 13:30] hasn't worked, give 'em enough opiates it feels okay. Then there are the other drugs, Toradol and things like that, but once they're out a few days it'll change over to that. Interviewer: Do you consult another service for pain management? Interviewee: Not usually.	pain management, follow-up care, post-operation care
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group

	1006	Interviewer: All right, so this next little section gives us a couple of different options for IV antibiotic therapies. The question is what do you think about these options, what do you think a PICC line and going home? Interviewee: Negatory, I don't do that. Interviewer: What about a PICC line and staying in the hospital? Interviewee: That's what we do with a lot of patients. Interviewer: PICC line and going to a nursing facility? Interviewee: Depends on the nursing facility. It's amazing, they actually have overdoses on the addiction medicine floor in the hospital, it's amazing. If it's a nursing home that doesn't have a actual addiction medicine specialization I would not do it. Interviewer: I think you may have been answering this already as well, what is the safest option? Interviewee: In hospital therapy, if they require IV therapy, and ideally you'd have a oral drug that the organism is susceptible to and they can send 'em home on pills.	PICC line risk, follow-up care, post-operation care
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy	support for patient, SUD treatment, changes over time, desired changes, follow-up care

		and medical—or medication that really eliminated the craving would help a lot.	
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	multidisciplinary group, futility, desired changes, follow-up care, societal issue
	1012	eah. The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	medical model, follow-up care, support for patient
	1012	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment	timing of SUD tx, follow-up care, support for patient

		not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	
	1015	I: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	support for surgeons, multidisciplinary group, administration, frustration, follow-up care
	1015	I: How should this patient's opioid use disorder be treated and when? This is going back to Katie. S: Um…I don't think there is a time. I think it needs to be treated throughout the whole hospital stay and post-op. I don't think you say, ok now we've done surgery, now you start treatment. The treatment needs to start the minute they step in the door or become identified as drug users.	time of treatment, follow-up care, commitment to recovery
	1015	A PICC line and going home, a PICC line and staying in the hospital, and a PICC line and going to a nursing facility. Which of those do you feel is the safest option? S: Uh…well, up until I started here, I thought a PICC line and staying in the hospital, but I've sent a number of patients to nursing facilities for monitored antibiotics and I think that is perfectly fine.	PICC line risk, follow-up care
	1010	In people who inject drugs, do they from your perspective have different operative mortality or post-op complications? They, uh, it's a difficult question to answer because they are younger than the average. So, I would say that their outcomes are better than the outcomes from the standard AV or the standard MV that we do. So, thinking out loud here, their operative outcomes are actually better than outcomes of the standard population.	post-operation care, follow-up care, risk evaluation

	1010	Does a history of injecting drugs impact what type of valve you would choose? It does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	discussing addiction, follow-up care, post-operation care, accountability, support for surgeons
	1010	Tell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, accountability, deservingness, follow-up care, protocol, risk evaluation

	1010	You operate on Katie and she does well. She is linked into a methadone maintenance program. About 1 year later she is back in the hospital and she now has prosthetic valve endocarditis. Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. Any specific cases come to mind? One, two, three, four in 10 seconds. Tell me your thoughts about management decisions in these cases The issue starts I think earlier. And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of their endocarditis that its really not indicated to operate on someone like them.	deservingness, follow-up care, pre-operation care, risk evaluation
	1010	I would certainly not put a PICC line in someone then send them home. If they came back because of documented drug use, then I think that is a disservice to the patient. PICC line and hospital I would have no issue with that that is usually what we do. PICC line and facility, there are two facilities that come to mind that patient's themselves know that it is easier for them to get drugs there than get drugs at home. PICC line and [specific rehab] I would say yes. PICC line and uh what's the one ? [Specific facility] Yes [specific facility], no. Uh there is another one too ? [Specific facility] [Specific facility], no. You know uh, I think talking to the patient and see what they think	protocol, PICC line risk, follow-up care, priorities

		because you know they are addicted but they are not, you know they could be bad, they could be good, they could be very smart, they could be dumb, they could be anything, but they're addicted. Just like you know it makes no sense when someone talks to a patient loud, they're not deaf, they just have coronary disease, it's the same thing as well.	
	1014	S: It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	multidisciplinary group, post-operation care, follow-up care, changes over time
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	support for surgeons, insurance, follow-up care, changes over time

	1014	S: Uh, so, um, so, hopefully, they're helping us. I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before.	SUD treatment, follow-up care, stigma , commitment to recovery
	1014	Um, try to educate the patient as much as we can, but again, you're talking to the wrong guy. We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over.	lack of knowledge, lack of resources, frustration, follow-up care, desired changes
	1014	S: No, I'm glad somebody…I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go	societal issue, insurance, follow-up care, regional differences, multidisciplinary group

		to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that. We don't, we don't.	
	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have small kids and they're taking care of them or someone else is taking care of them- the whole family, partner situation is not always the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	follow-up care, insurance, lack of resources
	1002	Interviewer: Some hospitals can have a multidisciplinary group to evaluate these specific patients and cases. Do you know if [Tess] has that? Respondent: I don't know. Interviewer: Do you think it would be helpful to have? Respondent: I think so. Interviewer: Who do you imagine would be there? Respondent: [The patient], cardiology, and then some other pain control. What else? Like, pharmacists and then coordinators who can reach out to the family. I think that's about it, yeah.	multidisciplinary group, follow-up care

	1003	Yeah, we – as you probably know, we're involved in a study looking at that - Dr. Wurcel is the lead investigator on that – what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	data, follow-up care, prevalence of endocarditis, post-operation care
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	data, discussing addiction, follow-up care, multidisciplinary group
	1003	Yeah. Well, they would undergo – we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and	SUD treatment, commitment to recovery, discussing addiction, follow-up care, multidisciplinary group, post-operation care, protocol

		conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive	
	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards.	discussing addiction, SUD treatment, collaboration with addiction medicine, commitment to recovery, empathy, follow-up care, patient consent
	1003	Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be	SUD treatment, follow-up care, knowledge, protocol

		interested in doing that, but it's you know, right now, not practical. For me.	
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	accountability, changes over time, collaboration with addiction medicine, commitment to recovery, follow-up care, multidisciplinary group
	1003	Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously. If it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery.	follow-up care, post-operation care, relapse, SUD treatment, support for patient
	1003	Most of the time, someone comes back with a second valve operation, the existing valve they have is going to be infected. But in the rare circumstance not the case, we would offer them surgery, certainly. And again, operation does [unintelligible] more risk, because there is scar tissue on the heart and so forth. Interviewer: Mm-hmm. Or, what if it was like a mechanical valve that had been used the first time?	follow-up care, risk evaluation

		Respondent: Yeah. We've seen that. Well, we'd take it out and put another valve in; probably another mechanical, unless they've shown that they can't tolerate Coumadin. But we'll put a mechanical in and if they can – they do tolerate Coumadin, yeah.	
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	support for surgeons, insurance, follow-up care, changes over time, responsibility (secondary), rationalization (secondary)
	1014	S: No, I'm glad somebody…I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with	societal issue, insurance, follow-up care, regional differences, multidisciplinary group

		me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that. We don't, we don't.	
	1005	Interviewer: Looking back, I guess on similar situations, are there any things that you would change about approaches you've taken to these types of patients before? Interviewee: I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration, patient consent
	1005	Interviewer: How should this patient in that vignette have the opioid use disorder treated and win? Interviewee: Well that patient's critically ill, so that patient needs to be—should probably be in the hospital for six weeks, because if she gets better from her shock and then gets tuned up and then have surgery, then she'll need probably two to four weeks of postoperative IV antibiotics in the hospital, and then we prefer to discharge straight to rehab.	post-operation care, SUD treatment, PICC line risk, follow-up care, save lives

	1014	It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	multidisciplinary group, follow-up care, post-operation care, futility, changes over time
	1014	I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation.	support for surgeons, insurance, follow-up care, changes over time
	1014	I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before. I don't have the answers.	commitment to recovery, stigma , SUD treatment, follow-up care
	1014	We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients	lack of knowledge, lack of resources, follow-up care, desired changes, frustration, post-operation care, support for patient

		just because we have to, at some point in their lives, but this should just be short-lived and other people should take over	
	1014	I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that.	multidisciplinary group, follow-up care, regional differences, seriousness, insurance, lack of resources

	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility
	1009	What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the	frustration, support for patient, SUD treatment, follow-up care, reinfection, support for surgeons, administration, desired changes

		initial operation. The most frustrating thing is when these patients come back.	
	1009	What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up.	support for surgeons, administration, SUD treatment, follow-up care
	1009	Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	administration, follow-up care, priorities, multidisciplinary group
	1009	So for post-operative care, thinking about these options, if you'd give someone a pick line and send them home, give them a pick line and have them stay in the hospital, or give them a PICC line and send them to a nursing facility? Safest option, best for the patient? Surgeon: For us, it's not by choice. No visiting nurse group in the state will accept a patient with the history of intravenous drug abuse who has a PICC line. So we can't send them home with a PICC line. So it's either they go to a nursing home or they stay in the hospital. If they're totally stable, to me it doesn't matter where they go. As long as they complete their course of antibiotics. You know, it's frustrating when these patients, again, some of whom get the PICC line. I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so	PICC line risk, frustration, follow-up care, lack of resources, protocol, patient story

		they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	
	1009	In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery.	support for patient, multidisciplinary group, post-operation care, follow-up care
	1009	And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed.	time constraints, lack of resources, follow-up care, medical model, post-operation care, multidisciplinary group
	1009	So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such	post-operation care, follow-up care, frustration, multidisciplinary group, accountability, desired changes

		attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1009	How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	disagreements (professional), accountability, frustration, multidisciplinary group, follow-up care, societal issue, desired changes
	1009	I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about	collaboration with addiction medicine, priorities, follow-up care, changes over time, discussing addiction, frustration, futility

		this. That's great. But it's what happens when they leave the hospital.	
	1001	Yeah, I think this patient most likely would require a [homograft] in the beginning, to be honest, where [the abscess is confirmed]. And the reinfection of root abscess – a homograft in the same location – would almost mean 100-percent mortality, to be honest. [Off-mic] So technically very difficult to treat, but certainly everybody is different. I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	follow-up care, multiple surgeries
Frustration			
	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who	patient story, commitment to recovery, futility, frustration, deservingness, redemption (secondary)

		was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail.	time between operations, commitment to recovery, frustration, futility
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives

		gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation

	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	multiple surgeries, deservingness, lack of resources, commitment to recovery, frustration, futility, reinfection, relapse
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	pregnancy, multidisciplinary group, risk evaluation, stigma , frustration, deservingness
	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision.	liability of medical professionals, tx compared to colleagues, support for patient, support for surgeons, deservingness, administration, frustration

		Because yes, I have to take care of the patient, but I have to take care of myself as well.	
	1010	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? They seem to uh, they seem to, not everyone, but many of them seem to talk better than I do and have more friends among the consulting services, but they don't end up operating on them I end up operating on them. I think I am a very direct person and that doesn't help me. Uh because I may rub someone the wrong way by telling them what I think, someone else may tell them what they want to hear which may make them feel good, but they don't operate. So uh, I mean I am a very direct person and the only thing that helps is going to bed at night and looking at myself in the mirror and I can say yeah, I am ok. But that doesn't help with your daily interactions.	tx compared to colleagues, disagreements (professional), frustration, multidisciplinary group
	1010	he one thing that I have found useful in these meetings is that many people who may have thought that you are like the cold-hearted surgeon because you just wrote a note that no I don't think this person should have an operation hopefully, they will see that you are actually a human being. They're the ones that talk about being open minded and all this stuff but sometimes I don't think they are. So, if they meet you in person and have a discussion maybe they will see your viewpoint too, if they want to. So, I think they are very good. I think every time you bring people together and discuss something it is always good and people who hide behind an email, keyboard, app, I think that is bad.	multidisciplinary group, frustration, empathy

	1008	what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	risk evaluation, deservingness, multiple surgeries, post-operation care, relapse, reinfection, commitment to recovery, follow-up care, frustration, futility
	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration with addiction medicine, data, relapse, frustration, futility

	1008	What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, multiple surgeries, risk evaluation, stigma , frustration, futility, paternalism
	1008	Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an	liver vs heart, cost, deservingness, medical model, relapse, frustration, paternalism, reinfection

		alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	
	1008	has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach.	disagreements (professional), frustration
	1008	Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school.	societal issue, deservingness, frustration, accountability
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	perception of risk in PWID, stigma , paternalism, frustration, futility

	1016	I: You didn't do the initial one, so they're coming back to you and you're seeing them for the first time… S: Yeah, because they, I don't want to say turned or refused from that hospital that they went to, or they're like, I've already been at this hospital, I'm going to go to a different hospital. I: How often does that happen? S: A lot.	reinfection, frustration, transient, second chance
	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1006	Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	desired changes, societal issue, stigma , futility, frustration

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID
	1006	I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation.	disagreements (professional), futility, seriousness, frustration, relapse
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	liver vs heart, deservingness, frustration, reinfection, relapse, commitment to recovery

	1006	Interviewer: All right, so this next little section gives us a couple of different options for IV antibiotic therapies. The question is what do you think about these options, what do you think a PICC line and going home? Interviewee: Negatory, I don't do that. Interviewer: What about a PICC line and staying in the hospital? Interviewee: That's what we do with a lot of patients. Interviewer: PICC line and going to a nursing facility? Interviewee: Depends on the nursing facility. It's amazing, they actually have overdoses on the addiction medicine floor in the hospital, it's amazing. If it's a nursing home that doesn't have a actual addiction medicine specialization I would not do it.	post-operation care, PICC line risk, frustration, follow-up care
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle	tx compared to broader, tx compared to colleagues, frustration, deservingness, empathy, societal issue
	1006	I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young.	lack of knowledge, stigma , perception of risk in PWID, frustration, patient story, paternalism

	1002	Interviewer: What is your sense about how you approach these patients in this population compared to your colleagues? Do you think it's similar? Different? Respondent: Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	tx compared to colleagues, second chance, reinfection, relapse, deservingness, commitment to recovery, frustration, futility, perception of risk in PWID
	1017	: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for patient, frustration, administration, follow-up care, lack of resources, multidisciplinary group
	1017	I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us	deservingness, stigma , paternalism, perception of risk in PWID, futility, frustration, liability of medical professionals
	1017	Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	frustration, desired changes, multidisciplinary group, support for surgeons, accountability, disagreements (professional)

	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness.	frustration, futility, commitment to recovery, liability of medical professionals, priorities, relapse
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would	post-operation care, PICC line risk, futility, frustration, follow-up care, perception of risk in PWID, desired changes, protocol, support for patient

		prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	
	1003	Respondent: Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive.	desired changes, risk evaluation, save lives, pre-operation care, time constraints, frustration, seriousness
	1003	I just wish there was more – I just wish all the people involved in the care of these patients realize that there's certain times you've got to move ahead and intervene soon. So, it's part of my job, actually, to educate people. And it's been a struggle. Yeah.	frustration, time constraints
	1003	There should be, but there's not, because we – there's a lot of things in cardiac surgery that are now – there's task forces and they establish guidelines, that you're supposed to adhere, too for various – when to operate on someone with a valve problem; when to operate on someone with a coronary problem. Aortic problem. Heart failure problem. But I'm not seeing this addressed in our literature – when to operate on someone with endocarditis who uses drugs. I'm not sure there's anything on when to operate on someone with endocarditis, period. I'm not aware of any consensus statements about that. There should be, but there's not.	protocol, data, frustration

	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	multidisciplinary group, collaboration with addiction medicine, support for surgeons, accountability, frustration, futility, lack of resources, post-operation care

	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to	support for surgeons, administration, tx compared to broader, accountability, desired changes, follow-up care, frustration, lack of resources, post-operation care, multidisciplinary group

		do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	
	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation.	futility, frustration, deservingness, protocol, tx compared to colleagues, reinfection, commitment to recovery

		This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	
	1009	Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three	tx compared to colleagues, deservingness, collaboration with addiction medicine, multidisciplinary group, lack of resources, frustration, accountability, desired changes, follow-up care

		weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1009	nterviewer: I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration with addiction medicine, discussing addiction, frustration, futility

	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	deservingness, follow-up care, relapse, futility, frustration, tx compared to colleagues, reinfection, defensive
	1011	maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the time. It's not like these patients are going back to their families, their grandparents, or an aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own police I think is a little too much to ask of them.	lack of resources, administration, empathy, frustration, support for patient, PICC line risk, paternalism
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration

		began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	
	1017	S: Been doing this a long time. There are a lot of cases. There is the case of BLANK BLANK. So BLANK BLANK was a 30-year-old heroin user from the streets of BLANK who basically had endocarditis. I find him a very charming guy, so I did one valve replacement. About, oh, I don't know, 6 months later, he comes back and he now has still been using, and he promised me he'd stop. So I reoperated on him and did a homograft root replacement on him. Did great, actually. Six month later, he comes back and he's been using again, and now he's developed a big pseudoaneusrym that is a rupture of, uh, where we reconstructed him, so there's this big aneurysm. And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding. Recovered, and literally six months later I got a call that he had now infected his homograft because he's still using. So, I said, we're not going to do anything. I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point. Um, so that's my, my case that I will never forget about recidivism in drug users.	relapse, multiple surgeries, frustration, empathy
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group

		will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	
	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness	frustration, priorities, futility, relapse, commitment to recovery, liability of medical professionals
	1015	: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to,	support for surgeons, accountability, follow-up care, administration, frustration

		you know, put them on someone else's service once their surgical problems are over.	
	1015	people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	liability of medical professionals, disagreements (professional), accountability, multidisciplinary group, frustration
	1001	Respondent: It's tough. It's difficult. I think there is no exception for those patients who require more narcotics or complain – you know, more pain than a regular patient. That's just our [experience]. Certainly it is difficult to take care of those patients, postoperative.	pain management, post-operation care, frustration
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	stigma , discussing addiction, liver vs heart, deservingness, frustration, futility
	1004	, imagine that you've been operating on Katie, she's done well, she's linked into a methadone maintenance program, and one year later she's back in the hospital; now she has prosthetic valve endocarditis. So, like, have you seen this in people who inject drugs? Like, do you have any specific cases that come to mind? R: Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	priorities, commitment to recovery, deservingness, frustration, futility, perception of risk in PWID, contract

	1004	R: Would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? I: Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation	commitment to recovery, stigma , pregnancy, perception of risk in PWID, frustration, discussing addiction, futility
	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration
	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care
	1005	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, discussing addiction, frustration, post-operation care

	1005	I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	tx compared to broader, cost, desired changes, frustration
	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	commitment to recovery, deservingness, follow-up care, frustration, futility, post-operation care, reinfection, relapse, risk evaluation
	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	paternalism, deservingness, accountability, commitment to recovery, discussing addiction, frustration, futility, multiple surgeries, second chance, stigma

	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration with addiction medicine, multidisciplinary group, futility, frustration
	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance

	1008	Interviewer: Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	liver vs heart, deservingness, futility, frustration, relapse, SUD treatment

	1008	Do you think that the treatment for endocarditis in the people who inject drugs is going to -- will change in the future? Respondent: I hope so, but I doubt it. Interviewer: Okay. Respondent: I don't see any wonder drug coming around or other therapy. I think it's going to be this way for the next 10 years. Interviewer: And then maybe in the 10 years after that? Who knows? Respondent: Who knows. Interviewer: Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school. Interviewer: So, who like -- I don't know. Who would need to make changes then? Everyone? Respondent: Everybody. Interviewer: Yeah. Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	changes over time, pain management, accountability, cost, deservingness, frustration

	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	deservingness, stigma , paternalism, frustration, futility, multidisciplinary group
	1012	Does it impact what type of valve you chose? Yes. How so? Because generally they tend to be younger patients and younger patients if they have a valve lesion that's congenital or infectious from some other unfortune, unfortunate happenstance then you would probably advise them on a mechanical heart valve, mechanical heart valves require coumadin, and um, if you have a mechanical heart valve and you don't take your coumadin it's very very dangerous. So, most surgeons, I think do not put mechanical heart valves in people who are known drug users, unless they've been known to, you know, abstain for a long period of time, so you know, and we have all been burned by making exceptions to that rule.	age, perception of risk in PWID, deservingness, commitment to recovery, frustration
	1012	So, most surgeons, I think do not put mechanical heart valves in people who are known drug users, unless they've been known to, you know, abstain for a long period of time, so you know, and we have all been burned by making exceptions to that rule.	defensive, frustration
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes.	discussing addiction, commitment to recovery, accountability, frustration, futility, patient consent, contract

	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	contract, collaboration with addiction medicine, paternalism, multiple surgeries, tx compared to colleagues, support for patient, frustration
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	perception of risk in PWID, stigma , paternalism, frustration, futility

	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration
	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care
	1005	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, discussing addiction, frustration, post-operation care
	1005	I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	tx compared to broader, cost, desired changes, frustration

	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	S: Been doing this a long time. There are a lot of cases. There is the case of BLANK BLANK. So BLANK BLANK was a 30-year-old heroin user from the streets of BLANK who basically had endocarditis. I find him a very charming guy, so I did one valve replacement. About, oh, I don't know, 6 months later, he comes back and he now has still been using, and he promised me he'd stop. So I reoperated on him and did a homograft root replacement on him. Did great, actually. Six month later, he comes back and he's been using again, and now he's developed a big pseudoaneusrym that is a rupture of, uh, where we reconstructed him, so there's this big aneurysm. And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding. Recovered, and literally six months later I got a call that he had now infected his homograft because he's still using. So, I said, we're not going to do anything. I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point. Um, so that's my, my case that I will never forget about recidivism in drug users.	relapse, multiple surgeries, frustration, empathy

	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	liver vs heart, stigma , deservingness, frustration, futility
	1004	Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	commitment to recovery, frustration, futility, priorities, risk evaluation, deservingness
	1004	Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation.	pregnancy, commitment to recovery, discussing addiction, frustration, futility, stigma

	1016	You didn't do the initial one, so they're coming back to you and you're seeing them for the first time… S: Yeah, because they, I don't want to say turned or refused from that hospital that they went to, or they're like, I've already been at this hospital, I'm going to go to a different hospital. I: How often does that happen? S: A lot. I: Really? S: I think it depends, too, on, you know, BLANK has a lot of hospitals all in one area. But we do get a lot of doctor shopping and, um, transfers.	frustration, reinfection, second chance, transient
	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	discussing addiction, commitment to recovery, follow-up care, frustration, patient story, priorities, risk evaluation, societal issue, SUD treatment

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail.	time between operations, commitment to recovery, frustration, futility

	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation

	1012	oes it impact what type of valve you chose? Yes. How so? Because generally they tend to be younger patients and younger patients if they have a valve lesion that's congenital or infectious from some other unfortune, unfortunate happenstance then you would probably advise them on a mechanical heart valve, mechanical heart valves require coumadin, and um, if you have a mechanical heart valve and you don't take your coumadin it's very very dangerous. So, most surgeons, I think do not put mechanical heart valves in people who are known drug users, unless they've been known to, you know, abstain for a long period of time, so you know, and we have all been burned by making exceptions to that rule.	age, perception of risk in PWID, frustration
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes. Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging.	commitment to recovery, discussing addiction, frustration, accountability, patient consent, contract

	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, futility, frustration, deservingness
	1012	Tell me your thoughts about management decisions in these cases So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up, and now you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a	frustration, futility, seriousness, stigma , risk evaluation, relapse

		problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not.	
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	tx compared to colleagues, frustration, paternalism, multiple surgeries, contract
	1015	I: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	support for surgeons, multidisciplinary group, administration, frustration, follow-up care
	1015	To close, is there anything I haven't asked you about that you would like to say? S: Uh…I think that, um, people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary	liability of medical professionals, disagreements (professional), multidisciplinary group, frustration, accountability

		meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	
	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	commitment to recovery, deservingness, second chance, frustration, futility, reinfection, relapse, risk evaluation
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	pregnancy, stigma , frustration, deservingness, multidisciplinary group

	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, deservingness, administration, frustration
	1014	Um, try to educate the patient as much as we can, but again, you're talking to the wrong guy. We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over.	lack of knowledge, lack of resources, frustration, follow-up care, desired changes
	1014	S: Yeah, I remember, I did not operate on them the first time around, one of, one of our my partners did. And, you know, and sometimes, those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good	patient story, frustration, futility, multiple surgeries, seriousness

		feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her through a big operation and go back to square one down the road? When is enough? When enough is enough?	
	1002	Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	commitment to recovery, deservingness, frustration, futility, risk evaluation, tx compared to colleagues, disagreements (professional)
	1005	Interviewer: Looking back, I guess on similar situations, are there any things that you would change about approaches you've taken to these types of patients before? Interviewee: I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration, patient consent
	1005	Interviewee: Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary. Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes.	multiple surgeries, pre-operation care, deservingness, reinfection, relapse, accountability, commitment to recovery, frustration

	1005	terviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, accountability, insurance, discussing addiction, frustration, post-operation care
	1005	nterviewer: Are there any changes that you would like to see with regards for treatment of endocarditis? Interviewee: I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	desired changes, multidisciplinary group, protocol, cost, insurance, tx compared to broader, frustration
	1014	We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over	lack of knowledge, lack of resources, follow-up care, desired changes, frustration, post-operation care, support for patient

	1014	those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her through a big operation and go back to square one down the road? When is enough? When enough is enough?	seriousness, futility, frustration, multiple surgeries, patient story
	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody?	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility

		Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, “Oh, they need the valve surgery.” And then when it’s time for someone to take care of these patients, long term, there’s no one there. Part of it is patients don’t follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they’re not there to take care of the patient afterwards. There’s a saying “Beware of the courage of the noncombatant.” You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It’s one thing when we do the initial operation. The most frustrating thing is when these patients come back.	frustration, support for patient, SUD treatment, follow-up care, reinfection, support for surgeons, administration, desired changes
	1009	I think you look to see why they had prosthetic valve endocarditis and if it’s secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I’ve operated on patients two times, three times, but now I’m moving away from them. My partners are all generally one and done. So that’s kind of where I’m at now. I think if you have – if you reinfect the valve and you’ve been using again, even if it’s a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we’ll tell them, you know, we’ll say no, we’re not going to do it and then they’ll kind of get up in arms and they’ll say, well, we’re going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we’ll do it.	tx compared to broader, multiple surgeries, futility, tx compared to colleagues, support for surgeons, reinfection, protocol, frustration, patient story

		I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	
	1009	So for post-operative care, thinking about these options, if you'd give someone a pick line and send them home, give them a pick line and have them stay in the hospital, or give them a PICC line and send them to a nursing facility? Safest option, best for the patient? Surgeon: For us, it's not by choice. No visiting nurse group in the state will accept a patient with the history of intravenous drug abuse who has a PICC line. So we can't send them home with a PICC line. So it's either they go to a nursing home or they stay in the hospital. If they're totally stable, to me it doesn't matter where they go. As long as they complete their course of antibiotics. You know, it's frustrating when these patients, again, some of whom get the PICC line. I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	PICC line risk, frustration, follow-up care, lack of resources, protocol, patient story
	1009	So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	post-operation care, follow-up care, frustration, multidisciplinary group, accountability, desired changes

		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1009	How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	disagreements (professional), accountability, frustration, multidisciplinary group, follow-up care, societal issue, desired changes
	1009	And some hospitals convene a multidisciplinary group to evaluate people who inject drugs before their valve replacement. Does this hospital do that? Surgeon: No. Interviewer: Is that something you'd like to see? Surgeon: It probably wouldn't matter. Who's in the multidisciplinary group, right? Interviewer: Who do you think should be? Surgeon: I mean, really, when I have patients I speak with the Infectious Disease doctor and the cardiologist. The ultimate decision on whether the patient gets an operation is based on the surgeon, regardless of what the Infectious Disease doctor or cardiologist say. I think when these groups get together I think they spend an hour talking about nothing. You can get to the heart of the matter very quickly and so it would probably be a waste of – you	multidisciplinary group, time constraints, frustration, futility

		know, there's not enough hours in a day to sit through an hour-long meeting. I think you can really get to the heart of the matter in terms of what needs to be done in just a few minutes.	
	1009	I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration with addiction medicine, priorities, follow-up care, changes over time, discussing addiction, frustration, futility
Futility			

	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, futility, frustration, deservingness, redemption (secondary)
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good.	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons

		Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail.	time between operations, commitment to recovery, frustration, futility
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives

	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	multidisciplinary group, futility, desired changes, follow-up care, societal issue

	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	multiple surgeries, deservingness, lack of resources, commitment to recovery, frustration, futility, reinfection, relapse
	1010	And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of their endocarditis that its really not indicated to operate on someone like them.	relapse, multiple surgeries, futility, risk evaluation, pre-operation care, deservingness

	1019	So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis	liver vs heart, accountability, commitment to recovery, deservingness, futility, stigma

	1019	OK. So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis Right because we have thousands of bioprostheses on the shelf. Um, not thousands maybe tens of… tens of… maybe a hundred, I don't know. [LAUGHTER] I don't know how many we have on shelf. But, we have lots. Right Point is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going	liver vs heart, commitment to recovery, futility, accountability, stigma

		to take care of the organs they’re going to get.	
	1008	what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	risk evaluation, deservingness, multiple surgeries, post-operation care, relapse, reinfection, commitment to recovery, follow-up care, frustration, futility

	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration with addiction medicine, data, relapse, frustration, futility
	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	administration, support for surgeons, PICC line risk, futility

	1008	What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, multiple surgeries, risk evaluation, stigma , frustration, futility, paternalism
	1008	like how -- what's the success rate of surgery versus -- or effectiveness rate, I guess, of surgery versus antibiotics? Respondent: For prosthetic valve? Interviewer: Yeah. Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time.	futility, deservingness, priorities, medical model, reinfection

	1008	Okay. Okay. And then what about like age? So, if a 25-year-old with prosthetic valve endocarditis, would you look at that person differently than someone who's 55 and had prosthetic valve endocarditis? Respondent: Unless they're really elderly, I don't think that would have much impact. Interviewer: Okay. And if they were elderly? Respondent: Well, we're talking about drug addicts or? Interviewer: Yeah, I think so, in this case. Respondent: Age doesn't matter. There aren't too many 80-year-old drug addicts. There's some 50-year-old but they usually die when they're 30, 40	age, stigma , deservingness, futility
	1008	Some hospitals have a multi-disciplinary group to evaluate people who inject drugs for valve replacements. Does this hospital have something like that? Respondent: Yeah. Interviewer: Okay. Who comes to the meetings? Do you go? Respondent: Yeah, we do. Psychiatrists, they have the drug rehab people. Usually, we don't meet in a room. We just -- everybody sees the patient. Interviewer: Okay. Has that been helpful? Respondent: I think so. Interviewer: Okay. Is there anyone else you'd like to see on the team? Respondent: Not really. Interviewer: Okay. Respondent: Most of these patients just keep doing what they're doing, anyway. Doesn't matter who talks to them, but.	multidisciplinary group, futility

	1008	So, like are there any guidelines or standards of care used at the hospital when you assess people who inject drugs for valve replacement? Respondent: Mainly the things that we've been talking about. Interviewer: Okay. Respondent: That we assume that they're going to quit taking drugs after the surgery, and that's a big assumption. Interviewer: Yeah. Respondent: And if they re-infect while actively taking drugs, they don't get another procedure. That's pretty much the guidelines. Otherwise, they're treated just like everybody else.	futility, protocol
	1019	OK. So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because	liver vs heart, commitment to recovery, futility, accountability, stigma

		they're going to destroy this bioprosthesis Right because we have thousands of bioprostheses on the shelf. Um, not thousands maybe tens of… tens of… maybe a hundred, I don't know. [LAUGHTER] I don't know how many we have on shelf. But, we have lots. Right Point is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going to take care of the organs they're going to get.	
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	perception of risk in PWID, stigma , paternalism, frustration, futility
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness,	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness

		and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	
	1006	Interviewer: How did you approach the case? Interviewee: Well, there have been a few of 'em, the ones that were operable I operated on, the ones that had somewhat worse problems, you can even describe everything. If they were in renal failure and had a stroke, I might not operate on them. Interviewer: Looking back is there anything you would change about your approach? Interviewee: There's some instances where I would have operated sooner, but if the person arrives in shock, since I started CV surgery, unless there's a strong reason not to operate, you go ahead and repair the valve.	pre-operation care, time between operations, futility, perception of risk in PWID, priorities
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good.	support for surgeons, changes over time, follow-up care, PICC line risk, administration, collaboration with addiction medicine, futility, societal issue
	1006	Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	desired changes, societal issue, stigma , futility, frustration

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID
	1006	I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation.	disagreements (professional), futility, seriousness, frustration, relapse
	1006	nterviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you	commitment to recovery, data, futility, multiple surgeries, reinfection, deservingness, priorities, relapse

		get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	
	1006	Interviewee: Yeah, we see them. Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	deservingness, second chance, medical model, reinfection, commitment to recovery, data, futility, relapse
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail	time between operations, futility, stigma , deservingness, reinfection, commitment to recovery
	1006	Interviewer: Tell me about the operative risks of reoperation versus that original operation? Interviewee: Well, that's a secondary, sternotomy, you have to cut out the infected prosthetic valve, removing all of the prosthetic valve material is a challenge and it could retain infection. It's a much higher risk procedure, or is a higher risk procedure, I shouldn't say much, that's quantitative.	perception of risk in PWID, multiple surgeries, deservingness, futility
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	relapse, perception of risk in PWID, commitment to recovery, futility, reinfection, deservingness

	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving	multidisciplinary group, support for patient, societal issue, lack of resources, futility, desired changes, follow-up care
	1002	Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result.	risk evaluation, priorities, patient consent, futility, liability of medical professionals, seriousness
	1002	Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the surgery? So yeah, those are the first things we come up with.	support for patient, risk evaluation, priorities, futility, patient story
	1002	Interviewer: Is there a certain point where you think the person is committed enough? What makes you feel like someone is committed enough where you would consider it? Respondent: Yeah, if the patient is not willing to stop, then why do we need to do the surgery	commitment to recovery, deservingness, futility
	1002	If a patient has 100-percent mortality without surgery but have a 50-percent mortality with operation, is it worth taking the patient to the OR? So if you know they will not survive without the surgery –	age, futility, deservingness

		Respondent: Yeah, it totally depends on the patient, you know? The age or whatever. Yeah, if the patient is 80 years old or something, then why do I need to take the patient?	
	1002	Interviewer: What is your sense about how you approach these patients in this population compared to your colleagues? Do you think it's similar? Different? Respondent: Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	tx compared to colleagues, second chance, reinfection, relapse, deservingness, commitment to recovery, frustration, futility, perception of risk in PWID
	1017	I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us	deservingness, stigma , paternalism, perception of risk in PWID, futility, frustration, liability of medical professionals
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	commitment to recovery, deservingness, futility, stigma , contract, accountability, relapse
	1017	I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you,	stigma , empathy, futility
	1017	So, what do you think about these three options? A PICC line and go home, a PICC line and stay in the hospital, and a PICC line and go to a nursing facility. S: I think they are… I: Like which is the safest option, which one's best for the patient? S: I think it depends on each, I think it's a individual choice, depends what resources they have available to them, and again where are they in their addiction and, you know, what we are doing to support them. So, in the, you know, uh, without any resources, probably the safest thing to do is to literally keep them in the hospital until their antibiotics are up, second safest thing is a nursing home, and	PICC line risk, support for patient, commitment to recovery, futility

		third safest thing is home, but I think that is the most vulnerable that they are, although, you know, we have had these patients score drugs in the hospital, have friends bring them in, so, in some respects, for the patients that are truly, um, in the throes of their addiction, it doesn't matter where you send them. There is no safe place.	
	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness.	frustration, futility, commitment to recovery, liability of medical professionals, priorities, relapse
	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	futility, deservingness, commitment to recovery, time between operations, multiple surgeries, liability of medical professionals

	1013	If the patient had a 100% mortality without the surgery and a 50% operative mortality is it worth taking the patient to the OR? So, that's the way it usually gets presented to you by the medical student on the medicine service and I don't think about it that way. The way I think about it is the question of do I think that an operation is in the patient's best interest or not. So, lets imagine that the patient has, is an IV drug user, they've got prosthetic endocarditis, they've continually been using intravenous drugs, even in the hospital, and we see that, too right? Um, and then you presented that person to me and you say ok they have prosthetic valve endocarditis, its staph endocarditis, they've got an annular abscess they've got a mortality rate of 100% if you don't operate and they have been using drugs while they have been in the hospital, I don't think an operation is in their best interest. Could we potentially get then through the operation from a technical standpoint, yes, but do I think that we have a likelihood of restoring them to health, I would say no because their underlying condition is so severe. So, I think it is very seldom as simple a question as 100% without and 50% with. Have I adequately pivoted? And avoided answering that question? That's the way I think about it.	perception of risk in PWID, liability of medical professionals, futility, deservingness
	1003	f it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery. So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	relapse, stigma , paternalism, futility, commitment to recovery, multiple surgeries, deservingness

	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	post-operation care, PICC line risk, futility, frustration, follow-up care, perception of risk in PWID, desired changes, protocol, support for patient
	1009	Interviewer: Mortality, is that something, or does it impact what type of valve you might give them? Surgeon: Mortality from the sense of the operation? Interviewer: Mm-hmm. Surgeon: It's something you think about. You always want to offer and operation where you think there's a mortality benefit, that they have a better chance of living with the operation than without. Sometimes, you know, questions of futility come into play but that comes into play later rather than the initial evaluation. Interviewer: Can you say more about the futility piece?	futility, post-operation care, priorities, risk evaluation

		Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if you fix the heart, they're never going to return to a quality of life. Other times there are complications that have arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	
	1009	Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around.	accountability, discussing addiction, protocol, futility, medical model, paternalism, patient story

		Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I just say if you use any sort of, you know, if you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on him twice and it came out that he doesn't care about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn't have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that	multidisciplinary group, collaboration with addiction medicine, support for surgeons, accountability, frustration, futility, lack of resources, post-operation care

		after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, “Oh, they need the valve surgery.” And then when it’s time for someone to take care of these patients, long term, there’s no one there. Part of it is patients don’t follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they’re not there to take care of the patient afterwards. There’s a saying “Beware of the courage of the noncombatant.” You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	Interviewer: When talking to the patient, how does their commitment treatment sort of play into your surgical decisions, if it does? Surgeon: The initial time around I’ve never had a patient say they weren’t going to stop or they weren’t committed to not having this happen again. And so my partners I think they’ve had patients who say I don't care. You know, I’m gonna keep doing what I’m doing and I know they’ve declined to operate on patients. But I think you’re going to be meeting with them and speaking with them. But to me I’ve just never had someone who’s been that far gone where they’re like I don't care what you do I’m gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	commitment to recovery, futility, protocol, tx compared to colleagues

	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	futility, frustration, deservingness, protocol, tx compared to colleagues, reinfection, commitment to recovery
	1009	If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I	protocol, deservingness, futility, reinfection, relapse, risk evaluation

		don't feel comfortable doing it, acknowledging that, yes, the patient will die.	
	1009	Interviewer: And some hospitals convene a multidisciplinary group to evaluate people who inject drugs before their valve replacement. Does this hospital do that? Surgeon: No. Interviewer: Is that something you'd like to see? Surgeon: It probably wouldn't matter. Who's in the multidisciplinary group, right? Interviewer: Who do you think should be? Surgeon: I mean, really, when I have patients I speak with the Infectious Disease doctor and the cardiologist. The ultimate decision on whether the patient gets an operation is based on the surgeon, regardless of what the Infectious Disease doctor or cardiologist say. I think when these groups get together I think they spend an hour talking about nothing. You can get to the heart of the matter very quickly and so it would probably be a waste of – you know, there's not enough hours in a day to sit through an hour-long meeting. I think you can really get to the heart of the matter in terms of what needs to be done in just a few minutes.	multidisciplinary group, time constraints, futility
	1009	nterviewer: I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have	collaboration with addiction medicine, discussing addiction, frustration, futility

		these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	
	1009	Interviewer: Are there any guidelines or standards of care used this hospital when you're assessing people who inject drugs for valve replacements? Surgeon: No. I mean, there's no guideline on what to do if someone who injects drugs. The guidelines are based on a patient's medical condition and in terms of whether you think they need an operation or not. Do they have an indication but the guidelines – no guideline will every say you have to operate because surgical guidelines always incorporate surgeon judgment. You can have someone that you think has an indication for surgery but that you feel is not indicated for X, Y or Z reasons, or is futile. And so there's nothing that ever says you have to in the surgical guidelines for endocarditis.	protocol, futility
	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now.	discussing addiction, patient consent, futility, commitment to recovery
	1011	o, it is really hard to make a judgement as to what is going to happen based on their commitment. The way it does impact it is that somebody who is up front about that they are not going to stop using drugs and they're going to continue to use drugs in that case you have to question the utility of intervening.	deservingness, futility

	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	deservingness, follow-up care, relapse, futility, frustration, tx compared to colleagues, reinfection, defensive
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	futility, commitment to recovery, accountability, relapse, contract, deservingness
	1017	And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death	futility, empathy, stigma

		afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding	
	1017	I: So, what do you think about these three options? A PICC line and go home, a PICC line and stay in the hospital, and a PICC line and go to a nursing facility. S: I think they are… I: Like which is the safest option, which one's best for the patient? S: I think it depends on each, I think it's a individual choice, depends what resources they have available to them, and again where are they in their addiction and, you know, what we are doing to support them. So, in the, you know, uh, without any resources, probably the safest thing to do is to literally keep them in the hospital until their antibiotics are up, second safest thing is a nursing home, and third safest thing is home, but I think that is the most vulnerable that they are, although, you know, we have had these patients score drugs in the hospital, have friends bring them in, so, in some respects, for the patients that are truly, um, in the throes of their addiction, it doesn't matter where you send them. There is no safe place.	PICC line risk, futility, commitment to recovery
	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness	frustration, priorities, futility, relapse, commitment to recovery, liability of medical professionals

	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	deservingness, reinfection, multiple surgeries, time between operations, futility, liability of medical professionals
	1013	So, that's the way it usually gets presented to you by the medical student on the medicine service and I don't think about it that way. The way I think about it is the question of do I think that an operation is in the patient's best interest or not. So, lets imagine that the patient has, is an IV drug user, they've got prosthetic endocarditis, they've continually been using intravenous drugs, even in the hospital, and we see that, too right? Um, and then you presented that person to me and you say ok they have prosthetic valve endocarditis, its staph endocarditis, they've got an annular abscess they've got a mortality rate of 100% if you don't operate and they have been using drugs while they have been in the hospital, I don't think an operation is in their best interest. Could we potentially get then through the operation from a technical standpoint, yes, but do I think that we have a likelihood of restoring them to health, I would say no because their underlying condition is so severe. So, I think it is very seldom as simple a question as 100% without and 50% with. Have I adequately pivoted? And avoided answering that question? That's the way I think about it.	deservingness, liability of medical professionals, futility, risk evaluation
	1015	I: What do you think about drug rehab and is it different from drug detox? S: Um…the more and more I treat this disease, I feel it is a chronic disease and can be suppressed but not fully treated. So, yeah, I think that drug rehab has a place, but I don't know that, you know, once you, once you are a drug user you are pretty much always a drug user. The same way you would think of alcohol, you know.	rehab v detox, stigma , futility, liver vs heart

	1001	Interviewer: If a patient has 100-percent risk of mortality without surgery but a 50-percent risk of operative mortality with operation, do you think it's worth taking the patient to the OR? Respondent: If it's 100 percent, [then it is now], but it's hard. Sometimes we think patients are inoperable. It doesn't mean that the patient cannot – that the operative mortality will be 100 percent. It's hard. To be honest, if somebody has multiple-organ failure, than the surgery will be contraindicated. They cannot even survive anesthesia. So it's a different story. But a lot of people are [deemed] inoperable, not just based on the operative mortality itself. You know, it's related to other issues. Sometimes we take into consideration even the social issues – you know, the lifestyle or the age, for example. Interviewer: All calculated into the preoperative risk? Respondent: Right, yeah.	risk evaluation, societal issue, futility, pre-operation care, seriousness
	1001	nterviewer: Do you think the way you feel is also different from the way other physicians around the country or around the world are dealing with this issue? Respondent: It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to colleagues, multiple surgeries, futility, lack of resources, tx compared to broader, second chance
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn’t possibly try heroin and not know that it’s highly addictive, so in some ways it’s kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	stigma , discussing addiction, liver vs heart, deservingness, frustration, futility

	1004	, imagine that you've been operating on Katie, she's done well, she's linked into a methadone maintenance program, and one year later she's back in the hospital; now she has prosthetic valve endocarditis. So, like, have you seen this in people who inject drugs? Like, do you have any specific cases that come to mind? R: Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	priorities, commitment to recovery, deservingness, frustration, futility, perception of risk in PWID, contract
	1004	R: Would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? I: Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation	commitment to recovery, stigma , pregnancy, perception of risk in PWID, frustration, discussing addiction, futility
	1004	R: If the patient has 100 percent mortality without surgery, and like a 50 percent [operative] mortality, like would you say it's worth taking the patient to the operating room? I: That patient sounds inoperable, their mortality is too high, it's too high a risk	risk evaluation, futility, liability of medical professionals
	1004	And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	futility, deservingness, infection risk to surgeons, stigma , screening for ID, cost
	1005	We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	risk evaluation, deservingness, futility, stigma

	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	commitment to recovery, deservingness, follow-up care, frustration, futility, post-operation care, reinfection, relapse, risk evaluation
	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	paternalism, deservingness, accountability, commitment to recovery, discussing addiction, frustration, futility, multiple surgeries, second chance, stigma
	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration with addiction medicine, multidisciplinary group, futility, frustration

	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance
	1008	Interviewer: Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they	liver vs heart, deservingness, futility, frustration, relapse, SUD treatment

		may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	
	1008	Interviewer: Okay. Cool. And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, accountability, commitment to recovery, futility, post-operation care, priorities
	1008	Interviewer: Okay. So, in a case where like if the patient was definitely going to die without the surgery, like 100 percent mortality and had maybe 50 percent operative mortality? Respondent: Wouldn't matter. I would follow the same algorithm that I had before. If they came in shooting up drugs, they're not getting another operation. Interviewer: Okay. Wait. What about for folks who weren't injecting drugs, like -- Respondent: In the past? That had quit? Interviewer: Yeah. Respondent: Yeah, we would operate.	commitment to recovery, deservingness, futility, protocol, risk evaluation

	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues
	1008	Respondent: Most of these patients just keep doing what they're doing, anyway. Doesn't matter who talks to them, but.	futility
	1008	Respondent: That we assume that they're going to quit taking drugs after the surgery, and that's a big assumption. Interviewer: Yeah. Respondent: And if they re-infect while actively taking drugs, they don't get another procedure. That's pretty much the guidelines. Otherwise, they're treated just like everybody else.	futility, protocol
	1018	Does the patient’s commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it’s the first time they’ve come back I would still be willing to consider offering a surgical therapy, again it’s not always clear whether it is recurrent substance abuse or our failure to sterilize the field that’s responsible for that.	commitment to recovery, deservingness, second chance, liability of medical professionals, contract, futility, reinfection, multiple surgeries

	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	deservingness, stigma , paternalism, frustration, futility, multidisciplinary group
	1018	Do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? No. Does age impact your decision at all to operate? Yes in the extremes. You know a 90-year-old with terrible ventricular function, coronary disease, stroke, no I wouldn't but it's not really because of the cause of the endocarditis, it's just an assessment of all risk factors.	age, futility, seriousness
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	tx compared to broader, deservingness, liver vs heart, futility, paternalism
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing	discussing addiction, commitment to recovery, accountability, frustration, futility, patient consent, contract

		to do it again", but that is how the conversation usually goes.	
	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive
	1012	you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me	stigma , seriousness, relapse, reinfection, accountability, deservingness, follow-up care, multiple surgeries, futility, lack of resources

		that time and time again it does not. And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness. And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? I	
	1012	So reoperation for just a degenerating prosthetic valve probably carries a little bit extra risk but not too much, it's always a little harder because there is scar tissue and stuff, a reoperation in someone like this you know not only is there scar tissue, but then there is infection and inflammation and all that other stuff that can complicate the operation. So, it definitely will make the second operative riskier. You also have a patient who has already relapsed once and reinfected their valve and that certainly elevates the risk that that's going to happen a third time. So, I think the risks around the time of surgery go up and the risks afterwards go up a lot.	multiple surgeries, perception of risk in PWID, futility
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	perception of risk in PWID, stigma , paternalism, frustration, futility
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness

		going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	
	1005	We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	risk evaluation, deservingness, futility, stigma
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	futility, commitment to recovery, accountability, relapse, contract, deservingness
	1017	And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding	futility, empathy, stigma

	1017	I: So, what do you think about these three options? A PICC line and go home, a PICC line and stay in the hospital, and a PICC line and go to a nursing facility. S: I think they are… I: Like which is the safest option, which one's best for the patient? S: I think it depends on each, I think it's a individual choice, depends what resources they have available to them, and again where are they in their addiction and, you know, what we are doing to support them. So, in the, you know, uh, without any resources, probably the safest thing to do is to literally keep them in the hospital until their antibiotics are up, second safest thing is a nursing home, and third safest thing is home, but I think that is the most vulnerable that they are, although, you know, we have had these patients score drugs in the hospital, have friends bring them in, so, in some respects, for the patients that are truly, um, in the throes of their addiction, it doesn't matter where you send them. There is no safe place.	PICC line risk, futility, commitment to recovery
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	liver vs heart, stigma , deservingness, frustration, futility
	1004	Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	commitment to recovery, frustration, futility, priorities, risk evaluation, deservingness
	1004	Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation.	pregnancy, commitment to recovery, discussing addiction, frustration, futility, stigma

	1006	Interviewer: How did you approach the case? Interviewee: Well, there have been a few of 'em, the ones that were operable I operated on, the ones that had somewhat worse problems, you can even describe everything. If they were in renal failure and had a stroke, I might not operate on them. Interviewer: Looking back is there anything you would change about your approach? Interviewee: There's some instances where I would have operated sooner, but if the person arrives in shock, since I started CV surgery, unless there's a strong reason not to operate, you go ahead and repair the valve.	futility, priorities, perception of risk in PWID
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail.	time between operations, commitment to recovery, frustration, futility

	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation

	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	multidisciplinary group, futility, desired changes, follow-up care, societal issue
	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, futility, frustration, deservingness

	1012	Tell me your thoughts about management decisions in these cases So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up, and now you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not.	frustration, futility, seriousness, stigma , risk evaluation, relapse
	1012	Do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? I mean sometimes. Those things sometimes weigh into your decision, sometimes they have little kids and you know those things influence what you do, but in general no.	age, empathy, priorities, liability of medical professionals, futility
	1015	I: What do you think about drug rehab and is it different from drug detox? S: Um…the more and more I treat this disease, I feel it is a chronic disease and can be suppressed but not fully treated. So, yeah, I think that drug rehab has a place, but I don't know that, you know, once you, once you are a drug user you are pretty much always a drug user. The same way you would think of alcohol, you know.	stigma , liver vs heart, futility, rehab v detox
	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by	commitment to recovery, deservingness, second chance, frustration, futility, reinfection, relapse, risk evaluation

		case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	
	1014	S: I mean, uh, it's like, the initial impression for me is like alcoholism. I mean, that, that, that's a lifelong, you know, treatment. It's a lifelong management. They, they, they cannot get cured. I don't think that they'll ever get cured from that disorder. You know, it's like alcoholism, you know, 40 years out, one drink and you go back to where you were, so. It's a problem. It's a problem. So, um…	time of treatment, SUD treatment, futility
	1014	S: Yeah, I remember, I did not operate on them the first time around, one of, one of our my partners did. And, you know, and sometimes, those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her through a big operation and go back to square one down the road? When is enough? When enough is enough?	patient story, frustration, futility, multiple surgeries, seriousness

	1002	Respondent: How would I approach? So, preoperative evaluation – you know, how serious the cardiogenic shock is, actually. You know, if the patient is in severe shock, it just depends on if it's hemodynamic shock, or even more hemodynamic and also metabolic shock, which means if the liver is dead and the kidneys are dead, then why do we need to do the surgery? So that's one thing we need to make sure, the surgical indication about the shock. Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result. Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the surgery? So yeah, those are the first things we come up with.	pre-operation care, futility, cost
	1002	Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	commitment to recovery, deservingness, frustration, futility, risk evaluation, tx compared to colleagues, disagreements (professional)
	1003	But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	futility, risk evaluation, SUD treatment

	1003	So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	commitment to recovery, deservingness, futility
	1005	Interviewer: This is going to ask you to speak a little bit about the risks of a reoperation versus the original surgical procedure. Interviewee: Well reoperations always carry more risks. I think there's a higher pacemaker risk with any reoperation. Certainly a higher bleeding risk, stroke risk and length of operation. Interviewer: If a patient has 100 percent mortality without surgery and 50 percent operative mortality with an operation, is it worth taking the patient to the OR? Interviewee: We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	risk evaluation, multiple surgeries, futility, deservingness, stigma
	1014	It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	multidisciplinary group, follow-up care, post-operation care, futility, changes over time

	1014	I: How should this patient's–so back to Katie—how should this patient's opioid use disorder be treated and when? S: I mean, uh, it's like, the initial impression for me is like alcoholism. I mean, that, that, that's a lifelong, you know, treatment. It's a lifelong management. They, they, they cannot get cured. I don't think that they'll ever get cured from that disorder. You know, it's like alcoholism, you know, 40 years out, one drink and you go back to where you were, so. It's a problem. It's a problem. So, um…	SUD treatment, futility, time of treatment
	1014	those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her through a big operation and go back to square one down the road? When is enough? When enough is enough?	seriousness, futility, frustration, multiple surgeries, patient story
	1009	an you say more about the futility piece? Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if you fix the heart, they're never going to return to a quality of life. Other times there are complications that have arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	futility, risk evaluation, liability of medical professionals, post-operation care

	1009	I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around.	discussing addiction, patient consent, accountability, deservingness, multiple surgeries, paternalism, reinfection, futility
	1009	Is there someone that you could call in the hospital who has addiction medicine expertise? Surgeon: Yes. Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	collaboration with addiction medicine, multidisciplinary group, risk evaluation, futility

	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility
	1009	The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know	commitment to recovery, discussing addiction, patient consent, pre-operation care, futility, tx compared to colleagues

		they've declined to operate on patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	
	1009	I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	tx compared to broader, multiple surgeries, futility, tx compared to colleagues, support for surgeons, reinfection, protocol, frustration, patient story
	1009	In a case where if a patient had 100 percent mortality without the surgery, definitely going to die but had maybe 50 percent operative mortality, would it be worth taking the patient to the OR? What's your risk calculation on that? Surgeon: What's the reason we're going? Is it recurrent endocarditis from injection drug abuse or is it just any patient? Interviewer: Let's say any patient for now. Surgeon: If I had done an aortic valve replacement on a patient for aortic stenosis	risk evaluation, perception of risk in PWID, multiple surgeries, stigma , save lives, reinfection, futility, relapse

		and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	
	1009	And some hospitals convene a multidisciplinary group to evaluate people who inject drugs before their valve replacement. Does this hospital do that? Surgeon: No. Interviewer: Is that something you'd like to see? Surgeon: It probably wouldn't matter. Who's in the multidisciplinary group, right? Interviewer: Who do you think should be? Surgeon: I mean, really, when I have patients I speak with the Infectious Disease doctor and the cardiologist. The ultimate decision on whether the patient gets an operation is based on the surgeon, regardless of what the Infectious Disease doctor or cardiologist say. I think when these groups get together I think they spend an hour talking about nothing. You can get to the heart of the matter very quickly and so it would probably be a waste of – you know, there's not enough hours in a day to sit through an hour-long meeting. I think you can really get to the heart of the matter in terms of what needs to be done in just a few minutes.	multidisciplinary group, time constraints, frustration, futility

	1009	I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration with addiction medicine, priorities, follow-up care, changes over time, discussing addiction, frustration, futility
	1009	Are there any guidelines or standards of care used this hospital when you're assessing people who inject drugs for valve replacements? Surgeon: No. I mean, there's no guideline on what to do if someone who injects drugs. The guidelines are based on a patient's medical condition and in terms of whether you think they need an operation or not. Do they have an indication but the guidelines – no guideline will every say you have to operate because surgical guidelines always incorporate surgeon judgment. You can have someone that you think has an indication for surgery but that you feel is not indicated for X, Y or Z reasons, or is futile. And so there's nothing that ever says you have to in the surgical guidelines for endocarditis	protocol, futility, lack of resources, training
Insurance			

	1019	these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	cost, lack of resources, insurance, administration
	1019	You know. Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	PICC line risk, support for patient, risk evaluation, SES, cost, insurance

	1019	Um, do you feel supported in your care of the people who inject Absolutely. …drugs here? Okay, good. Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium, uh, these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	cost, support for surgeons, lack of resources, age, SES, insurance

	1019	Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	cost, insurance, SES, follow-up care, support for patient, PICC line risk
	1008	What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	post-operation care, liability of medical professionals, follow-up care, accountability, paternalism, insurance
	1019	Um, do you feel supported in your care of the people who inject Absolutely. …drugs here? Okay, good. Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You	cost, support for surgeons, lack of resources, age, SES, insurance

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	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have small kids and they're taking care of them or someone else is taking care of them- the whole family, partner situation is not always	follow-up care, insurance, lack of resources, rationalization (secondary)

		the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	
	1007	Speaker 1: Um, any specific things that help you choose like housing, insurance, job status and child do this impacts your decision? Speaker 2: Everything impacts	insurance, defensive
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	desired changes, cost, insurance, support for patient, deservingness, SUD treatment
	1009	Interviewer: Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you	cost, liver vs heart, lack of knowledge, insurance

		think about it, it is limited resources. So in that sense I guess it's a fair comparison.	
	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have small kids and they're taking care of them or someone else is taking care of them- the whole family, partner situation is not always the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	risk evaluation, support for patient, insurance
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	insurance, societal issue, desired changes, cost, SUD treatment
	1001	Interviewer: Do you consider other things if you're choosing what to do with the PICC line, like housing, insurance, job status, or childcare? Do any of those things come to mind? Respondent: To be honest, I really don't know the [outer perspective of our practice]. So there will be the case management and social workers who help with those perspectives. I make decisions based on a patient's own medical need. There will be other care that we	PICC line risk, liability of medical professionals, follow-up care, multidisciplinary group, insurance

		have to consider, but gladly we have specialists to help us out.	
	1004	R: If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato.	insurance, cost, societal issue, accountability, tx compared to broader
	1008	Interviewer: Yeah. What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	societal issue, insurance, paternalism, commitment to recovery, relapse
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so	administration, cost, accountability, insurance, support for patient, support for surgeons, SUD treatment, follow-up care, societal issue

		there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	
	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	lack of knowledge, SUD treatment, liability of medical professionals, perception of risk in PWID, cost, insurance
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so	support for surgeons, administration, cost, accountability, support for patient, insurance, societal issue

		therefore I think it has to be a government program to prevent the problem.	
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	support for surgeons, insurance, follow-up care, changes over time

	1014	I: Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions. How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that. Am I confusing you?	second chances, deservingness, support for patient, SUD treatment, insurance, risk evaluation, SES

	1014	If the options were to have a PICC line and go home, have a PICC line and to a nursing facility, or have a PICC line and stay in the hospital, what do you think is the safest option for the patient? S: Hospital is, I don't know if it is safe, to be honest. We had, we had a patient that arrested on the floor, he was using in the bathroom after a valve operation. It was not my patient, it was one of my partners' patient. I walked in, and I saw them doing CPR, they found a needle, they found a syringe and needle in the bathroom. So, somebody, these things happen, you know. Probably safer, than home, you know. Maybe nursing home or a rehab facility, I don't know. I mean, again, it all depends on, on social, you know, insurance, and all these things. And, can you believe, you know, keeping somebody in the hospital for six weeks, getting antibiotics, occupying a bed? Nobody going to be happy, the hospital not going to be happy, the patient won't be happy, the third-party payer won't pay for it even if they have it, so, here we go.	insurance, relapse, PICC line risk, accountability, administration
	1014	S: No, I'm glad somebody…I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your	societal issue, insurance, follow-up care, regional differences, multidisciplinary group

		cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that. We don't, we don't.	
	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have small kids and they're taking care of them or someone else is taking care of them- the whole family, partner situation is not always the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	follow-up care, insurance, lack of resources
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	support for surgeons, insurance, follow-up care, changes over time, responsibility (secondary), rationalization (secondary)

	1014	S: No, I'm glad somebody…I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that. We don't, we don't.	societal issue, insurance, follow-up care, regional differences, multidisciplinary group
	1005	terviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, accountability, insurance, discussing addiction, frustration, post-operation care

	1005	nterviewer: Are there any changes that you would like to see with regards for treatment of endocarditis? Interviewee: I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	desired changes, multidisciplinary group, protocol, cost, insurance, tx compared to broader, frustration
	1014	I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation.	support for surgeons, insurance, follow-up care, changes over time
	1014	How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs	support for patient, deservingness, insurance, SUD treatment, risk evaluation, SES

		and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that.	
	1014	If the options were to have a PICC line and go home, have a PICC line and to a nursing facility, or have a PICC line and stay in the hospital, what do you think is the safest option for the patient? S: Hospital is, I don't know if it is safe, to be honest. We had, we had a patient that arrested on the floor, he was using in the bathroom after a valve operation. It was not my patient, it was one of my partners' patient. I walked in, and I saw them doing CPR, they found a needle, they found a syringe and needle in the bathroom. So, somebody, these things happen, you know. Probably safer, than home, you know. Maybe nursing home or a rehab facility, I don't know. I mean, again, it all depends on, on social, you know, insurance, and all these things. And, can you believe, you know, keeping somebody in the hospital for six weeks, getting antibiotics, occupying a bed? Nobody going to be happy, the hospital not going to be happy, the patient won't be happy, the third-party payer won't pay for it even if they have it, so, here we go.	PICC line risk, insurance, administration, accountability, relapse
	1014	I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my	multidisciplinary group, follow-up care, regional differences, seriousness, insurance, lack of resources

		own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that.	
	1009	Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	cost, liver vs heart, commitment to recovery, societal issue, lack of resources, insurance
Knowledge			

	1009	How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	knowledge, SUD treatment, medical model, disassociation (secondary)
	1010	How knowledgeable do you feel about the available treatments for people who use drugs? Um in terms of cardiac issues, infectious disease issues, or counseling? In terms of actual treatment of their substance use I know that things have changed in the past years and there is medications being given, suboxone, you know uh psychological help. But I can't say I am an expert for what works for a specific condition.	knowledge, SUD treatment, collaboration with addiction medicine
	1006	Interviewer: Okay. How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: At best, moderate. Interviewer: What are some of the available treatments for opioid use disorder? Interviewee: Well, I think psychotherapy, suboxone, methadone. I don't even know that much about suboxone, I think it's a combination drugs, buprenorphine with something else, social services, that's about all I know. Interviewer: Do you want to receive more training on this? Interviewee: If it's concise.	knowledge, SUD treatment, time constraints, training

	1007	Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	collaboration with addiction medicine, knowledge, discussing addiction, societal issue
	1007	Okay. Would you like to receive more training on, you know, medications used to treat opioid use disorder or do you think you're, would you like to receive it? Speaker 2: Sure! We could always learn.	knowledge, discussing addiction, training
	1017	How knowledgeable do you feel about the available treatments for people who use drugs? S: I think, well, on a scale of 1-10, 1 being I don't know anything and 10 being I'm an addiction psychiatrist, I'd say I'm a 6, just because of recent changes here at BLANK, but would say that, um, you know, two years ago, I'd be down to 2 or 3 because I don't think we had a lot of the resources. I: Do you want to receive more training on this sort of thing? S: Um, I think that, uh, yes with an asterisk. What I want to know more about is prognosis, and, you know, what are the, um, demographics or the features of someone that, if we do surgery, will seek treatment and address it, and what are the, um, who are the patients that, uh, have a poor prognosis with respect to their substance abuse. That's what I want to know more about.	knowledge, changes over time, training, perception of risk in PWID
	1013	Tell me about the operative risks of reoperation verses the original operation. So, um, in general terms, the operative risk of redo valve replacement the first time around is not hugely different from the operative risk from the first operation except in this scenario where you are talking about prosthetic valve endocarditis. So, if you are talking about a redo aortic valve replacement for structural valve	knowledge, second chance, multiple surgeries, risk evaluation, reinfection

		deterioration of the valve, the valve just wore out, the operative risk is not too different between the first operation and the second operation; it's a little higher with the second operation. If you are talking about for infection though and prosthetic endocarditis the operative risk if 10-fold higher. So, its much higher risk and that is because of the complexity of getting out the old prosthesis, getting rid of all the infection and putting in, doing the reconstruction that is required to get the new valve in.	
	1003	So, a lot of clinical judgment goes into assessing these patients, and I rely on objective data based on the laboratory values; the presence perhaps of some fevers. But also, some of my previous experience managing these patients; I rely on my own personal experiences and knowing what seems to work and what doesn't work.	data, knowledge, risk evaluation, training
	1009	How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	knowledge, SUD treatment, medical model
	1011	I like the fact that it is a definitive thing, that you fixing the problem will fix them if it is a definitive problem it will have a definitive fix so most of the time you are able to see definitive results. So, I like that aspect of it. It also is sometimes stimulating to figure out how to put back together what you have just taken apart. Sometimes it is really artistic, and it is really fun to do and at the same time the results that you see are, uh, can be separated at the time of that operation. Unlike some of the non-interventional fields where the process is more gradualized, so part of it is selfish too, self-gratification, it also is a definitive treatment, kind of a thing in my mind, you know there are things that medicine	accountability, knowledge, mechanical problem

		can fix, but there are things that you really just have to physically fix them.	
	1011	Do people who inject drugs have different operative and post-operative mortality? Um, I don't know the data for that. The general sense is that it is not the operation that is difficult. I think match for match these patients may actually be healthier than some of the other infections that we do. Infections in and of themselves have a higher mortality than non-infectious operations. That means that an aortic root replacement that is done for aortic aneurysm has a much lower mortality than an aortic root replacement that is done for endocarditis. Aortic, prosthetic aortic valve infections, which is done, redo aortic valve replacement which is done because the aortic valve over time deteriorated- had structural deterioration- has a much better outcome than if the valve were to get infected. So the endocarditis part surely makes the outcomes much worse but if you are asking me the question that does endocarditis unrelated to IV drug use is that different from endocarditis related to drug abuse I don't know the answer to that question.	data, perception of risk in PWID, knowledge
	1011	How knowledgeable do you feel about the available treatments for people who use drugs? Um, I've learned some going to our multidisciplinary team meetings. Um, I don't consider myself to be an expert or even a specialist in that, but I am glad that I know people, I know who to call. Would you want to receive more training on this? In my current situation I feel very well supported by the teams that we have put together. I think that what that allows me to do is to focus on what I need to do, and I can completely rely on them to, let them do what they do best.	support for surgeons, knowledge, time constraints, multidisciplinary group, training

	1013	Tell me about the operative risks of reoperation verses the original operation. So, um, in general terms, the operative risk of redo valve replacement the first time around is not hugely different from the operative risk from the first operation except in this scenario where you are talking about prosthetic valve endocarditis. So, if you are talking about a redo aortic valve replacement for structural valve deterioration of the valve, the valve just wore out, the operative risk is not too different between the first operation and the second operation; it's a little higher with the second operation. If you are talking about for infection though and prosthetic endocarditis the operative risk if 10-fold higher. So, its much higher risk and that is because of the complexity of getting out the old prosthesis, getting rid of all the infection and putting in, doing the reconstruction that is required to get the new valve in.	multiple surgeries, risk evaluation, reinfection, knowledge, second chance
	1015	I: Gotcha. Um… How knowledgeable do you feel about treatments for people who use drugs? S: Very knowledgeable. I: OK. What are some of the available treatments for opioid use disorder? S: Um, the two that come to mind are methadone and Suboxone. I: Great. Do you want to… S: But you need a, you need a, an X-waiver for Suboxone prescribing. I: Ok. Do you want to receive more training on this? S: Uh…sure.	knowledge, SUD treatment, training
	1007	Speaker 1: All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox. Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to	SUD treatment, knowledge, collaboration with addiction medicine, societal issue

		establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	
	1001	Respondent: Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, risk evaluation, discussing addiction, patient consent, liability of medical professionals, knowledge, contract
	1001	Interviewer: All right, and do you feel knowledgeable about available treatments available to people who use drugs? Respondent: I have some knowledge, but I rely on the specialist – that you help me take care of those patients. Interviewer: Do you know what any of the available treatments are for opiate use disorder? Or mainly you work with the specialists? Respondent: I will say I mainly work with the specialists, yeah.	collaboration with addiction medicine, knowledge, SUD treatment, training
	1004	R: DO you think treatment for endocarditis will change in the future? What changes would you want to see? I: No, I don't think that the treatment will change. This disease is one where prevention is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	desired changes, knowledge, changes over time, protocol, cost

	1005	Interviewer: How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: Fairly knowledgeable. Interviewer: It wants me to get really specific. What are some of the available treatments for opioid use disorder? Interviewee: I see most patients these days come in on suboxone or some type of—we don't see methadone as much anymore, we usually see suboxone or one of the combined opioid agonist and antagonist drugs.	knowledge, SUD treatment
	1005	Interviewer: How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: Fairly knowledgeable. Interviewer: It wants me to get really specific. What are some of the available treatments for opioid use disorder? Interviewee: I see most patients these days come in on suboxone or some type of—we don't see methadone as much anymore, we usually see suboxone or one of the combined opioid agonist and antagonist drugs.	knowledge, SUD treatment
	1006	Interviewer: Okay. How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: At best, moderate. Interviewer: What are some of the available treatments for opioid use disorder? Interviewee: Well, I think psychotherapy, suboxone, methadone. I don't even know that much about suboxone, I think it's a combination drugs, buprenorphine with something else, social services, that's about all I know.	knowledge, SUD treatment
	1015	I: Gotcha. Um… How knowledgeable do you feel about treatments for people who use drugs? S: Very knowledgeable. I: OK. What are some of the available treatments for opioid use disorder? S: Um, the two that come to mind are methadone and Suboxone. I: Great. Do you want to… S: But you need a, you need a, an X-waiver for Suboxone prescribing.	SUD treatment, knowledge, training

		I: Ok. Do you want to receive more training on this? S: Uh…sure.	
	1010	There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see how they ended up down that path.	empathy, discussing addiction, knowledge, risk evaluation
	1010	How knowledgeable do you feel about the available treatments for people who use drugs? Um in terms of cardiac issues, infectious disease issues, or counseling? In terms of actual treatment of their substance use I know that things have changed in the past years and there is medications being given, suboxone, you know uh psychological help. But I can't say I am an expert for what works for a specific cond	knowledge, SUD treatment, collaboration with addiction medicine
	1014	S: Um, not really, I mean, not really, you have to, those are, so…maybe, we should talk about this a little bit earlier, but there is more than one valve that can get infected. The aortic valve clearly is a mechanical problem, and they could die, I mean, she has wide open AR, her ventricle is not tolerating that, and she needs to go. Mitral valve, sometimes is the same. Tricuspid, on the other hand, is a different ball game. The tricuspid valve, I rarely operate on those patients in the acute setting because they can tolerate, particularly younger people, they can tolerate severe tricuspid regurgitation, you know. Hemodynamics rarely, they're hemodynamically stable unless they are in septic shock, which is even more of a cause, of a reason not to operate on them, to get them through the antibiotics, if they embolize it goes to the lung so we can always treat it, even if they develop an abscess, so those patients we can see them in a nonacute setting and will take it from there. But, unfortunately, the left-sided valves, the mitral, the tricuspid (TRANSCRIPTION NOTE: ERROR?	age, mechanical problem, seriousness, knowledge

		SUBJECT LIKELY MEANT AORTIC BASED ON EMPHASIS ON LEFT-SIDED VALVES REQUIRING MORE URGENT INTERVENTIONS.), they usually present, their presentation like this, and your hands, you have to operate on them.	
	1011	How knowledgeable do you feel about the available treatments for people who use drugs? Um, I've learned some going to our multidisciplinary team meetings. Um, I don't consider myself to be an expert or even a specialist in that, but I am glad that I know people, I know who to call.	knowledge, SUD treatment, collaboration with addiction medicine
	1003	Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be interested in doing that, but it's you know, right now, not practical. For me.	SUD treatment, follow-up care, knowledge, protocol
	1005	Interviewer: How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: Fairly knowledgeable. Interviewer: It wants me to get really specific. What are some of the available treatments for opioid use disorder? Interviewee: I see most patients these days come in on suboxone or some type of—we don't see methadone as much anymore, we usually see suboxone or one of the combined opioid agonist and antagonist drugs.	SUD treatment, knowledge

	1014	Looking back, is there anything different that you would change about your approach? S: Um, not really, I mean, not really, you have to, those are, so…maybe, we should talk about this a little bit earlier, but there is more than one valve that can get infected. The aortic valve clearly is a mechanical problem, and they could die, I mean, she has wide open AR, her ventricle is not tolerating that, and she needs to go. Mitral valve, sometimes is the same. Tricuspid, on the other hand, is a different ball game. The tricuspid valve, I rarely operate on those patients in the acute setting because they can tolerate, particularly younger people, they can tolerate severe tricuspid regurgitation, you know. Hemodynamics rarely, they're hemodynamically stable unless they are in septic shock, which is even more of a cause, of a reason not to operate on them, to get them through the antibiotics, if they embolize it goes to the lung so we can always treat it, even if they develop an abscess, so those patients we can see them in a nonacute setting and will take it from there. But, unfortunately, the left-sided valves, the mitral, the tricuspid (TRANSCRIPTION NOTE: ERROR? SUBJECT LIKELY MEANT AORTIC BASED ON EMPHASIS ON LEFT-SIDED VALVES REQUIRING MORE URGENT INTERVENTIONS.), they usually present, their presentation like this, and your hands, you have to operate on them.	knowledge, seriousness, age, mechanical problem
	1009	How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it.	patient consent, discussing addiction, knowledge, pre-operation care, protocol
	1009	Re: the treatment of their addiction: How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm	priorities, knowledge, time constraints, training, SUD treatment

		meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	
	1009	Can you tell me a little bit about the operative risks of re-operation versus the original operation? Surgeon: So the operative risk is higher the second time around because a lot of scar tissue forms in the mediastinum and so the risk of sternal reentry in terms of injuring the right ventricle or any other structures when you're trying to dissect them free are higher for any redo operation. Depending on what you did the first time, sometimes if you've done a complete aortic root replacement with a homograft, that redo operation is fraught with extraordinary risk. It's very, very hard. These things get calcified. It's very hard to get them out. And the risk of the redo can vary widely but it's a lot harder than the first time around.	multiple surgeries, risk evaluation, knowledge
	1001	Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, discussing addiction, knowledge, risk evaluation, rigidity (secondary)
Lack of Knowledge			

	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job	discussing addiction, post-operation care, mechanical problem, lack of knowledge, SUD treatment
	1019	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not... I'm not very knowledgeable, no, honestly. Do you want to receive more training on this? That's fine. For me it would be an informational thing. Uh, I don't know that it would change the scope of my practice or how I conduct my practice, but maybe it would. But I am… I am… I am relatively ignorant on that, yes.	lack of knowledge, SUD treatment, training
	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more challenging.	timing of SUD tx, lack of knowledge, risk evaluation, perception of risk in PWID, follow-up care, post-operation care

		[COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things.	
	1019	s there any role of medications or psychotherapy in their treatment and do you think that it should be combined or exist alone? Well again, you're… you're starting to ask me questions Right about the postoperative rehab process and I'm not very knowledgeable on it but I would imagine that a combination of pharmacotherapy and psychotherapy would be the best approach to… to the treatment of opioid addiction.	SUD treatment, lack of knowledge, post-operation care
	1019	Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't	pain management, support for patient, risk evaluation, protocol, post-operation care, empathy, lack of knowledge

		believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	
	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	discussing addiction, collaboration with addiction medicine, SUD treatment, lack of knowledge
	1019	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not... I'm not very knowledgeable, no, honestly. Do you want to receive more training on this? That's fine. For me it would be an informational thing. Uh, I don't know that it would change the scope of my practice or how I conduct my practice, but maybe it would. But I am… I am… I am	training, lack of knowledge

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	1019	Is there any role of medications or psychotherapy in their treatment and do you think that it should be combined or exist alone? Well again, you're… you're starting to ask me questions Right about the postoperative rehab process and I'm not very knowledgeable on it but I would imagine that a combination of pharmacotherapy and psychotherapy would be the best approach to… to the treatment of opioid addiction.	SUD treatment, post-operation care, lack of knowledge
	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care

		point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	
	1008	nterviewer: Okay. Cool. And how knowledgeable do you feel about the available treatments for people who use drugs? You know, like available treatment for opioid use disorder or something? Respondent: I refer to the -- there's the -- that team-- that does this. I refer everybody to them. Interviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance. Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem	SUD treatment, lack of knowledge, commitment to recovery, withdrawal management, pain management, deservingness, collaboration with addiction medicine

	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	discussing addiction, collaboration with addiction medicine, SUD treatment, lack of knowledge
	1019	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not... I'm not very knowledgeable, no, honestly. Do you want to receive more training on this? That's fine. For me it would be an informational thing. Uh, I don't know that it would change the scope of my practice or how I conduct my practice, but maybe it would. But I am… I am… I am relatively ignorant on that, yes.	training, lack of knowledge
	1019	Is there any role of medications or psychotherapy in their treatment and do you think that it should be combined or exist alone? Well again, you're… you're starting to ask me questions Right about the postoperative rehab process and I'm not very knowledgeable on it but I would imagine that a combination of pharmacotherapy and psychotherapy would be the best approach to… to the treatment of opioid addiction.	SUD treatment, post-operation care, lack of knowledge

	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, lack of knowledge, training, time constraints

	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams	multidisciplinary group, pain management, lack of knowledge, support for surgeons, post-operation care
	1016	: Do people who inject drugs have different operative and post-operative mortality? S: I don't know the exact answer to that. Um, I think, in general, without knowing the data, uh, they tend to be younger, so that's in their favor. Um, but they do have a lot of comorbidities associated with them, so…	perception of risk in PWID, lack of knowledge, age
	1016	: Are there any professional society guidelines for this population? S: I'm not familiar with (inaudible)…	lack of knowledge, protocol
	1016	I: Yes, so talking about pain management, how knowledgeable do you feel about the drugs available, um, or available treatments for people who use drugs? S: Um, I feel somewhat knowledgeable, um, I'm also, as the attending surgeon, I'm not the prescriber of any medications, so usually the person ordering, it's going through the nurse practitioners and the ICU.	pain management, lack of knowledge
	1016	I: What do you think about drug rehab and is it different than drug detox? S: Um, truthfully, I don't know the exact difference between the two.	rehab v detox, lack of knowledge
	1016	I: Tell me about your experience with managing pain in this population. S: Um, we touched on this a little bit, but, um, I, I don't, as, kind of, the attending surgeon, I leave that to my team, um, so I'm not directly involved with pain management. I: Um, do you know what the nurse practitioners have found that works to treat pain or what doesn't work? S: Truthfully, I don't know. We have everything from the, the PCAs, um, which I feel like the patients like a lot. The issue is that, it's always very hard to wean them off the PCAs. And then, uh, a combination of, in general, we use oxycodone here.	pain management, lack of knowledge

	1016	I: Yeah, and that was helpful for the patient, that was able to control their pain? Did they have to have, like, any additional medicines? S: I don't know, I can't remember off the top of my head, if he was supplemented with additional medications, um, or if it maybe reduced the amount of additional medications that we needed. Um, in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners pre	pain management, lack of knowledge, support for patient, multidisciplinary group
	1016	I: Tell me about your experience with managing withdrawal in this population? Again, it might be the same as before, but… S: Um, I would say that I actually don't see much in the withdrawal space, because usually the patients come in and are in the hospital for a little while before they, um, before they, kind of, go to surgery, so it's usually more the ICU that is managing that or the floor. I: With the withdrawal experience maybe you have had in the past, does it affect your ability to operate or manage their pain? S: Um, I can't really answer that.	pain management, withdrawal management, lack of knowledge
	1006	I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young.	lack of knowledge, stigma , perception of risk in PWID, frustration, patient story, paternalism

	1002	So if you have a patient who comes in who uses drugs, how much knowledge do you feel you have about the treatments they can use for someone who is trying to get off of it? Respondent: I don't know. I don't have that much knowledge, except for the surgical part. Interviewer: Would you ever want more training on this? Respondent: What's the benefit of doing the training? I'm happy to do it, but the amount of time – what's the rush now of doing the training events?	time constraints, SUD treatment, lack of knowledge, priorities, training, mechanical problem
	1002	Interviewer: What do you think about the term drug rehab? Respondent: I don't know. [Laughs] I mean, I'm not so interested in those patient care – except for the surgical part. So I'm not so interested in those. Interviewer: Do you think that drug rehab is different than drug detox? Respondent: I don't know. No comment.	rehab v detox, lack of knowledge, priorities, mechanical problem, left vs right side
	1002	Interviewer: How should Katy, the patient that we were talking about – how should her opiate use disorder be treated? Respondent: I don't know.	lack of knowledge
	1002	Can you tell me about your experience with managing withdrawal for patients in this population? Respondent: Withdrawing, you mean? Interviewer: Yeah, when they're withdrawing from drug use. Respondent: I don't have that much experience, so I don't know. Interviewer: If someone is experiencing withdrawal, would that make you more or less likely to operate? Respondent: I don't know.	withdrawal management, lack of knowledge

	1002	erviewer: Some hospitals can have a multidisciplinary group to evaluate these specific patients and cases. Do you know if [Tess] has that? Respondent: I don't know. Interviewer: Do you think it would be helpful to have? Respondent: I think so. Interviewer: Who do you imagine would be there? Respondent: [The patient], cardiology, and then some other pain control. What else? Like, pharmacists and then coordinators who can reach out to the family. I think that's about it, yeah.	multidisciplinary group, training, follow-up care, lack of knowledge
	1007	Have you ever used the term opioid use disorder when speaking with patients of this sort? Speaker 2: Occasionally, Yea. Speaker 1: Okay. Speaker 2: Is this hard to keep track because there's all… the names keep changing.	discussing addiction, changes over time, lack of knowledge
	1017	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	protocol, lack of knowledge, lack of resources, data
	1013	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not very knowledgeable. I really don't, um, I'm not qualified to prescribe the pharmacologic treatment for it, its not what I do. Would you want to receive more training on this? To be honest with you um, probably not. Its kind of interesting to hear about at grand rounds but where I am in my practice, I don't even write post-op, I don't even write discharge medications for my patients, the PAs do so understanding it to the degree that is necessary to incorporate it into our standard practice would be useful but the exact details I don't need to know	lack of knowledge, training, time constraints, administration

	1003	Interviewer: Yeah. Do you start with an NSAID, or…? Respondent: No. Interviewer: Okay. Respondent: Well, that's a good question. Do we start with it? No, but we could [unintelligible 0:18:05] it, if necessary. So probably half our patients are on Toradol. And then, I don't know – NSAIDs and narcotics: I don't have much expertise with other - those other medications out there for pain. Ultram, and Tramadol – those kind of things. I don't have a lot of experience with those.	pain management, lack of knowledge
	1009	Interviewer: Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	cost, liver vs heart, lack of knowledge, insurance
	1017	I: What does the role of medications play in that? S: I don't know. I'm sure there is a role. I: And how about psychotherapy? S: I'm a big fan. So, I think, I don't know, but I think there is a role. I: Do you think they work better together or better separate?	SUD treatment, lack of knowledge

		S: They're together, but I'm a bit of a union in all this. I'm just kidding, I don't know what that means. (Laughing)	
	1017	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	data, protocol, lack of knowledge, lack of resources
	1013	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not very knowledgeable. I really don't, um, I'm not qualified to prescribe the pharmacologic treatment for it, its not what I do.	lack of knowledge, time constraints
	1013	What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	lack of knowledge, collaboration with addiction medicine
	1015	I: And are there any professional society guidelines…? S: Um…yes, but, um, they are not based on any evidence.	protocol, data, lack of knowledge
	1015	: Is there someone you can call in the hospital with addiction medicine expertise? S: Yeah, I don't know that number, but people on my team do and we do get in touch with them.	collaboration with addiction medicine, lack of knowledge
	1015	do you think that medications and psychotherapy, um, one works better than the other, or they need to coexist in your experience? S: I think they, I think they, I think, I don't have a lot of knowledge about therapies, but I think that, um, medications are important. Um…I believe that Suboxone is more efficacious than methadone, and I've seen a lot of people on methadone with real, no real plans to cut out, cut down, or quit, or change. Whereas with Suboxone, I believe there is evidence for that being a good treatment for this disease.	SUD treatment, commitment to recovery, lack of knowledge
	1007	Speaker 1: Okay. So how about her opioid use disorder, how should it be treated and when? Speaker 2: Well, um, I mean I'm not an expert in the field. We wouldn't, like I said, we'll work very closely with addiction medicine, so I would defer to them, but I think they should be engaged immediately.	SUD treatment, lack of knowledge

	1001	No, I don't think in the Cardiac Surgery Society there would be a guideline regarding how to take care of a patient with active HIV and hep C – for example, the infection – or patients with a history of a drug use. I don't think there is such a guideline for us to follow. If you notice anything, I [would like to read, easily]. [Overlapping noise] if there's such a guideline.	protocol, accountability, lack of resources, lack of knowledge
	1001	Interviewer: Have you ever personally experienced conflict with your team or other staff members in working with these patients? If so, how was it resolved, and what was the outcome? Respondent: I don't think so. Yeah, I am more interested in taking care of a patient surgically, but I know it's a challenging process. So I have been relying on the specialists who help me take care of these patients. So there are things I don't know, and try not to interfere there in the area where I have not much knowledge.	support for surgeons, lack of knowledge, disagreements (professional), collaboration with addiction medicine
	1004	R: How knowledgeable do you feel about the available treatments for people who use drugs? Not very, there's methadone and suboxone. I don't want to receive more training on this, I don't have the time or the interest.	lack of knowledge, time constraints, training
	1004	I: How should this patient (Katie's) OUD be treated? R: No idea, if she has the operation, she's agreed to the contract to enter treatment. I don't know anything about medications or psychotherapy.	lack of knowledge, SUD treatment, patient consent, contract
	1005	I'm not aware of any strict guidelines for operating on people who use IV drugs.	lack of knowledge, lack of resources, protocol
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams Tell me about your experience with managing withdrawal in this population. It's the same, you call the pain team to ask them for their help.	pain management, lack of knowledge, support for surgeons, post-operation care, multidisciplinary group

	1012	The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	accountability, societal issue, lack of knowledge, support for patient, empathy, follow-up care, lack of resources
	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	lack of knowledge, SUD treatment, liability of medical professionals, perception of risk in PWID, cost, insurance
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, lack of knowledge, training, time constraints

	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams	multidisciplinary group, pain management, lack of knowledge, support for surgeons, post-operation care
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	1017	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	data, protocol, lack of knowledge, lack of resources
	1004	How knowledgeable do you feel about the available treatments for people who use drugs? Not very, there's methadone and suboxone. I don't want to receive more training on this, I don't have the time or the interest.	lack of knowledge, time constraints
	1016	Do people who inject drugs have different operative and post-operative mortality? S: I don't know the exact answer to that. Um, I think, in general, without knowing the data, uh, they tend to be younger, so that's in their favor. Um, but they do have a lot of comorbidities associated with them, so…	perception of risk in PWID, age, lack of knowledge
	1016	Yes, so talking about pain management, how knowledgeable do you feel about the drugs available, um, or available treatments for people who use drugs? S: Um, I feel somewhat knowledgeable, um, I'm also, as the attending surgeon, I'm not the prescriber of any medications, so usually the	pain management, lack of knowledge

		person ordering, it's going through the nurse practitioners and the ICU.	
	1016	I: What do you think about drug rehab and is it different than drug detox? S: Um, truthfully, I don't know the exact difference between the two.	lack of knowledge
	1016	in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners prescribe.	pain management, multidisciplinary group, support for patient, lack of knowledge
	1016	Tell me about your experience with managing withdrawal in this population? Again, it might be the same as before, but… S: Um, I would say that I actually don't see much in the withdrawal space, because usually the patients come in and are in the hospital for a little while before they, um, before they, kind of, go to surgery, so it's usually more the ICU that is managing that or the floor. I: With the withdrawal experience maybe you have had in the past, does it affect your ability to operate or manage their pain? S: Um, I can't really answer that.	withdrawal management, pain management, lack of knowledge
	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	lack of knowledge, SUD treatment, cost, accountability, liability of medical professionals
	1015	I: Is there someone you can call in the hospital with addiction medicine expertise? S: Yeah, I don't know that number, but people	lack of knowledge, collaboration with addiction medicine

		on my team do and we do get in touch with them.	
	1015	I: That's ok. Um…basically, do you think that medications and psychotherapy, um, one works better than the other, or they need to coexist in your experience? S: I think they, I think they, I think, I don't have a lot of knowledge about therapies, but I think that, um, medications are important. Um…I believe that Suboxone is more efficacious than methadone, and I've seen a lot of people on methadone with real, no real plans to cut out, cut down, or quit, or change. Whereas with Suboxone, I believe there is evidence for that being a good treatment for this disease.	lack of knowledge, SUD treatment, commitment to recovery
	1013	What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	lack of knowledge, collaboration with addiction medicine, disassociation (secondary)
	1014	I: Gotcha. How knowledgeable do you feel about the available treatments for people who use drugs? S: To a certain extent. You know, I mean, I mean, what do you mean treatments? I: Um, like, how knowledgeable are you about, like, methadone programs and treatment programs? S: I can, I can, you know, a little bit, but I, for me, all I need to do is to be the bridge to connect them with the right people, but I can't, I can't just have a deep, deep discussion.	lack of knowledge, SUD treatment, priorities
	1014	Um, try to educate the patient as much as we can, but again, you're talking to the wrong guy. We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over.	lack of knowledge, lack of resources, frustration, follow-up care, desired changes

	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	pain management, empathy, lack of knowledge, deservingness, training
	1002	Interviewer: How should Katy, the patient that we were talking about – how should her opiate use disorder be treated? Respondent: I don't know.	lack of knowledge
	1002	Interviewer: Some hospitals can have a multidisciplinary group to evaluate these specific patients and cases. Do you know if [Tess] has that? Respondent: I don't know.	lack of knowledge
	1003	Interviewer: Yeah. Do you start with an NSAID, or…? Respondent: No. Interviewer: Okay. Respondent: Well, that's a good question. Do we start with it? No, but we could [unintelligible 0:18:05] it, if necessary. So probably half our patients are on Toradol. And then, I don't know – NSAIDs and narcotics: I don't have much expertise with other - those other medications out there for pain. Ultram, and Tramadol – those kind of things. I don't have a lot of experience with those.	pain management, lack of knowledge

	1003	There should be, but there's not, because we – there's a lot of things in cardiac surgery that are now – there's task forces and they establish guidelines, that you're supposed to adhere, too for various – when to operate on someone with a valve problem; when to operate on someone with a coronary problem. Aortic problem. Heart failure problem. But I'm not seeing this addressed in our literature – when to operate on someone with endocarditis who uses drugs. I'm not sure there's anything on when to operate on someone with endocarditis, period. I'm not aware of any consensus statements about that. There should be, but there's not.	protocol, lack of knowledge
	1005	Interviewer: Are there professional society guidelines? Interviewee: I'm not aware of any strict guidelines for operating on people who use IV drugs.	protocol, training, lack of knowledge, lack of resources
	1014	I: Gotcha. How knowledgeable do you feel about the available treatments for people who use drugs? S: To a certain extent. You know, I mean, I mean, what do you mean treatments? I: Um, like, how knowledgeable are you about, like, methadone programs and treatment programs? S: I can, I can, you know, a little bit, but I, for me, all I need to do is to be the bridge to connect them with the right people, but I can't, I can't just have a deep, deep discussion. I: Do you want to receive more training on that sort of thing? S: Why not? Yeah, absolutely.	SUD treatment, priorities, lack of knowledge
	1014	We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over	lack of knowledge, lack of resources, follow-up care, desired changes, frustration, post-operation care, support for patient

	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	pain management, deservingness, empathy, lack of knowledge, training
	1001	No, not to my knowledge. No, I don't think in the Cardiac Surgery Society there would be a guideline regarding how to take care of a patient with active HIV and hep C – for example, the infection – or patients with a history of a drug use. I don't think there is such a guideline for us to follow. If you notice anything, I [would like to read, easily]. [Overlapping noise] if there's such a guideline.	lack of knowledge, lack of resources, protocol, prioritization (secondary)
Lack of Resources			
	1012	Um. The ones that I am aware of are pretty wishy washy, they're not, you know, they don't guide us as to everybody gets one valve and after that no more, that's a personal and a programmatic decision on how aggressive to be with patients that continue to um use IV drugs and continue to get infection.	lack of resources
	1012	Yes, we have that and I've not been satisfied with that service. I think they are understaffed and underfunded.	lack of resources

	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue
	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	multiple surgeries, deservingness, lack of resources, commitment to recovery, frustration, futility, reinfection, relapse
	1010	I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying	liver vs heart, deservingness, stigma , reinfection, lack of resources, risk evaluation

		issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	
	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more people to operations that in other countries, even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	cost, changes over time, tx compared to broader, lack of resources, deservingness
	1019	these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive	cost, lack of resources, insurance, administration

		for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	
	1019	Um, do you feel supported in your care of the people who inject Absolutely. …drugs here? Okay, good. Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium, uh, these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um,	cost, support for surgeons, lack of resources, age, SES, insurance

		when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	
	1008	Interviewer: Okay. And then are there any like professional society guidelines for providing -- for doing the surgery in the population? Respondent: You mean for providing what kind of care during the surgery? Interviewer: Yeah. Respondent: No. There's recommendations for -- treatment of endocarditis, with the ACC and the HA probably have the best guidelines. The American Association of Thoracic Surgery has their own guidelines but they're basically the same. I don't think they're as high a quality as the ACC HA. But, yeah, they're all basically the same. Interviewer: Okay. Cool. Respondent: But there's no guidelines on specifically how we treat patients with drug abuse.	protocol, lack of resources, training, liability of medical professionals

	1019	Um, do you feel supported in your care of the people who inject Absolutely. …drugs here? Okay, good. Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium, uh, these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	cost, support for surgeons, lack of resources, age, SES, insurance
	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have	follow-up care, insurance, lack of resources, rationalization (secondary)

		small kids and they're taking care of them or someone else is taking care of them- the whole family, partner situation is not always the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	
	1006	Interviewer: Are there professional society guidelines? Interviewee: Oh, indications for surgery? Interviewer: Yeah, I think they mean with regards to IV drug users versus non-users. Interviewee: To be honest, I don't know There are guidelines if you're talking just about IV drug abuse or endocarditis indications and endocarditis more broadly. I don't think they draw distinctions in those indications between IV drug abusers and non IV drug abusers.	protocol, training, data, lack of resources
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	societal issue, desired changes, lack of resources, SUD treatment, changes over time, prevalence of endocarditis, protocol
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving	multidisciplinary group, support for patient, societal issue, lack of resources, futility, desired changes, follow-up care

	1002	Interviewer: Okay, and what kind of questions do you ask? Respondent: What kind of questions? The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	discussing addiction, lack of resources, patient consent, support for patient
	1007	Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect because it's not, it's not so much a surgical…	support for surgeons, cost, data, societal issue, lack of resources
	1007	What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	support for patient, protocol, lack of resources, societal issue, tx compared to broader, perception of risk in PWID
	1017	: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for patient, frustration, administration, follow-up care, lack of resources, multidisciplinary group

	1017	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	protocol, lack of knowledge, lack of resources, data
	1013	s there someone you can call in the hospital with addiction medicine expertise? Yes, so we have got the addiction service Do you feel supported in your care of people who inject drugs? Yes. How do you think the hospital could support you more in the care of patients who inject drugs? Uh, I think that uh throwing more resources behind the whole addiction medicine effort. I think that um, I think there is a lot of ground to be gained there and I think that we need to continue to strive to be national leaders in that	collaboration with addiction medicine, support for patient, lack of resources
	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone	multidisciplinary group, collaboration with addiction medicine, support for surgeons, accountability, frustration, futility, lack of resources, post-operation care

		to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be	support for surgeons, administration, tx compared to broader, accountability, desired changes, follow-up care, frustration, lack of resources, post-operation care, multidisciplinary group

		managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	

	1009	Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	tx compared to colleagues, deservingness, collaboration with addiction medicine, multidisciplinary group, lack of resources, frustration, accountability, desired changes, follow-up care

		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1011	How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	lack of resources, accountability, post-operation care, data, follow-up care, support for patient

	1011	f you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant. The reason it is different though is that we still operate on them, you may ask the question well if that is how you feel then why do you still operate on these patients because you know no one would get a liver transplant if they are still drinking alcohol because the resources are different, there is only a finite number of livers and they really are in a position where they can put a hard stop to it and say no we are not going to do this because somebody else can get that liver. In our situation we don't make that an active hard stop for us because we are not limited by the amount of valves that we have or other things we have so we would like to give these patients a chance, we want to give them a chance we want to give them a shot at getting better so sometimes we do accept less than ideal situations.	liver vs heart, multiple surgeries, save lives, commitment to recovery, lack of resources, paternalism
	1011	Most of the times I think I would favor the PICC line and go to the nursing facility. Some of that is made out of pragmatism, being watchful, we end up canceling cases because we don't have enough ICU beds, or OR beds or hospital beds or whatever that is. You know one way we seem like we just want to do more cases, but we see that as those are real patients who need to be taken care of and if we keep someone in the hospital that doesn't need to be in the hospital then that is blocking someone else's care. And this is not necessarily you know the rationing of care, but it is sometimes just the appropriate use of care. So, I think that keeping them in the hospital for 6 weeks with a PICC line just to give them antibiotics I think is not the most optimal system that we have.	follow-up care, PICC line risk, empathy, lack of resources
	1011	maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the	lack of resources, administration, empathy, frustration, support for patient, PICC line risk, paternalism

		time. It's not like these patients are going back to their families, their grandparents, or an aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own police I think is a little too much to ask of them.	
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: How knowledgeable do you feel about the available treatments for people who use drugs? S: I think, well, on a scale of 1-10, 1 being I don't know anything and 10 being I'm an addiction psychiatrist, I'd say I'm a 6, just because of recent changes here at BLANK, but would say that, um, you know, two years ago, I'd be down to 2 or 3 because I don't think we had a lot of the resources.	changes over time, lack of resources
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group

		change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	
	1017	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	data, protocol, lack of knowledge, lack of resources
	1013	How do you think the hospital could support you more in the care of patients who inject drugs? Uh, I think that uh throwing more resources behind the whole addiction medicine effort. I think that um, I think there is a lot of ground to be gained there and I think that we need to continue to strive to be national leaders in that	support for surgeons, lack of resources
	1015	: Ok. So…I'm going to list three options for Katie. A PICC line and going home, a PICC line and staying in the hospital, and a PICC line and going to a nursing facility. Which of those do you feel is the safest option? S: Uh…well, up until I started here, I thought a PICC line and staying in the hospital, but I've sent a number of patients to nursing facilities for monitored antibiotics and I think that is perfectly fine. I: Any specific things help you choose, like housing, insurance, job status, or anything like that? S: No. Availability, that's it.	PICC line risk, follow-up care, lack of resources, SES
	1015	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: No. I: Ok. S: Well, I mean, so we have guidelines, surgical societies have guidelines, and we all use that, but outside of that, no.	protocol, lack of resources

	1007	Speaker 1: Yeah. Thank you. So is there someone you can call in the hospital with addiction medicine expertise? Speaker 2: Absolutely. I mean, at our hospital, very… probably the best in the city for addiction. So it's good to be working carefully with them. Speaker 1: Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect because it's not, it's not so much a surgical… Speaker 1: Okay. So I had asked you about suggestions for the hospital to improve. Speaker 2: Support? Speaker 1: Yea, support Speaker 2: What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	support for surgeons, societal issue, lack of resources
	1001	No, I don't think in the Cardiac Surgery Society there would be a guideline regarding how to take care of a patient with active HIV and hep C – for example, the infection – or patients with a history of a drug use. I don't think there is such a guideline for us to follow. If you notice anything, I [would like to read, easily]. [Overlapping noise] if there's such a guideline.	protocol, accountability, lack of resources, lack of knowledge

	1001	Interviewer: What's your sense about how you approach and treat patients who inject drugs in comparison to your colleagues? Respondent: I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	tx compared to colleagues, lack of resources, protocol, disagreements (professional), risk evaluation, save lives, tx compared to broader
	1001	nterviewer: Do you think the way you feel is also different from the way other physicians around the country or around the world are dealing with this issue? Respondent: It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to colleagues, multiple surgeries, futility, lack of resources, tx compared to broader, second chance
	1004	: So, what are some of the first thoughts that you consider when you're asked to evaluate a person who injects drugs for a valve replacement? R: sad. Tough decisions. These people come in sick and don't take care of themselves. I do worry about getting viral infections like Hep C and HIV. There are no professional guidelines.	infection risk to surgeons, stigma , accountability, protocol, lack of resources, deservingness, commitment to recovery
	1005	I'm not aware of any strict guidelines for operating on people who use IV drugs.	lack of knowledge, lack of resources, protocol

	1008	Interviewer: Okay. And then are there any like professional society guidelines for providing -- for doing the surgery in the population? Respondent: You mean for providing what kind of care during the surgery? Interviewer: Yeah. Respondent: No. There's recommendations for -- treatment of endocarditis, with the ACC and the HA probably have the best guidelines. The American Association of Thoracic Surgery has their own guidelines but they're basically the same. I don't think they're as high a quality as the ACC HA. But, yeah, they're all basically the same. Interviewer: Okay. Cool. Respondent: But there's no guidelines on specifically how we treat patients with drug abuse.	protocol, lack of resources, liability of medical professionals
	1012	Are there professional society guidelines on this issue? Um. The ones that I am aware of are pretty wishy washy, they're not, you know, they don't guide us as to everybody gets one valve and after that no more, that's a personal and a programmatic decision on how aggressive to be with patients that continue to um use IV drugs and continue to get infection.	protocol, disagreements (professional), lack of resources, deservingness, reinfection, relapse
	1012	The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	accountability, societal issue, lack of knowledge, support for patient, empathy, follow-up care, lack of resources

	1012	s there someone you can call in the hospital with addiction medicine expertise? Yes, we have that and I've not been satisfied with that service. I think they are understaffed and underfunded	collaboration with addiction medicine, lack of resources
	1012	you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not. And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness. And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? I	stigma , seriousness, relapse, reinfection, accountability, deservingness, follow-up care, multiple surgeries, futility, lack of resources
	1012	The surgical guidelines are following the treatment of endocarditis and they are not focused on IV drug users they are when do you operate on endocarditis in general and that has to do with the type of organism, how big the lesion is, whether or not there has been a neurologic injury, there's a list of criteria and that is what we follow in general. We have not come down on hard and fast rules about who gets surgery and how many times. I think we have left that to the discretion of the individual surgeons.	protocol, lack of resources
	1005	I'm not aware of any strict guidelines for operating on people who use IV drugs.	lack of knowledge, lack of resources, protocol
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: How knowledgeable do you feel about the available treatments for people who use drugs? S: I think, well, on a scale of 1-10, 1 being I don't know anything and 10 being I'm an addiction psychiatrist, I'd say I'm a 6, just	changes over time, lack of resources

		because of recent changes here at BLANK, but would say that, um, you know, two years ago, I'd be down to 2 or 3 because I don't think we had a lot of the resources.	
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group
	1017	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	data, protocol, lack of knowledge, lack of resources
	1004	There are no professional guidelines.	protocol, lack of resources
	1006	Interviewer: Are there professional society guidelines? Interviewee: Oh, indications for surgery? Interviewer: Yeah, I think they mean with regards to IV drug users versus non-users. Interviewee: To be honest, I don't know There are guidelines if you're talking just about IV drug abuse or endocarditis indications and endocarditis more broadly. I don't think they draw distinctions in those indications between IV drug abusers and non IV drug abusers.	data, lack of resources, protocol

	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue
	1012	Um. The ones that I am aware of are pretty wishy washy, they're not, you know, they don't guide us as to everybody gets one valve and after that no more, that's a personal and a programmatic decision on how aggressive to be with patients that continue to um use IV drugs and continue to get infection.	lack of resources
	1012	e don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible	societal issue, lack of resources
	1012	Yes, we have that and I've not been satisfied with that service. I think they are understaffed and underfunded.	lack of resources
	1012	And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness	lack of resources
	1015	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: No. I: Ok. S: Well, I mean, so we have guidelines, surgical societies have guidelines, and we all use that, but outside of that, no.	protocol, medical model, lack of resources
	1010	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about those comparisons? I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who	liver vs heart, deservingness, lack of resources, risk evaluation

		abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	
	1014	Um, try to educate the patient as much as we can, but again, you're talking to the wrong guy. We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over.	lack of knowledge, lack of resources, frustration, follow-up care, desired changes
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So, we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	regional differences, tx compared to broader, lack of resources, stigma

	1011	Are there professional society guidelines? There are guidelines regarding endocarditis. There are, um, there are, I am not familiar with any society guidelines on our side regarding specific guidelines for patients using IV drugs.	protocol, lack of resources
	1011	Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	lack of resources
	1011	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? I think they're, I think it's a reasonable comparison if you were to think about it in terms of disease and the treatment in the sense that uh, that the disease is not valve failure, that is the symptom of the problem that the patient is facing, the real problem is their drug abuse thing. If you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant. The reason it is different though is that we still operate on them, you may ask the question well if that is how you feel then why do you still operate on these patients because you know no one would get a liver transplant if they are still drinking alcohol because the resources are different, there is only a finite number of livers and they really are in a position where they can put a hard stop to it and say no we are not going to do this because somebody else can get that liver. In our situation we don't make that an active hard stop for us because we are not limited by the amount of valves that we have or other things we have so we would like	liver vs heart, lack of resources, deservingness

		to give these patients a chance, we want to give them a chance we want to give them a shot at getting better so sometimes we do accept less than ideal situations.	
	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have small kids and they're taking care of them or someone else is taking care of them- the whole family, partner situation is not always the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	follow-up care, insurance, lack of resources
	1002	The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	discussing addiction, lack of resources, patient story
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So, we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	regional differences, tx compared to broader, lack of resources, stigma
	1005	Interviewer: Are there professional society guidelines? Interviewee: I'm not aware of any strict	protocol, training, lack of knowledge, lack of resources

		guidelines for operating on people who use IV drugs.	
	1014	We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over	lack of knowledge, lack of resources, follow-up care, desired changes, frustration, post-operation care, support for patient
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So, we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	tx compared to broader, lack of resources, stigma , regional differences
	1014	I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once	multidisciplinary group, follow-up care, regional differences, seriousness, insurance, lack of resources

		post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that.	
	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there.	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility

		Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	cost, liver vs heart, commitment to recovery, societal issue, lack of resources, insurance

	1009	So for post-operative care, thinking about these options, if you'd give someone a pick line and send them home, give them a pick line and have them stay in the hospital, or give them a PICC line and send them to a nursing facility? Safest option, best for the patient? Surgeon: For us, it's not by choice. No visiting nurse group in the state will accept a patient with the history of intravenous drug abuse who has a PICC line. So we can't send them home with a PICC line. So it's either they go to a nursing home or they stay in the hospital. If they're totally stable, to me it doesn't matter where they go. As long as they complete their course of antibiotics. You know, it's frustrating when these patients, again, some of whom get the PICC line. I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	PICC line risk, frustration, follow-up care, lack of resources, protocol, patient story
	1009	And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed.	time constraints, lack of resources, follow-up care, medical model, post-operation care, multidisciplinary group
	1009	Are there any guidelines or standards of care used this hospital when you're assessing people who inject drugs for valve replacements? Surgeon: No. I mean, there's no guideline on what to do if someone who injects drugs. The guidelines are based on a patient's medical condition and in terms of whether you think they need an operation or not. Do they have an indication but the guidelines – no guideline will every say you have to operate because surgical guidelines always incorporate surgeon	protocol, futility, lack of resources, training

		judgment. You can have someone that you think has an indication for surgery but that you feel is not indicated for X, Y or Z reasons, or is futile. And so there's nothing that ever says you have to in the surgical guidelines for endocarditis	
	1001	No, not to my knowledge. No, I don't think in the Cardiac Surgery Society there would be a guideline regarding how to take care of a patient with active HIV and hep C – for example, the infection – or patients with a history of a drug use. I don't think there is such a guideline for us to follow. If you notice anything, I [would like to read, easily]. [Overlapping noise] if there's such a guideline.	lack of knowledge, lack of resources, protocol, prioritization (secondary)
Left Side vs Right Side			
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, risk evaluation, left vs right side
	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem

		and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	
	1016	I: Have you ever discussed drug use with a patient like this? You kind of mentioned that, yeah. You have. If so, what questions do you ask when talking about that? S: I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting substance abuse help. Um, and so I'm very up front with that in addition to the risks. This particular case, I'm not sure you will get to this in the interview, is in the aortic valve position. I think that, um, we look at things a little bit different if it is on the left or the right side of the heart, in terms of when we go to surgery and how aggressive we are. I: Have you ever heard the term opioid use disorder or used it when talking with patients? S: Um, I've seen it documented in the chart, I don't, I've never specifically used that terminology.	discussing addiction, deservingness, risk evaluation, left vs right side

	1016	I: Tell me about the operative risks of reoperation vs. the original operation. S: Um, so the operative risks are, um, this is presuming you're doing a sternotomy for the first operation, um, the second operation there's a lot more scar tissue, the reentry is more dangerous because you can saw into the heart, the heart can be stuck to weird things so you're a lot more likely to injure the lungs, the heart, the vessels, the coronaries, um, and, um, the operation is much longer, uh, there's more bleeding, uh, so, um, hemostasis, uh, can be an issue afterwards. The need for blood transfusions. I will say, getting outside of the box a little bit, depending on which side of the heart, if you're doing the right side, some of the surgeons are employing more minimally invasive techniques. Um, and in some sense, doing kind of a mini and sternotomy or vice versa, sternotomy and then a mini, depending on which valve is involved, doesn't always work, but, um, is, um, can reduce the risk or alter the risk to some degree. Um, there's a, kind of, um, I don't want to say, ethical argument, but, um, to some degree, it doesn't, some people take up issue with doing a mini procedure, um, on somebody that's done this to themselves, and giving them a very cosmetic incision and, um, treating it like it's not a big deal, that it's really easy for us to just go in through these really small incisions and fix this, and not relaying the, the, um, you know, the point that this is really serious. Um, sometimes, a mini approach can leave the patients feeling like it's not as big of a deal as a full sternotomy.	risk evaluation, multiple surgeries, mechanical problem, left vs right side
	1016	Um, I think, too, the approach varies a little bit depending on what side of the heart, um, the lesion is on. So, um, if you have, uh, a lesion on the left side, we tend to be, and I tend to be a lot more aggressive, um, I'll tend to do more of a watch-and-wait on the right side of the heart. Um, in other words, let the patients get antibiotics, uh, because they, they've got bad tricuspid valve regurgitation, to some degree they can survive with that for a while. Let them prove that they can enter recovery, and then, I think the other piece of the puzzle is we have them come back to our clinic in six weeks for echo follow-up and to plan surgery at that time. The majority of patients that I see in consultation in the hospital do not show up to that six-week appointment. Um, I have had one, actually. Um, and so they take up clinic time, and, um, it's kind of my little, in some degree, my little test, if you're really	deservingness, left vs right side, follow-up care, commitment to recovery

		committed and you come back to see me in my office, then I'm willing to operate on you, but if you can't make the appointment, and you can't demonstrate some sort of, um, follow up, then, um, you know…	
	1002	Interviewer: What do you think about the term drug rehab? Respondent: I don't know. [Laughs] I mean, I'm not so interested in those patient care – except for the surgical part. So I'm not so interested in those. Interviewer: Do you think that drug rehab is different than drug detox? Respondent: I don't know. No comment.	rehab v detox, lack of knowledge, priorities, mechanical problem, left vs right side
	1017	S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	priorities, left vs right side, medical model, risk evaluation
	1013	I think that one thing that will be interesting to you in this study, or that would be interesting to be in this, is one area that I have really changed, my thinking has really evolved a lot is in right sided endocarditis. So, 20 years ago if someone had tricuspid valve endocarditis and a great big vegetation and severe tricuspid valve regurgitation and they embolized to their lungs and they had lung abscesses and maybe an empyema I would operate on them. I don't anymore. Because I think that they are better off being treated with antibiotics and even if they need a chest tube for their empyema, treat the infection unless, you can sterilize the vegetation, if you can't sterilize the vegetation then you are kind of stuck, you have to operate. But I am much more reluctant to operate on right sided disease now and I think that, if we can assemble enough information around that I think that could contribute to guidelines – it gets a little bit to your guideline question- that I think would actually be useful. I don't think we will ever have guidelines for these really difficult ethical ones but I can imagine developing an approach where for example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a	protocol, multiple surgeries, medical model, data, changes over time, desired changes, left vs right side

		valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	
	1017	I: Alright. What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	risk evaluation, priorities, left vs right side
	1013	And to close, is there anything I haven't asked you about today that you would like to say? I think that one thing that will be interesting to you in this study, or that would be interesting to be in this, is one area that I have really changed, my thinking has really evolved a lot is in right sided endocarditis. So, 20 years ago if someone had tricuspid valve endocarditis and a great big vegetation and severe tricuspid valve regurgitation and they embolized to their lungs and they had lung abscesses and maybe an empyema I would operate on them. I don't anymore. Because I think that they are better off being treated with antibiotics and even if they need a chest tube for their empyema, treat the infection unless, you can sterilize the vegetation, if you can't sterilize the vegetation then you are kind of stuck, you have to operate. But I am much more reluctant to operate on right sided disease now and I think that, if we can assemble enough information around that I think that could contribute to guidelines – it gets a little bit to your guideline question- that I think would actually be useful. I don't think we will ever have guidelines for these really difficult ethical ones but I can imagine developing an approach where for example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	protocol, left vs right side, desired changes, multiple surgeries

	1001	Does the type of valve impact the complications or the risk involved? Respondent: The valve surgery certainly carries the different level of risk. So each value has different technical difficulty or aspect. For example, mitral valve – the surgery would be more challenging than aortic valve surgery. The [redo] surgery will be more difficult than the first-time operation. So I would say everybody is different. Every patient is different. So we will not know the patient's individual risk for surgery until we complete their preop testing and evaluation.	risk evaluation, multiple surgeries, pre-operation care, left vs right side
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, pre-operation care, risk evaluation, valve preference, left vs right side
	1018	And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	mechanical problem, left vs right side, desired changes
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, risk evaluation, left vs right side

	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem
	1017	I: Alright. What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	risk evaluation, priorities, left vs right side
	1016	This particular case, I'm not sure you will get to this in the interview, is in the aortic valve position. I think that, um, we look at things a	left vs right side, risk evaluation

		little bit different if it is on the left or the right side of the heart, in terms of when we go to surgery and how aggressive we are.	
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	1016	I think, too, the approach varies a little bit depending on what side of the heart, um, the lesion is on. So, um, if you have, uh, a lesion on the left side, we tend to be, and I tend to be a lot more aggressive, um, I'll tend to do more of a watch-and-wait on the right side of the heart. Um, in other words, let the patients get antibiotics, uh, because they, they've got bad tricuspid valve regurgitation, to some degree they can survive with that for a while.	left vs right side

	1014	If I can, uh, so tricuspid valve, I will try as much as I can to wait, because even wide open tricuspid regurgitation is tolerated very well with those younger patients, and if they embolize, it goes to the lung, like I said, so it's not, it's nothing, it's bad, but it's not deadly, it's not going to go to the brain. Tricuspid valve, I try to wait as much as…sometimes they are unstable and you have to do something about it, but very unlikely. On the left side, we know that if patients embolize, we put them on antibiotics, there is a dramatic decrease in the risk of further embolization, and if the valve is not severely damaged, and they're not hemodynamically suffering from valve dysfunction, conservative therapy can help to live to fight another day, so I would like to operate on them when they are sterile, at least. So, I'd like to operate on them when they are far out from the acute episode, they've been on antibiotics as much as we can, and their valve, they're not in an acute setting, they were moved into subacute or the chronic setting, and now their valve got worse and they need it. So, you think that would help.	risk evaluation, left vs right side
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	1014	Have you ever discussed drug use with a patient like Katie, in this scenario? S: After…in Katie, after the fact. If patients are stable, they come in, and they have a left-sided valve that's infected, mitral or tricuspid, and they don't have any MR, the vegetation is over, over an acceptable size, there's nothing humongous that could likely embolize and hurt them and have a stroke, yes, I talk to them and, we are not the experts. I talk to them as much as we know from our training and experience. We talk to them. More often than not, they tell us what we want to hear. "This is it. I will never do this again. I have a younger child, and I will never do that again. I promise." But I never make it, so…they're under the gun. They're sick, they're in the hospital, and you can't just, you know, box them in a corner and say, you gotta promise, I won't do this if you come back and infect…I tell them, I tell them facts. But I try to make it, as much as I can, not a conditional conversation, meaning, you promise not to do this again, I will operate on you. Because, it's unfair, they're the patient, they're sick, they're in a bad spot, they're not doing well to begin with, they're using drugs, and for you to come in to be that overbearing on them, I think it is not the way you go. Having said that, if they are stable enough and they don't need an operation, I will say, we are going to send you home on antibiotics, I'll see you in a few weeks and repeat an echocardiogram to see if this thing is developing more, but so long as they are ok, antibiotics are the way to go, but you have to stop using. You know, under the gun, needing an operation, you cannot, there is no quid pro quo, I don't, they can, they will promise it, more often than not, I don't believe it, but you have to give them a shot. They're young.	discussing addiction, empathy, left vs right side
	1014	If I can, uh, so tricuspid valve, I will try as much as I can to wait, because even wide open tricuspid regurgitation is tolerated very well with those younger patients, and if they embolize, it goes to the lung, like I said, so it's not, it's nothing, it's bad, but it's not deadly, it's not going to go to the brain. Tricuspid valve, I try to wait as much as…sometimes they are unstable and you have to do something about it, but very unlikely. On the left side, we know that if patients embolize, we put them on antibiotics, there is a dramatic decrease in the risk of further embolization, and if the valve is not severely damaged, and they're not hemodynamically suffering from valve dysfunction, conservative therapy can help to	left vs right side, risk evaluation, medical model

		live to fight another day, so I would like to operate on them when they are sterile, at least. So, I'd like to operate on them when they are far out from the acute episode, they've been on antibiotics as much as we can, and their valve, they're not in an acute setting, they were moved into subacute or the chronic setting, and now their valve got worse and they need it.	
Liability of Medical Professionals			
	1010	ell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, pain management, collaboration with addiction medicine, accountability, liability of medical professionals, deservingness, follow-up care, protocol, risk evaluation
	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, tx compared to colleagues, support for patient, support for surgeons, deservingness, administration, frustration

	1008	Interviewer: Okay. And then are there any like professional society guidelines for providing -- for doing the surgery in the population? Respondent: You mean for providing what kind of care during the surgery? Interviewer: Yeah. Respondent: No. There's recommendations for -- treatment of endocarditis, with the ACC and the HA probably have the best guidelines. The American Association of Thoracic Surgery has their own guidelines but they're basically the same. I don't think they're as high a quality as the ACC HA. But, yeah, they're all basically the same. Interviewer: Okay. Cool. Respondent: But there's no guidelines on specifically how we treat patients with drug abuse.	protocol, lack of resources, training, liability of medical professionals
	1008	And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, post-operation care, liability of medical professionals, follow-up care, accountability, paternalism
	1008	What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	post-operation care, liability of medical professionals, follow-up care, accountability, paternalism, insurance

	1008	Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	changes over time, liability of medical professionals
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility
	1016	I: Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically	reinfection, commitment to recovery, liability of medical professionals, risk evaluation, multiple surgeries

		more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	save lives, commitment to recovery, risk evaluation, deservingness, liability of medical professionals
	1016	S: Um, it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals

		recovery, and, and help when we have a team approach.	
	1002	Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result.	risk evaluation, priorities, patient consent, futility, liability of medical professionals, seriousness
	1007	PICC line and go home? PICC line and stay in the hospital and PICC line and go to the nursery facility. Speaker 2: What do I think in which way? Speaker 1: It's an open ended question. We just want to know your, your perspectives on them Speaker 2: I think the unwritten standard today is that most people stay in house because of fear of liability. Speaker 1: Okay Speaker 2: Whether that's justified or not, that is kind of the most popular answer. Speaker 1: Okay, so what's the safest option? What would you think is the safest option and what's the best for this patient. Speaker 2: To stay in house.	post-operation care, priorities, liability of medical professionals, PICC line risk, follow-up care
	1017	I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us	deservingness, stigma , paternalism, perception of risk in PWID, futility, frustration, liability of medical professionals
	1017	If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, is it worth taking the patient to the OR? (Repeated) S: No. I: Ok. And why not? S: Well, because it is not about that risk. It is about, um, you know, their long-term risk.	risk evaluation, post-operation care, liability of medical professionals

	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness.	frustration, futility, commitment to recovery, liability of medical professionals, priorities, relapse
	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	futility, deservingness, commitment to recovery, time between operations, multiple surgeries, liability of medical professionals
	1013	If the patient had a 100% mortality without the surgery and a 50% operative mortality is it worth taking the patient to the OR? So, that's the way it usually gets presented to you by the medical student on the medicine service and I don't think about it that way. The way I think about it is the question of do I think that an operation is in the patient's best interest or not. So, lets imagine that the patient has, is an IV drug user, they've got prosthetic endocarditis, they've continually been using intravenous drugs, even in the	perception of risk in PWID, liability of medical professionals, futility, deservingness

		hospital, and we see that, too right? Um, and then you presented that person to me and you say ok they have prosthetic valve endocarditis, its staph endocarditis, they've got an annular abscess they've got a mortality rate of 100% if you don't operate and they have been using drugs while they have been in the hospital, I don't think an operation is in their best interest. Could we potentially get then through the operation from a technical standpoint, yes, but do I think that we have a likelihood of restoring them to health, I would say no because their underlying condition is so severe. So, I think it is very seldom as simple a question as 100% without and 50% with. Have I adequately pivoted? And avoided answering that question? That's the way I think about it.	
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	pain management, follow-up care, post-operation care, liability of medical professionals, collaboration with addiction medicine, changes over time
	1003	nterviewer: You know, what are your thoughts on management decisions in those cases? Respondent: Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously.	accountability, liability of medical professionals, deservingness, relapse, follow-up care, post-operation care
	1003	would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? Respondent: No. Interviewer: Okay. Respondent: It's – you put someone on the	pregnancy, liability of medical professionals

		lung machine, it puts the fetus at risk for fetal demise. So, that's my concern. Whether or not to offer surgery, no, I mean, I'll - pregnant or not pregnant, if they need an operation, we'll do it. It's just, we're - what's going to happen to the fetus during the operation? That's my concern.	
	1011	Tell me about your experience with managing pain in this population. It is, it does become tricky because you want to give them the pain meds they need to get over their operative pain but also don't want to, uh, it sometimes becomes hard to decide if they are having real pain or if they are using that as a pretext or pretense to get more prescribed pain meds. So, most of the time we will get the acute pain team and the [addiction team] together so that they can help us with managing pain in these patients. Our teams prescribe them whatever routine pain meds they prescribe, sometimes they need different dosages of pain meds based on what tolerance they have built but we are reliant on our inpatient pain specialists to help through that.	pain management, multidisciplinary group, perception of risk in PWID, liability of medical professionals
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility
	1017	I: If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, is it worth taking the patient to the OR? (Repeated) S: No. I: Ok. And why not? S: Well, because it is not about that risk. It is about, um, you know, their long-term risk.	risk evaluation, post-operation care, liability of medical professionals

	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness	frustration, priorities, futility, relapse, commitment to recovery, liability of medical professionals
	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	deservingness, reinfection, multiple surgeries, time between operations, futility, liability of medical professionals
	1013	So, that's the way it usually gets presented to you by the medical student on the medicine service and I don't think about it that way. The way I think about it is the question of do I think that an operation is in the patient's best interest or not. So, lets imagine that the patient has, is an IV drug user, they've got prosthetic endocarditis, they've continually been using intravenous drugs, even in the hospital, and we see that, too right? Um, and then you presented that person to me and you say ok they have prosthetic valve endocarditis,	deservingness, liability of medical professionals, futility, risk evaluation

		its staph endocarditis, they've got an annular abscess they've got a mortality rate of 100% if you don't operate and they have been using drugs while they have been in the hospital, I don't think an operation is in their best interest. Could we potentially get then through the operation from a technical standpoint, yes, but do I think that we have a likelihood of restoring them to health, I would say no because their underlying condition is so severe. So, I think it is very seldom as simple a question as 100% without and 50% with. Have I adequately pivoted? And avoided answering that question? That's the way I think about it.	
	1015	people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	liability of medical professionals, disagreements (professional), accountability, multidisciplinary group, frustration
	1007	Speaker 1: All right. So what do you think, um, about these options? PICC line and go home? PICC line and stay in the hospital and PICC line and go to the nursery facility. Speaker 2: What do I think in which way? Speaker 1: It's an open ended question. We just want to know your, your perspectives on them Speaker 2: I think the unwritten standard today is that most people stay in house because of fear of liability. Speaker 1: Okay Speaker 2: Whether that's justified or not, that is kind of the most popular answer. Speaker 1: Okay, so what's the safest option? What would you think is the safest option and what's the best for this patient. Speaker 2: To stay in house.	PICC line risk, liability of medical professionals
	1001	In this group of patients, if they continue the IV drug use, their lifestyle – the future reinfection will be very high. The surgical risk is high enough, and [in this moment] the cardiac surgeon's performance is carefully monitored by this society. So we're very concerned about our operative outcome. So I think if there is a	perception of risk in PWID, liability of medical professionals, discussing addiction, reinfection, relapse, administration

		high likelihood the patient would be back on the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	
	1001	Respondent: Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, risk evaluation, discussing addiction, patient consent, liability of medical professionals, knowledge, contract
	1001	Interviewer: Do you consider other things if you're choosing what to do with the PICC line, like housing, insurance, job status, or childcare? Do any of those things come to mind? Respondent: To be honest, I really don't know the [outer perspective of our practice]. So there will be the case management and social workers who help with those perspectives. I make decisions based on a patient's own medical need. There will be other care that we have to consider, but gladly we have specialists to help us out.	PICC line risk, liability of medical professionals, follow-up care, multidisciplinary group, insurance
	1004	R: If the patient has 100 percent mortality without surgery, and like a 50 percent [operative] mortality, like would you say it's worth taking the patient to the operating room? I: That patient sounds inoperable, their mortality is too high, it's too high a risk	risk evaluation, futility, liability of medical professionals

	1008	Interviewer: Okay. And then are there any like professional society guidelines for providing -- for doing the surgery in the population? Respondent: You mean for providing what kind of care during the surgery? Interviewer: Yeah. Respondent: No. There's recommendations for -- treatment of endocarditis, with the ACC and the HA probably have the best guidelines. The American Association of Thoracic Surgery has their own guidelines but they're basically the same. I don't think they're as high a quality as the ACC HA. But, yeah, they're all basically the same. Interviewer: Okay. Cool. Respondent: But there's no guidelines on specifically how we treat patients with drug abuse.	protocol, lack of resources, liability of medical professionals
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	commitment to recovery, deservingness, second chance, liability of medical professionals, contract, futility, reinfection, multiple surgeries
	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient	lack of knowledge, SUD treatment, liability of medical professionals, perception of risk in PWID, cost, insurance

		who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	
	1012	Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging. What works or doesn't work to treat their pain in your experience? We usually get a pain consult and let them help us manage it and I think those are you know when you are giving opiates to people with an opiate addiction it's not, you know, so we try all the non-opiate medications but they don't tend to be very effective either.	pain management, post-operation care, liability of medical professionals, stigma
	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing,	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive

		and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	
	1012	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So PICC line and go home is never and option because that basically gives them a mainline to use drugs so that is never an option. And there is no nursing facility, nursing company, antibiotic business that I am aware of that will manage someone with you know a history of IVDA in an outpatient setting with a PICC line. So, I don't believe that that is an option anywhere. PICC line and nursing facility- yes if possible and if the organism is one that could be potentially treated non-operatively or at least for a while to help stabilize the situation and then often what we do because it is very difficult to find nursing facilities that will take these people also because they have this terrible group of friends that often will bring drugs in and all this other stuff that surrounds the patient, they don't want them either, so they often will get left in the hospital for antibiotics for a period of time before they get their valve surgery. So, of your PICC line and go home – no; PICC line and nursing facility- yes but rarely available, so PICC line and stay in the hospital is the usual default.	PICC line risk, priorities, post-operation care, liability of medical professionals
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons

	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	multiple surgeries, deservingness, commitment to recovery, second chances, liability of medical professionals, contract, futility
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility
	1017	I: If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, is it worth taking the patient to the OR? (Repeated) S: No. I: Ok. And why not? S: Well, because it is not about that risk. It is about, um, you know, their long-term risk.	risk evaluation, post-operation care, liability of medical professionals
	1016	Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these	commitment to recovery, liability of medical professionals, reinfection, risk evaluation, multiple surgeries

		things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	risk evaluation, liability of medical professionals, save lives, commitment to recovery, deservingness
	1016	it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their recovery, and, and help when we have a team approach.	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals

	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	lack of knowledge, SUD treatment, cost, accountability, liability of medical professionals
	1012	What works or doesn't work to treat their pain in your experience? We usually get a pain consult and let them help us manage it and I think those are you know when you are giving opiates to people with an opiate addiction it's not, you know, so we try all the non-opiate medications but they don't tend to be very effective either.	pain management, stigma , post-operation care, liability of medical professionals
	1012	Do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? I mean sometimes. Those things sometimes weigh into your decision, sometimes they have little kids and you know those things influence what you do, but in general no.	age, empathy, priorities, liability of medical professionals, futility
	1015	To close, is there anything I haven't asked you about that you would like to say? S: Uh…I think that, um, people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	liability of medical professionals, disagreements (professional), multidisciplinary group, frustration, accountability

	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, deservingness, administration, frustration
	1009	an you say more about the futility piece? Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if you fix the heart, they're never going to return to a quality of life. Other times there are complications that have arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	futility, risk evaluation, liability of medical professionals, post-operation care
Liver vs Heart			
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness

	1010	I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	liver vs heart, deservingness, stigma , reinfection, lack of resources, risk evaluation
	1019	So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a	liver vs heart, accountability, commitment to recovery, deservingness, futility, stigma

		valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis	
	1019	oint is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going to take care of the organs they're going to get.	liver vs heart, deservingness, second chance, stigma
	1019	OK. So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take	liver vs heart, commitment to recovery, futility, accountability, stigma

		another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis Right because we have thousands of bioprostheses on the shelf. Um, not thousands maybe tens of… tens of… maybe a hundred, I don't know. [LAUGHTER] I don't know how many we have on shelf. But, we have lots. Right Point is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going to take care of the organs they're going to get.	
	1008	Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And,	liver vs heart, cost, deservingness, medical model, relapse, frustration, paternalism, reinfection

		hopefully, they won't need their operation. But often they do.	
	1019	OK. So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis Right because we have thousands of bioprostheses on the shelf. Um, not thousands maybe tens of… tens of… maybe a hundred, I don't know. [LAUGHTER] I don't know how many we have on shelf. But, we have	liver vs heart, commitment to recovery, futility, accountability, stigma

		lots. Right Point is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going to take care of the organs they're going to get.	
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, risk evaluation, societal issue
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness

		we should be trying to figure out ways to treat people right up to the end until it is pure futility.	
	1016	Some people make comparisons between valve replacements in the setting of infective endocarditis and a liver transplant in the setting of alcoholism. What do you think of these examples? S: Um, they're both some degree self-inflicted. Um, I don't think the example holds up well, because you could argue that anybody that doesn't exercise or doesn't eat right that develops coronary disease, um, because of their lifestyle and diet is also self-inflicted, so, I think that, um, a disease is a disease, and as doctors it is our obligation to treat the patients. I: Great, ok, so going back to Katie. You operate on Katie, and she does well. She's linked into a methadone maintenance program. About one year later, she is back in the hospital and she has prosthetic valve endocarditis. We kind of talked about this before. Have you seen prosthetic valve endocarditis in people who inject drugs? S: Yes.	liver vs heart, deservingness, save lives
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	liver vs heart, deservingness, frustration, reinfection, relapse, commitment to recovery

	1002	metimes people will compare individuals who require valve replacements who have endocarditis to someone who is an alcoholic and needs a liver transplant. Do you think those two examples are similar or different? Respondent: No, I think they're different. Interviewer: Different examples? Respondent: Yeah. Well, it's [unintelligible 00:14:10]. Interviewer: Why do you consider it different? Respondent: It's totally different. The heart and kidney [are] totally different, and then alcohol infection – those are different. So why are those the same – my question is.	liver vs heart
	1007	So some people make comparisons between valve replacements in the setting of infective endocarditis amongst people who use drugs and liver transplants in the setting of alcoholism. What do you think of this as examples? Speaker 2: I mean there's, sometimes it applies, sometimes it doesn't depending on the situation.	liver vs heart
	1017	I: Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think of these examples? S: Not a fair comparison. I: How come? S: Because of the scarcity of the liver transplant is different. We, um, we have plenty of valves.	liver vs heart
	1013	ome people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I don't think it is a very good parallel. I think, for a bunch of reasons, one is actually maybe the opposite of what one might be thinking. For liver transplant, you are thinking about a scarce resource so I actually think it is harder to defend using a scarce resource in a situation where someone may or may not have recovered from their alcoholism. If they are still using alcohol then I think it is hard to defend doing a liver transplant when it's a scarce resource but we have plenty of valves on the shelf, that's not the issue. So, I don't think it is a great parallel. Now if people want to say its related to, that the parallel has to do	liver vs heart, deservingness, empathy, societal issue, support for patient

		with behaviors then I would say a lot of diseases that we treat are related to our behaviors whether its obesity, diabetes which leads to coronary artery disease which we treat all the time, or smoking which leads to coronary artery disease which we treat all of the time I mean a lot of conditions that adults get there are behavioral factors that contribute, so I don't think that's a legitimate criticism.	
	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone. Interviewer: Interesting. Okay. Respondent: A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	second chance, liver vs heart, save lives, support for patient, paternalism, accountability, commitment to recovery

	1009	Interviewer: Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	cost, liver vs heart, lack of knowledge, insurance
	1011	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? I think they're, I think it's a reasonable comparison if you were to think about it in terms of disease and the treatment in the sense that uh, that the disease is not valve failure, that is the symptom of the problem that the patient is facing, the real problem is their drug abuse thing.	liver vs heart, discussing addiction
	1011	f you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant. The reason it is different though is that we still operate on them, you may ask the question well if that is how you feel then why do you still operate on these patients because you know no one would get a liver transplant if they are still drinking alcohol because the resources are different, there is only a finite	liver vs heart, multiple surgeries, save lives, commitment to recovery, lack of resources, paternalism

		number of livers and they really are in a position where they can put a hard stop to it and say no we are not going to do this because somebody else can get that liver. In our situation we don't make that an active hard stop for us because we are not limited by the amount of valves that we have or other things we have so we would like to give these patients a chance, we want to give them a chance we want to give them a shot at getting better so sometimes we do accept less than ideal situations.	
	1017	I: Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think of these examples? S: Not a fair comparison. I: How come? S: Because of the scarcity of the liver transplant is different. We, um, we have plenty of valves.	liver vs heart
	1013	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I don't think it is a very good parallel. I think, for a bunch of reasons, one is actually maybe the opposite of what one might be thinking. For liver transplant, you are thinking about a scarce resource so I actually think it is harder to defend using a scarce resource in a situation where someone may or may not have recovered from their alcoholism. If they are still using alcohol then I think it is hard to defend doing a liver transplant when it's a scarce resource but we have plenty of valves on the shelf, that's not the issue. So, I don't think it is a great parallel. Now if people want to say its related to, that the parallel has to do with behaviors then I would say a lot of diseases that we treat are related to our behaviors whether its obesity, diabetes which leads to coronary artery disease which we treat all the time, or smoking which leads to coronary artery disease which we treat all of the time I mean a lot of conditions that adults get there are behavioral factors that contribute, so I don't think that's a legitimate criticism.	liver vs heart, support for patient, societal issue, deservingness, empathy
	1015	I: What do you think about drug rehab and is it different from drug detox? S: Um…the more and more I treat this disease, I feel it is a chronic disease and can be suppressed but not fully treated. So, yeah, I think that drug rehab has a place, but I don't	rehab v detox, stigma , futility, liver vs heart

		know that, you know, once you, once you are a drug user you are pretty much always a drug user. The same way you would think of alcohol, you know.	
	1015	: Ok. Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think of these examples? S: I haven't heard that. Um, I guess you could draw some loose associations between the two.	liver vs heart
	1007	Speaker 1: Some people make comparisons between valve replacements in the setting of infectious endocarditis and liver transplants in the setting of alcoholism. What do you think about these examples? Speaker 2: Say that again Speaker 1: So some people make comparisons between valve replacements in the setting of infective endocarditis amongst people who use drugs and liver transplants in the setting of alcoholism. What do you think of this as examples? Speaker 2: I mean there's, sometimes it applies, sometimes it doesn't depending on the situation.	liver vs heart
	1001	It's hard to say. To be honest, it's not exactly the same, but I understand. The mechanism is similar. I never use that example, liver transplant and relapse in alcohol use, as an example to my patients, but I think they are similar. To my knowledge, if a patient has no sign of quitting alcohol, the liver transplant will be contraindicated. That's based on my knowledge in my past in my training. But I think even though we have never made it clear in our practice to an endocarditis patient who has no plan of quitting the drug use – but I think eventually there will be an overall consensus, you know?	commitment to recovery, liver vs heart, protocol, disagreements (professional), contract
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	stigma , discussing addiction, liver vs heart, deservingness, frustration, futility

	1005	I guess I've never thought about it. I think that the liver transplant group probably has a much more stringent criteria for transplanting alcohol users than we have for operating on drug users. It certainly maybe in the future that we need to become more strict with these patients. It's not uncommon for us to get called to do a third tricuspid on a patient that keeps reusing or is actively reusing. I typically tell people one operation and that's it. If we put these people in the same population as liver transplant patients we would probably be doing less valves on endocarditis patients because their criteria are more stringent.	liver vs heart, deservingness, second chance
	1008	Interviewer: Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	liver vs heart, deservingness, futility, frustration, relapse, SUD treatment
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, perception of risk in PWID, societal issue

	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	tx compared to broader, deservingness, liver vs heart, futility, paternalism
	1012	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think it is a reasonable example. Do you think they are similar? Well in the sense that you know have a life-threatening problem, you know, what's different is the people that are uh, well couple things are different- one thing that is different is that in order to transplant a liver someone who's diseased their liver with chronic alcohol use, you have to get that liver from a donor which is a much more scarce resource than a valve which we can just pick off the shelf. So, in that sense I don't think it is a great example. And usually the valve, you know the endocarditis patients, it's more of an immediate life-threatening problem, whereas the liver cirrhotic is more of a chronic disease that they have developed over time. And another difference is the, when, my understanding is when they transplant alcoholic cirrhotics, they usually have demonstrated abstinence for a period of time which is generally, I would think 6 months or longer or else they have some other reason to think that they are absolutely not going to do it again. Um, and we don't have that luxury with endocarditis. They come in, they have a life-threatening problem, we can't wait 6 months to get that valve replaced.	liver vs heart, desired changes, priorities, commitment to recovery, time constraints

	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, risk evaluation, societal issue
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness
	1005	I guess I've never thought about it. I think that the liver transplant group probably has a much more stringent criteria for transplanting alcohol users than we have for operating on drug users. It certainly maybe in the future that we need to become more strict with these patients. It's not uncommon for us to get called to do a third tricuspid on a patient that keeps reusing or is actively reusing. I typically tell people one operation and that's it. If we put these people in the same population as liver transplant patients we would probably be doing less valves on endocarditis patients because their criteria are more stringent.	liver vs heart, deservingness, second chance
	1017	I: Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think of these examples? S: Not a fair comparison. I: How come? S: Because of the scarcity of the liver transplant is different. We, um, we have plenty of valves.	liver vs heart

	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	liver vs heart, stigma , deservingness, frustration, futility
	1016	Some people make comparisons between valve replacements in the setting of infective endocarditis and a liver transplant in the setting of alcoholism. What do you think of these examples? S: Um, they're both some degree self-inflicted. Um, I don't think the example holds up well, because you could argue that anybody that doesn't exercise or doesn't eat right that develops coronary disease, um, because of their lifestyle and diet is also self-inflicted, so, I think that, um, a disease is a disease, and as doctors it is our obligation to treat the patients.	liver vs heart, deservingness, save lives
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness
	1012	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think it is a reasonable example. Do you think they are similar? Well in the sense that you know have a life-threatening problem, you know, what's different is the people that are uh, well couple things are different- one thing that is different is that in order to transplant a liver someone who's diseased their liver with chronic alcohol use, you have to get that liver from a donor which is a much more scarce resource than a valve which we can just pick off the shelf. So, in that sense I don't think it is a great example. And usually the valve, you know the endocarditis patients, it's more of an immediate life-threatening problem, whereas	liver vs heart, desired changes, commitment to recovery

		the liver cirrhotic is more of a chronic disease that they have developed over time. And another difference is the, when, my understanding is when they transplant alcoholic cirrhotics, they usually have demonstrated abstinence for a period of time which is generally, I would think 6 months or longer or else they have some other reason to think that they are absolutely not going to do it again. Um, and we don't have that luxury with endocarditis. They come in, they have a life-threatening problem, we can't wait 6 months to get that valve replaced.	
	1015	I: What do you think about drug rehab and is it different from drug detox? S: Um…the more and more I treat this disease, I feel it is a chronic disease and can be suppressed but not fully treated. So, yeah, I think that drug rehab has a place, but I don't know that, you know, once you, once you are a drug user you are pretty much always a drug user. The same way you would think of alcohol, you know.	stigma , liver vs heart, futility, rehab v detox
	1015	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think of these examples? S: I haven't heard that. Um, I guess you could draw some loose associations between the two.	liver vs heart
	1010	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about those comparisons? I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on	liver vs heart, deservingness, lack of resources, risk evaluation

		the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	
	1014	I: Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think of these examples? S: Interesting. Let me think about it for a second. Uh… Yeah, they're similar. They're similar. They're similar, though, though, one aspect that they usually differ on is, is liver's moral ambiguity, on the liver side, you are taking a liver, the number of donors is limited, the pool is limited, and that liver that you are putting it on someone's high risk patient, you know, who might or might not recur, you know, without his alcoholism, and you, another patient that, didn't deserve it, but doesn't have that problem, he has some other liver problem not from alcoholism, and he did not get that liver, this patient did. Whereas for valves, I mean, the valves are there on the shelf, there are so many of them, so maybe in that perspective is a little bit different. But, there's a lot of commonalities between the two situations.	liver vs heart, deservingness
	1011	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? I think they're, I think it's a reasonable comparison if you were to think about it in terms of disease and the treatment in the sense that uh, that the disease is not valve failure, that is the symptom of the problem that the patient is facing, the real problem is their drug abuse thing. If you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant. The reason it is different though is that we still operate on them, you may ask the question well if that is how you feel then why do you still operate on	liver vs heart, lack of resources, deservingness

		these patients because you know no one would get a liver transplant if they are still drinking alcohol because the resources are different, there is only a finite number of livers and they really are in a position where they can put a hard stop to it and say no we are not going to do this because somebody else can get that liver. In our situation we don't make that an active hard stop for us because we are not limited by the amount of valves that we have or other things we have so we would like to give these patients a chance, we want to give them a chance we want to give them a shot at getting better so sometimes we do accept less than ideal situations.	
	1002	Interviewer: Sometimes people will compare individuals who require valve replacements who have endocarditis to someone who is an alcoholic and needs a liver transplant. Do you think those two examples are similar or different? Respondent: No, I think they're different. Interviewer: Different examples? Respondent: Yeah. Well, it's [unintelligible 00:14:10]. Interviewer: Why do you consider it different? Respondent: It's totally different. The heart and kidney [are] totally different, and then alcohol infection – those are different.	liver vs heart
	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to	commitment to recovery, liver vs heart, deservingness, second chance

		abstain for a period of time before the liver team's willing to put a liver in someone.	
	1003	A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	protocol, liver vs heart, changes over time
	1005	nterviewer: Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism, what do you think of these examples. Is it equivalent, similar, different? Interviewee: I guess I've never thought about it. I think that the liver transplant group probably has a much more stringent criteria for transplanting alcohol users than we have for operating on drug users. It certainly maybe in the future that we need to become more strict with these patients. It's not uncommon for us to get called to do a third tricuspid on a patient that keeps reusing or is actively reusing. I typically tell people one operation and that's it. If we put these people in the same population as liver transplant patients we would probably be doing less valves on endocarditis patients because their criteria are more stringent.	multiple surgeries, liver vs heart, deservingness, second chance
	1014	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think of these examples? S: Interesting. Let me think about it for a second. Uh… Yeah, they're similar. They're similar. They're similar, though, though, one aspect that they usually differ on is, is liver's moral ambiguity, on the liver side, you are taking a liver, the number of donors is limited, the pool is limited, and that liver that you are putting it on someone's high risk patient, you know, who might or might not recur, you know, without his alcoholism, and you,	liver vs heart, deservingness

		another patient that, didn't deserve it, but doesn't have that problem, he has some other liver problem not from alcoholism, and he did not get that liver, this patient did. Whereas for valves, I mean, the valves are there on the shelf, there are so many of them, so maybe in that perspective is a little bit different. But, there's a lot of commonalities between the two situations.	
	1009	Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	cost, liver vs heart, commitment to recovery, societal issue, lack of resources, insurance
Mechanical Problem			
	1019	Great. So, for our first interview question, what are your first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Umm. My, uh, my first thought usually is a… is a clinical one, whether or not a valve	priorities, mechanical problem

		replacement is indicated.	
	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job	discussing addiction, post-operation care, mechanical problem, lack of knowledge, SUD treatment
	1019	Um, tell me about the oper-risks of the reoperation versus the original operation. You know, redo sternotomy. So, uh, that always imparts some risks… risks of getting into the heart and so forth. Um, xplanting the heart-…explanting the valve. This is for prosthetic valve endocarditis, right? So explanting the valve [COUGHING] usually what happens is when you take… So, by the time you get to these patients, uh, the heart's partially dehisced from the infection and the infection is grown into the annulus. And, so, when you take the… when you take the valve out, a variable portion of the annulus is destroyed and maybe even some of the myocardium. And, so, uh, it's usually, uh, not feasible just to do a re-replacement, you've got to do more. Whether it be carefully debride the whole area, patch the defects and then do a replacement on top of it… Or just proceed with a homograft root…	multiple surgeries, mechanical problem, seriousness

		They're difficult operations. The visibility's often bad. You know, they're challenging. They're challenging for sure.	
	1019	Great. So, for our first interview question, what are your first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Umm. My, uh, my first thought usually is a… is a clinical one, whether or not a valve replacement is indicated.	priorities, mechanical problem
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem
	1019	Great. So, for our first interview question, what are your first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Umm. My, uh, my first thought usually is a… is a clinical one, whether or not a valve replacement is indicated.	priorities, mechanical problem
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, risk evaluation, left vs right side
	1018	Looking back is there anything you would change about your approach for prior patients you have cared for? Only to recognize that homografts used to be a religion in the 80s and I think there is enough data now to show that a good debridement	data, changes over time, mechanical problem

		and a typical xenoprosthesis with a dacron graft still has very good results, excellent results although I think still not quite as good as grafts in the most challenging of infections.	
	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem

	1016	We use less Dilaudid in cardiac surgery, but it is available. Um, every once in a while, we will use lidocaine patches for the chest wall, um, we will do, um, Toradol, sometimes. Um, I think we've even doing some IV Tylenol, in certain cases. Um, those are kind of the big ones, um. I've tried this once recently, and it wasn't in the setting of IV drugs, but just as something to think about, uh, there, I forget what the context is, I think it was because he had some bad respiratory function, and we were worried about splinting and pulmonary recovery post-sternotomy, um, the anesthesia team put some, like, cue balls in under the sternum, into the muscles, and they did like, uh, they did like a block of the chest wall and then they put, almost like in plastic surgery, some coils that sit in very tiny catheters that have like a local anesthetic that, kind of, slowly injects over, um, you know, over days, and then they take it out like four days later or so. So, it kind of helps, I've only used it once, and it wasn't in the	pain management, mechanical problem
	1016	I: Tell me about the operative risks of reoperation vs. the original operation. S: Um, so the operative risks are, um, this is presuming you're doing a sternotomy for the first operation, um, the second operation there's a lot more scar tissue, the reentry is more dangerous because you can saw into the heart, the heart can be stuck to weird things so you're a lot more likely to injure the lungs, the heart, the vessels, the coronaries, um, and, um, the operation is much longer, uh, there's more bleeding, uh, so, um, hemostasis, uh, can be an issue afterwards. The need for blood transfusions. I will say, getting outside of the box a little bit, depending on which side of the heart, if you're doing the right side, some of the surgeons are employing more minimally invasive techniques. Um, and in some sense, doing kind of a mini and sternotomy or vice versa, sternotomy and then a mini, depending on which valve is involved, doesn't always work, but, um, is, um, can reduce the risk or alter the risk to some degree. Um, there's a, kind of, um, I don't want to say, ethical argument, but, um, to some degree, it doesn't, some people take up issue with doing a mini procedure, um, on somebody that's done this to themselves, and giving them a very cosmetic incision and, um, treating it like it's not a big deal, that it's really easy for us to just go in through these really small incisions and fix this, and not relaying the, the, um, you know, the point that this is really serious. Um,	risk evaluation, multiple surgeries, mechanical problem, left vs right side

		sometimes, a mini approach can leave the patients feeling like it's not as big of a deal as a full sternotomy.	
	1002	Interviewer: How knowledgeable do you feel about available treatments for people who use drugs? Respondent: Again? Interviewer: Knowledgeable. Respondent: How knowledgeable? You mean the surgical ones?	mechanical problem
	1002	So if you have a patient who comes in who uses drugs, how much knowledge do you feel you have about the treatments they can use for someone who is trying to get off of it? Respondent: I don't know. I don't have that much knowledge, except for the surgical part. Interviewer: Would you ever want more training on this? Respondent: What's the benefit of doing the training? I'm happy to do it, but the amount of time – what's the rush now of doing the training events?	time constraints, SUD treatment, lack of knowledge, priorities, training, mechanical problem
	1002	Interviewer: What do you think about the term drug rehab? Respondent: I don't know. [Laughs] I mean, I'm not so interested in those patient care – except for the surgical part. So I'm not so interested in those. Interviewer: Do you think that drug rehab is different than drug detox? Respondent: I don't know. No comment.	rehab v detox, lack of knowledge, priorities, mechanical problem, left vs right side

	1003	Respondent: Based on their clinical presentation, the presence of fevers, the presence of [bacteremia]; and we look at the echo images of a particular valve that's infected, to determine how badly infected the valve is, whether or not medical therapy will be sufficient or, on the other extreme, the valve is so destroyed, the patient [that's] [unintelligible 0:00:53] compromised from the valve destruction that surgery clearly is indicated. Other times, it's not so clear, it's not a black and white issue. In some cases, we're – requires clinical judgement as to whether or not surgery is indeed indicated. And then the timing is also an important issue. We need to move ahead soon, or can we afford to wait a period of time to feed them antibiotics and see how they respond.	risk evaluation, mechanical problem, seriousness, time constraints
	1003	what are some of the operative risks of reoperation, versus like, an original operation – a first-time operation? Respondent: The operation's more difficult, because you have scar tissue on the heart, and then the scar tissue on the valve. Interviewer: Okay. Respondent: So, you have to remove the valve and put a new valve in, and maybe the first time you have to go back and do it again is not that big of a deal, but the second, third, and fourth operations are truly more difficult. But even the second one is a little more difficult. And often times, when someone's got an infected prosthetic valve, there's more than meets the eye, and [after] you get in there, the infection's actually more invasive, and more of an – chance for a root abscess, or an abscess cavity, which makes the operation more difficult, technically. So yes, the second-time operation is more challenging. More often than not.	multiple surgeries, mechanical problem, seriousness
	1011	I like the fact that it is a definitive thing, that you fixing the problem will fix them if it is a definitive problem it will have a definitive fix so most of the time you are able to see definitive results. So, I like that aspect of it. It also is sometimes stimulating to figure out how to put back together what you have just taken apart. Sometimes it is really artistic, and it is really fun to do and at the same time the results that you see are, uh, can be separated at the time of that operation. Unlike some of the non-interventional fields where the process is more gradualized, so part of it is	accountability, knowledge, mechanical problem

		selfish too, self-gratification, it also is a definitive treatment, kind of a thing in my mind, you know there are things that medicine can fix, but there are things that you really just have to physically fix them.	
	1015	: Does the patient's commitment to treatment impact your surgical decisions at all? S: No. I: Ok. And how come? S: Uh…because there's, uh, there's an identifiable, you know, problem, surgical problem, so that needs to be addressed and whether or not they are planning on quitting, it is not my place to hypothesize about that. It is just something that you would figure out after the fact.	perception of risk in PWID, mechanical problem, defensive
	1015	I mean there are a number of them, yeah. I: Yeah. What…does it impact your decision to operate if their endocarditis is related to drug use? S: Um…sometimes. It really depends on how hard of a reoperation I think it's going to be. I: Gotcha. S: If I think I that, um, I'm going to cause more harm by reoperating and they continue to use IV drugs, then my decision is going to be, no I'm not going to reoperate. If there is something that is potentially related to past use and can be easily fixed, of course I would offer an operation. If they are active using and reinfected their valve, and they've got something that is easily fixable, then I'd consider doing it.	mechanical problem, seriousness, multiple surgeries, commitment to recovery, reinfection, relapse
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, pre-operation care, risk evaluation, valve preference, left vs right side
	1018	Looking back is there anything you would change about your approach for prior patients you have cared for? Only to recognize that homografts used to be a religion in the 80s and I think there is enough data now to show that a good debridement and a typical xenoprosthesis with a dacron graft still has very good results, excellent	data, changes over time, mechanical problem

		results although I think still not quite as good as grafts in the most challenging of infections.	
	1018	And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	mechanical problem, left vs right side, desired changes
	1012	ave you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	empathy, discussing addiction, support for patient, training, mechanical problem, societal issue, save lives
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, risk evaluation, left vs right side
	1018	Looking back is there anything you would change about your approach for prior patients you have cared for? Only to recognize that homografts used to be a religion in the 80s and I think there is enough data now to show that a good debridement and a typical xenoprosthesis with a dacron graft still has very good results, excellent results although I think still not quite as good as grafts in the most challenging of infections.	data, changes over time, mechanical problem

	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem
	1016	, every once in a while, we will use lidocaine patches for the chest wall, um, we will do, um, Toradol, sometimes. Um, I think we've even doing some IV Tylenol, in certain cases. Um, those are kind of the big ones, um. I've tried this once recently, and it wasn't in the setting of IV drugs, but just as something to think about, uh, there, I forget what the context is, I think it was because he had some bad respiratory function, and we were worried about splinting and pulmonary recovery post-sternotomy, um, the anesthesia team put some, like, cue balls in under the sternum, into	mechanical problem

		the muscles, and they did like, uh, they did like a block of the chest wall and then they put, almost like in plastic surgery, some coils that sit in very tiny catheters that have like a local anesthetic that, kind of, slowly injects over, um, you know, over days, and then they take it out like four days later or so. So, it kind of helps, I've only used it once, and it wasn't in the setting of IV drug use, but, um, something that, you know, may be beneficial in this patient population.	
	1016	Um, so the operative risks are, um, this is presuming you're doing a sternotomy for the first operation, um, the second operation there's a lot more scar tissue, the reentry is more dangerous because you can saw into the heart, the heart can be stuck to weird things so you're a lot more likely to injure the lungs, the heart, the vessels, the coronaries, um, and, um, the operation is much longer, uh, there's more bleeding, uh, so, um, hemostasis, uh, can be an issue afterwards. The need for blood transfusions. I will say, getting outside of the box a little bit, depending on which side of the heart, if you're doing the right side, some of the surgeons are employing more minimally invasive techniques. Um, and in some sense, doing kind of a mini and sternotomy or vice versa, sternotomy and then a mini, depending on which valve is involved, doesn't always work, but, um, is, um, can reduce the risk or alter the risk to some degree. Um, there's a, kind of, um, I don't want to say, ethical argument, but, um, to some degree, it doesn't, some people take up issue with doing a mini procedure, um, on somebody that's done this to themselves, and giving them a very cosmetic incision and, um, treating it like it's not a big deal, that it's really easy for us to just go in through these really small incisions and fix this, and not relaying the, the, um, you know, the point that this is really serious. Um, sometimes, a mini approach can leave the patients feeling like it's not as big of a deal as a full sternotomy.	multiple surgeries, mechanical problem, left vs right side, risk evaluation
	1012	Have you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in	support for patient, training, mechanical problem

		the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	
	1015	I: Does the patient's commitment to treatment impact your surgical decisions at all? S: No. I: Ok. And how come? S: Uh…because there's, uh, there's an identifiable, you know, problem, surgical problem, so that needs to be addressed and whether or not they are planning on quitting, it is not my place to hypothesize about that. It is just something that you would figure out after the fact.	mechanical problem, defensive, perception of risk in PWID
	1014	S: Um, not really, I mean, not really, you have to, those are, so…maybe, we should talk about this a little bit earlier, but there is more than one valve that can get infected. The aortic valve clearly is a mechanical problem, and they could die, I mean, she has wide open AR, her ventricle is not tolerating that, and she needs to go. Mitral valve, sometimes is the same. Tricuspid, on the other hand, is a different ball game. The tricuspid valve, I rarely operate on those patients in the acute setting because they can tolerate, particularly younger people, they can tolerate severe tricuspid regurgitation, you know. Hemodynamics rarely, they're hemodynamically stable unless they are in septic shock, which is even more of a cause, of a reason not to operate on them, to get them through the antibiotics, if they embolize it goes to the lung so we can always treat it, even if they develop an abscess, so those patients we can see them in a nonacute setting and will take it from there. But, unfortunately, the left-sided valves, the mitral, the tricuspid (TRANSCRIPTION NOTE: ERROR? SUBJECT LIKELY MEANT AORTIC BASED ON EMPHASIS ON LEFT-SIDED VALVES REQUIRING MORE URGENT INTERVENTIONS.), they usually present, their presentation like this, and your hands, you have to operate on them.	age, mechanical problem, seriousness, knowledge

	1014	Looking back, is there anything different that you would change about your approach? S: Um, not really, I mean, not really, you have to, those are, so…maybe, we should talk about this a little bit earlier, but there is more than one valve that can get infected. The aortic valve clearly is a mechanical problem, and they could die, I mean, she has wide open AR, her ventricle is not tolerating that, and she needs to go. Mitral valve, sometimes is the same. Tricuspid, on the other hand, is a different ball game. The tricuspid valve, I rarely operate on those patients in the acute setting because they can tolerate, particularly younger people, they can tolerate severe tricuspid regurgitation, you know. Hemodynamics rarely, they're hemodynamically stable unless they are in septic shock, which is even more of a cause, of a reason not to operate on them, to get them through the antibiotics, if they embolize it goes to the lung so we can always treat it, even if they develop an abscess, so those patients we can see them in a nonacute setting and will take it from there. But, unfortunately, the left-sided valves, the mitral, the tricuspid (TRANSCRIPTION NOTE: ERROR? SUBJECT LIKELY MEANT AORTIC BASED ON EMPHASIS ON LEFT-SIDED VALVES REQUIRING MORE URGENT INTERVENTIONS.), they usually present, their presentation like this, and your hands, you have to operate on them.	knowledge, seriousness, age, mechanical problem
Medical Model			
	1009	How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	knowledge, SUD treatment, medical model, disassociation (secondary)

	1019	we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right And I don't think that's an ethically sound practice.	SUD treatment, deservingness, empathy, medical model
	1008	Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	liver vs heart, cost, deservingness, medical model, relapse, frustration, paternalism, reinfection
	1008	What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	priorities, medical model, deservingness, commitment to recovery, reinfection

	1008	like how -- what's the success rate of surgery versus -- or effectiveness rate, I guess, of surgery versus antibiotics? Respondent: For prosthetic valve? Interviewer: Yeah. Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time.	futility, deservingness, priorities, medical model, reinfection
	1008	So, what if in like a case where someone who used to use drugs, you know, 10 years ago, got prosthetic valve endocarditis after a dental procedure or something? Respondent: We would treat them with antibiotics. Interviewer: Okay. Respondent: And if that -- if we can't cure them with that. Late endocarditis, about 50 percent of the time, you can treat just with antibiotics. But if they -- if we can't, if they have an abscess, we would operate.	perception of risk in PWID, time between operations, medical model, reinfection
	1011	I think this is a really tough topic. I don't think we have all of the answers. I think this truly needs a multidisciplinary approach to this. Surgery is just one point; most surgeons' offices are not geared towards long term follow up they are not geared toward addiction management they are not geared towards drug rehab programs which is where a lot of support is required either other disciplines or other avenues in society. These patients they have a serious disease problem, the example that you gave about alcoholism, or cancer is more true than not, its not the valve that is the problem, the disease is the addiction.	multidisciplinary group, SUD treatment, medical model
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs. Interviewer: I think it just answered this, it wants me to ask you, do these types of treatment exist alone or do they need to be combined? Interviewee: Oh, absolutely combined.	SUD treatment, multidisciplinary group, support for patient, medical model, follow-up care

	1006	Interviewee: Yeah, we see them. Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	deservingness, second chance, medical model, reinfection, commitment to recovery, data, futility, relapse
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	desired changes, SUD treatment, societal issue, medical model, support for patient, changes over time, follow-up care
	1017	S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	priorities, left vs right side, medical model, risk evaluation
	1017	S: Um, first was to see how well we could stabilize her medically, and it turned out there were things we could do, so stabilize medically, prolong antibiotics, and that actually was very successful to allow us to have a, um, you know, less risk surgery.	risk evaluation, pre-operation care, medical model
	1017	I: Do you think drug rehab is different than drug detox? S: Yes. In my mind, and that's…what my perception is, is that drug detox is more about the medical management of someone that is, um, coming off of, of, of these drugs, dealing	medical model, withdrawal management, support for patient

		with, um, withdrawal and other side effects of, um, removing these, whereas drug rehab, to me, is about long term abstinence and or, you know, addressing some of the other issues that led to their substance abuse.	
	1013	I think that one thing that will be interesting to you in this study, or that would be interesting to be in this, is one area that I have really changed, my thinking has really evolved a lot is in right sided endocarditis. So, 20 years ago if someone had tricuspid valve endocarditis and a great big vegetation and severe tricuspid valve regurgitation and they embolized to their lungs and they had lung abscesses and maybe an empyema I would operate on them. I don't anymore. Because I think that they are better off being treated with antibiotics and even if they need a chest tube for their empyema, treat the infection unless, you can sterilize the vegetation, if you can't sterilize the vegetation then you are kind of stuck, you have to operate. But I am much more reluctant to operate on right sided disease now and I think that, if we can assemble enough information around that I think that could contribute to guidelines – it gets a little bit to your guideline question- that I think would actually be useful. I don't think we will ever have guidelines for these really difficult ethical ones but I can imagine developing an approach where for example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	protocol, multiple surgeries, medical model, data, changes over time, desired changes, left vs right side
	1003	And what do you think about like, drug rehab? Do you think it's different – is it different than drug detox? Do you think it's - Respondent: Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that	stigma , societal issue, timing of SUD tx, multidisciplinary group, medical model, regional differences, follow-up care, changes over time, support for patient

		to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	
	1009	Interviewer: What are some of the first things that you think about when you're asked to evaluate someone who injects drugs for a valve replacement? Surgeon: What is the microorganism, what valve is infected? Is it on the right side of the heart? The left side of the heart? Do they have heart failure? Have they had thromboembolic complications?	protocol, medical model, pre-operation care, risk evaluation
	1009	Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that	accountability, discussing addiction, protocol, futility, medical model, paternalism, patient story

		out and I document that in my notes the first time around. Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I just say if you use any sort of, you know, if you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on him twice and it came out that he doesn't care about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn't have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1009	How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	knowledge, SUD treatment, medical model

	1011	And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little anticoagulation and the valve becomes thrombosed, that's a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure themselves then that has a problem as well. So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	risk evaluation, multiple surgeries, medical model, protocol, deservingness, paternalism, valve preference
	1011	How did you approach that case? Or how have you approached these types of cases? So, like I said the first thing is how do we care for these patients medically. Try to optimize them from there shock perspective and then you have got to figure out you know what operation they need and what is the optimum timing for that operation. So, no different than what would be anybody else with an aortic root abscess without IV drug use.	medical model, priorities
	1011	I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one additional thing that I have to but not let that impact the decision making.	pregnancy, medical model, multidisciplinary group, support for patient, support for surgeons
	1017	I: How did you approach that case? S: Um, first was to see how well we could stabilize her medically, and it turned out there were things we could do, so stabilize	pre-operation care, risk evaluation, medical model

		medically, prolong antibiotics, and that actually was very successful to allow us to have a, um, you know, less risk surgery.	
	1017	I: Do you think drug rehab is different than drug detox? S: Yes. In my mind, and that's…what my perception is, is that drug detox is more about the medical management of someone that is, um, coming off of, of, of these drugs, dealing with, um, withdrawal and other side effects of, um, removing these, whereas drug rehab, to me, is about long term abstinence and or, you know, addressing some of the other issues that led to their substance abuse.	rehab v detox, withdrawal management, medical model
	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	prevalence of endocarditis, risk evaluation, save lives, medical model
	1018	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um, my first reaction is sympathy. It's an addiction, it's not a crime. And um, most of the time, and um, I think your question specifically mentioned substance abuse, injection drugs, ok, yeah, it's sympathy. And looking forward to figuring out if there is a way to help this person.	empathy, medical model, save lives, priorities
	1012	Tell me your thoughts about management decisions in these cases So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up, and now you have someone that already faced a life threatening problem, you realize the	medical model, seriousness, multiple surgeries, risk evaluation, stigma

		depths of their disease when someone would do that to themselves again,	
	1017	I: How did you approach that case? S: Um, first was to see how well we could stabilize her medically, and it turned out there were things we could do, so stabilize medically, prolong antibiotics, and that actually was very successful to allow us to have a, um, you know, less risk surgery.	pre-operation care, risk evaluation, medical model
	1017	I: Do you think drug rehab is different than drug detox? S: Yes. In my mind, and that's…what my perception is, is that drug detox is more about the medical management of someone that is, um, coming off of, of, of these drugs, dealing with, um, withdrawal and other side effects of, um, removing these, whereas drug rehab, to me, is about long term abstinence and or, you know, addressing some of the other issues that led to their substance abuse.	rehab v detox, withdrawal management, medical model
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs.	SUD treatment, support for patient, follow-up care, medical model, multidisciplinary group
	1012	eah. The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	medical model, follow-up care, support for patient

	1012	Have you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	discussing addiction, medical model, save lives, desired changes, empathy
	1012	I believe you already answered this but are there any guidelines or standards of care used at your hospital when assessing these patients? The surgical guidelines are following the treatment of endocarditis and they are not focused on IV drug users they are when do you operate on endocarditis in general and that has to do with the type of organism, how big the lesion is, whether or not there has been a neurologic injury, there's a list of criteria and that is what we follow in general. We have not come down on hard and fast rules about who gets surgery and how many times. I think we have left that to the discretion of the individual surgeons.	protocol, medical model
	1015	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: No. I: Ok. S: Well, I mean, so we have guidelines, surgical societies have guidelines, and we all use that, but outside of that, no.	protocol, medical model, lack of resources
	1014	S: Here we go. I rely on the, again, on people helping us out with this, the critical care, the intensivist, because those, those withdrawal, they can get into trouble, especially if you just rush to an operation for one reason or another. And, um, not rush, but you didn't see that they're gonna go into the throe, and after the operation, they are in bad shape, at a minimum they can rip their breastbone apart, they don't wake up that quickly from the anesthetic, you know, they are still intubated, they're wiggling in bed, and they end up hurting themselves, and the mediastinum, if they tear open their breastbone, they can get	withdrawal management, medical model, multidisciplinary group

		infected and go from one thing to another. It is a medical problem more than anything.	
	1011	I think this is a really tough topic. I don't think we have all of the answers. I think this truly needs a multidisciplinary approach to this. Surgery is just one point; most surgeons' offices are not geared towards long term follow up they are not geared toward addiction management they are not geared towards drug rehab programs which is where a lot of support is required either other disciplines or other avenues in society. These patients they have a serious disease problem, the example that you gave about alcoholism, or cancer is more true than not, its not the valve that is the problem, the disease is the addiction.	multidisciplinary group, SUD treatment, medical model
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So,	PICC line risk, desired changes, medical model, protocol, support for patient, tx compared to broader

		another facility with around the clock supervision.	
	1014	Tell me about your experience with managing withdrawal in this population? S: Here we go. I rely on the, again, on people helping us out with this, the critical care, the intensivist, because those, those withdrawal, they can get into trouble, especially if you just rush to an operation for one reason or another. And, um, not rush, but you didn't see that they're gonna go into the throe, and after the operation, they are in bad shape, at a minimum they can rip their breastbone apart, they don't wake up that quickly from the anesthetic, you know, they are still intubated, they're wiggling in bed, and they end up hurting themselves, and the mediastinum, if they tear open their breastbone, they can get infected and go from one thing to another. It is a medical problem more than anything.	withdrawal management, medical model, multidisciplinary group
	1014	If I can, uh, so tricuspid valve, I will try as much as I can to wait, because even wide open tricuspid regurgitation is tolerated very well with those younger patients, and if they embolize, it goes to the lung, like I said, so it's not, it's nothing, it's bad, but it's not deadly, it's not going to go to the brain. Tricuspid valve, I try to wait as much as…sometimes they are unstable and you have to do something about it, but very unlikely. On the left side, we know that if patients embolize, we put them on antibiotics, there is a dramatic decrease in the risk of further embolization, and if the valve is not severely damaged, and they're not hemodynamically suffering from valve dysfunction, conservative therapy can help to live to fight another day, so I would like to operate on them when they are sterile, at least. So, I'd like to operate on them when they are far out from the acute episode,	left vs right side, risk evaluation, medical model

		they've been on antibiotics as much as we can, and their valve, they're not in an acute setting, they were moved into subacute or the chronic setting, and now their valve got worse and they need it.	
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely.	data, reinfection, medical model, stigma , changes over time

	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility

	1009	And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed.	time constraints, lack of resources, follow-up care, medical model, post-operation care, multidisciplinary group
	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	medical model, risk evaluation, save lives, rationalization (secondary)
multidiscliplinary group			
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group

		experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	multidisciplinary group, futility, desired changes, follow-up care, societal issue
	1006	My other comment is just to reinforce the statements on what a huge difference the addiction medicine service made—when I heard that talk, it was several years ago, probably five. I thought well halleluiah, now there's some hope, 'cause otherwise just either treating a patient for four to six weeks on your service, or sending 'em back into the world to get reinfected.	collaboration with addiction medicine, multidisciplinary group

	1010	I can't say I have sought their support. We have the multidisciplinary meeting where I hear their views, you know listen to what they have to say. I have sought their medical advice and I think they are always available to give medical advice, but that is just one piece of the puzzle that you need to put together to decide what is the best course.	collaboration with addiction medicine, multidisciplinary group
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	pregnancy, multidisciplinary group, risk evaluation, stigma , frustration, deservingness
	1010	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? They seem to uh, they seem to, not everyone, but many of them seem to talk better than I do and have more friends among the consulting services, but they don't end up operating on them I end up operating on them. I think I am a very direct person and that doesn't help me. Uh because I may rub someone the wrong way by telling them what I think, someone else may tell them what they want to hear which may make them feel good, but they don't operate. So uh, I mean I am a very direct person and the only thing that helps is going to bed at night and looking at myself in the mirror and I can say yeah, I am ok. But that doesn't help with your daily interactions.	tx compared to colleagues, disagreements (professional), frustration, multidisciplinary group
	1010	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes Who comes to these meetings and has it been helpful? Surgeons, cardiologists, infectious disease, and then addiction slash psychology and social workers. And yes, it is helpful.	multidisciplinary group, support for surgeons
	1010	he one thing that I have found useful in these meetings is that many people who may have thought that you are like the cold-hearted surgeon because you just wrote a note that no I don't think this person should have an operation hopefully, they will see that you are actually a human being. They're the ones that	multidisciplinary group, frustration, empathy

		talk about being open minded and all this stuff but sometimes I don't think they are. So, if they meet you in person and have a discussion maybe they will see your viewpoint too, if they want to. So, I think they are very good. I think every time you bring people together and discuss something it is always good and people who hide behind an email, keyboard, app, I think that is bad.	
	1010	I would like people in various consulting services to use discourse and open-mindedness not as a talking point but as a good thing, as a virtue, something that has to happen when you take care of patients. I think that sometimes people are rushed to uh, you know they come in with preconceived ideas about who you are and what you are going to do, and I don't think that is fair, I don't think that is right.	support for surgeons, collaboration with addiction medicine, desired changes, disagreements (professional), multidisciplinary group
	1019	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Yes, we have a multidisciplinary endocarditis group. OK. Who comes to these meetings and has been helpful? Uh, so nurses, pharmacists, surgeons, um… cardiologists, um.. social workers. So it is… it truly is multidisciplinary. I think it's helpful	multidisciplinary group
	1019	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Yes, we have a multidisciplinary endocarditis group. OK. Who comes to these meetings and has been helpful? Uh, so nurses, pharmacists, surgeons, um… cardiologists, um.. social workers. So it is… it truly is multidisciplinary. I think it's helpful	multidisciplinary group

	1008	Can you tell me a little bit more about your experience managing pain in this population? You said like a little bit about it, but. Respondent: They just require a lot of medications. And they're in pain a lot. Because, you know, the receptors are down regulated, I think. Again, we get the experts involved to help manage that. Interviewer: There's a pain management service? Respondent: Yep. Yeah. Interviewer: Okay. What tends to work to treat their pain? Like what do they end up on usually? Do you know? Respondent: No. The usual stuff. I mean they give methadone. They give them all sorts of stuff and it's mainly narcotic-based, at least early on	pain management, multidisciplinary group
	1008	Some hospitals have a multi-disciplinary group to evaluate people who inject drugs for valve replacements. Does this hospital have something like that? Respondent: Yeah. Interviewer: Okay. Who comes to the meetings? Do you go? Respondent: Yeah, we do. Psychiatrists, they have the drug rehab people. Usually, we don't meet in a room. We just -- everybody sees the patient. Interviewer: Okay. Has that been helpful? Respondent: I think so. Interviewer: Okay. Is there anyone else you'd like to see on the team? Respondent: Not really. Interviewer: Okay. Respondent: Most of these patients just keep doing what they're doing, anyway. Doesn't matter who talks to them, but.	multidisciplinary group, futility

	1002	Interviewer: And you had a good experience with those other teams? Respondent: Yeah, I think it's okay. Interviewer: Anything they could do better? Respondent: I don't know.	multidisciplinary group, collaboration with addiction medicine, collaboration (secondary)
	1019	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Yes, we have a multidisciplinary endocarditis group. OK. Who comes to these meetings and has been helpful? Uh, so nurses, pharmacists, surgeons, um… cardiologists, um.. social workers. So it is… it truly is multidisciplinary. I think it's helpful	multidisciplinary group
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams	multidisciplinary group, pain management, lack of knowledge, support for surgeons, post-operation care
	1018	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes. If so who comes to the meetings and has it been helpful? Yes, it's been	multidisciplinary group
	1011	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do	multidisciplinary group

		this? Yes	
	1011	I think this is a really tough topic. I don't think we have all of the answers. I think this truly needs a multidisciplinary approach to this. Surgery is just one point; most surgeons' offices are not geared towards long term follow up they are not geared toward addiction management they are not geared towards drug rehab programs which is where a lot of support is required either other disciplines or other avenues in society. These patients they have a serious disease problem, the example that you gave about alcoholism, or cancer is more true than not, its not the valve that is the problem, the disease is the addiction.	multidisciplinary group, SUD treatment, medical model
	1016	I: Do you think these types of treatment exist alone or they need to be combined in order to be successful? S: I think that, I would imagine that the most success would be achieved by combining therapies, much like in the way of general psychiatry with depression treatment, medication and, um, psychotherapy.	multidisciplinary group
	1016	I: Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	support for surgeons, pain management, follow-up care, post-operation care, multidisciplinary group
	1016	I: Do you think these types of treatment exist alone or they need to be combined in order to be successful? S: I think that, I would imagine that the most success would be achieved by combining therapies, much like in the way of general	multidisciplinary group

		psychiatry with depression treatment, medication and, um, psychotherapy.	
	1016	I: Yeah, and that was helpful for the patient, that was able to control their pain? Did they have to have, like, any additional medicines? S: I don't know, I can't remember off the top of my head, if he was supplemented with additional medications, um, or if it maybe reduced the amount of additional medications that we needed. Um, in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners pre	pain management, lack of knowledge, support for patient, multidisciplinary group
	1016	I: Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Um, that's a really hard question. Um, I think that when you see patients like that, you, you definitely have to have a multidisciplinary approach, and, um, you know, surgery depending on the trimester, um, can be, um, um, contraindicated, um, but, you know, IV drugs in pregnancy is, is never a good thing. Um, and so, I think there has to be really a team, a team approach on that, about what to do with the pregnancy, um, is, should the pregnancy be terminated, and should she have an open-heart surgery, and kind of what are the…it's, it's a very complex issue.	multidisciplinary group, pregnancy, risk evaluation
	1016	I: Do you and your team every get into conflict about a certain patient case or anything? S: Yeah, we have, we have discussions about it. Um, for sure. Um, and I think having, we have that multidisciplinary meeting, or we have a valve meeting on BLANK morning, and it's been really great in cases, um, where we've gotten both addiction psychiatry and infectious disease there to have a group discussion, on some of those complex cases where you're not really sure what to do.	multidisciplinary group, disagreements (professional)

	1016	S: Um, it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their recovery, and, and help when we have a team approach.	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals
	1006	Interviewer: Is there someone you can call in the hospital with addiction medicine experience and expertise? Interviewee: We have a whole service. Actually, a few years ago I went to—it was a small group, kind of grand rounds type thing, I can't remember who sponsored it. It may have been infectious disease where the person from addiction medicine spoke, it was quite interesting.	collaboration with addiction medicine, multidisciplinary group, administration, support for surgeons
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs. Interviewer: I think it just answered this, it wants me to ask you, do these types of treatment exist alone or do they need to be combined? Interviewee: Oh, absolutely combined.	SUD treatment, multidisciplinary group, support for patient, medical model, follow-up care
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group

		Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it	tx compared to colleagues, stigma , perception of risk in PWID, disagreements (professional), collaboration with addiction medicine, deservingness, multidisciplinary group
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving	multidisciplinary group, support for patient, societal issue, lack of resources, futility, desired changes, follow-up care
	1002	terviewer: Do you ever consult other services for pain management? Respondent: Yes, pain control. Interviewer: And you had a good experience with those other teams? Respondent: Yeah, I think it's okay.	multidisciplinary group, pain management

	1002	Should you give Katy a PICC line and send her home? Should you give her a PICC line and have her stay in the hospital? Or should you give her a PICC line and have her go to a nursing facility? Respondent: Oh, so she's getting a PICC line for sure? Interviewer: Yes, she's getting a PICC line. Respondent: The nursing. Interviewer: The nursing? Okay. Do you think that's the safest option? Respondent: I think so. Interviewer: Do you consider other things, like if she has housing or transportation? Respondent: I don't know.	PICC line risk, multidisciplinary group
	1002	erviewer: Some hospitals can have a multidisciplinary group to evaluate these specific patients and cases. Do you know if [Tess] has that? Respondent: I don't know. Interviewer: Do you think it would be helpful to have? Respondent: I think so. Interviewer: Who do you imagine would be there? Respondent: [The patient], cardiology, and then some other pain control. What else? Like, pharmacists and then coordinators who can reach out to the family. I think that's about it, yeah.	multidisciplinary group, training, follow-up care, lack of knowledge
	1007	Okay. So some hospitals convene a multidisciplinary group. To evaluates people who inject drugs for valve replacements. Does your institution do this as well? Speaker 2: Yes. Speaker 1: Okay. So who comes to these meetings and has it been helpful? Speaker 2: Yes. Everybody. Um, multidisciplinary surgery, cardiology, and with practice ID, neurology, addiction medicine.	multidisciplinary group

	1017	: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for patient, frustration, administration, follow-up care, lack of resources, multidisciplinary group
	1017	How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	support for surgeons, desired changes, multidisciplinary group, follow-up care, timing of SUD tx, support for patient
	1017	How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	tx compared to broader, multidisciplinary group, support for surgeons, administration
	1017	Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't	frustration, desired changes, multidisciplinary group, support for surgeons, accountability, disagreements (professional)

		operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	
	1013	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes Has it been helpful? Yes	multidisciplinary group
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	support for patient, post-operation care, SUD treatment, save lives, follow-up care, discussing addiction, multidisciplinary group
	1003	Respondent: Well, I would like to see his efforts supported. Right now, he's the only one we have. I think – this is going to - I want the hospital to support him. In terms of me, my efforts, well I've got no major issues there. I mean, if I book someone up for surgery, then I don't [meet] any resistance from the hospital. They, you know, they don't – they trust our judgement about who needs an operation, and then our job to do a – execute, and do a good operation. So not particularly. I don't have any outstanding conflicts with the hospital in terms of support for the program.	collaboration with addiction medicine, support for surgeons, administration, discussing addiction, multidisciplinary group

	1003	And what do you think about like, drug rehab? Do you think it's different – is it different than drug detox? Do you think it's - Respondent: Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	stigma , societal issue, timing of SUD tx, multidisciplinary group, medical model, regional differences, follow-up care, changes over time, support for patient
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	follow-up care, multidisciplinary group, changes over time, second chance, accountability, screening for ID, commitment to recovery, relapse
	1003	we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after	multidisciplinary group, collaboration with addiction medicine, pain management, post-operation care, timing of SUD tx

		surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	
	1003	So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates.	support for patient, support for surgeons, tx compared to colleagues, multidisciplinary group, risk evaluation, time constraints
	1003	Interviewer: Some hospitals convene a multi-disciplinary group to evaluate people who inject drugs, for valve replacement. Does this institution do that? Respondent: We've had a couple meetings. We should have more regular meetings. Dr. Wurcel actually had two excellent meetings that she directed. Yes, I think we should have like, at least monthly meetings with them more frequently. To discuss this problem. Yeah, multi-disciplinary approach. [What was] - what we've had. We had addiction medicine there, infectious disease, social work, surgeon - surgeons. Yeah.	multidisciplinary group
	1009	Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	multidisciplinary group, collaboration with addiction medicine, protocol, risk evaluation

	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	multidisciplinary group, collaboration with addiction medicine, support for surgeons, accountability, frustration, futility, lack of resources, post-operation care

	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to	support for surgeons, administration, tx compared to broader, accountability, desired changes, follow-up care, frustration, lack of resources, post-operation care, multidisciplinary group

		do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	

	1009	Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	tx compared to colleagues, deservingness, collaboration with addiction medicine, multidisciplinary group, lack of resources, frustration, accountability, desired changes, follow-up care

		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1009	Interviewer: And some hospitals convene a multidisciplinary group to evaluate people who inject drugs before their valve replacement. Does this hospital do that? Surgeon: No. Interviewer: Is that something you'd like to see? Surgeon: It probably wouldn't matter. Who's in the multidisciplinary group, right? Interviewer: Who do you think should be? Surgeon: I mean, really, when I have patients I speak with the Infectious Disease doctor and the cardiologist. The ultimate decision on whether the patient gets an operation is based on the surgeon, regardless of what the Infectious Disease doctor or cardiologist say. I think when these groups get together I think they spend an hour talking about nothing. You can get to the heart of the matter very quickly and so it would probably be a waste of – you know, there's not enough hours in a day to sit through an hour-long meeting. I think you can	multidisciplinary group, time constraints, futility

		really get to the heart of the matter in terms of what needs to be done in just a few minutes.	
	1011	Do you feel supported in your care of people who inject drugs? Yes, so I, you know I think this is a great issue that we have started that we have this multidisciplinary team now that we meet, we schedule, we meet scheduled once a month but we can also call for ad hoc meetings if there is a patient that was extremely challenging and we needed help managing that. Its composed of the addiction treatment team, the ID team, cardiothoracic surgeons, their primary care providers or whomever is taking care of the floor, and really when we started the process it was interesting to watch how the team has evolved, because I remember when we started the process a couple years ago, everyone was coming at it from different perspectives and everyone had the patients best interest in heart but I don't think they were seeing what the other teams were seeing. You know the addiction team most of the time was saying you need to operate on these patients because that is what needs to happen and the surgeons were reluctant because of obvious reasons but what I find very interesting is that more often than not recently everyone is on the same page, or trying to get on the same page. There is much less arguments or disagreements as to what the best plan of care is for these patients might be.	multidisciplinary group, support for surgeons, empathy, changes over time, collaboration with addiction medicine

	1011	How knowledgeable do you feel about the available treatments for people who use drugs? Um, I've learned some going to our multidisciplinary team meetings. Um, I don't consider myself to be an expert or even a specialist in that, but I am glad that I know people, I know who to call. Would you want to receive more training on this? In my current situation I feel very well supported by the teams that we have put together. I think that what that allows me to do is to focus on what I need to do, and I can completely rely on them to, let them do what they do best.	support for surgeons, knowledge, time constraints, multidisciplinary group, training
	1011	Tell me about your experience with managing pain in this population. It is, it does become tricky because you want to give them the pain meds they need to get over their operative pain but also don't want to, uh, it sometimes becomes hard to decide if they are having real pain or if they are using that as a pretext or pretense to get more prescribed pain meds. So, most of the time we will get the acute pain team and the [addiction team] together so that they can help us with managing pain in these patients. Our teams prescribe them whatever routine pain meds they prescribe, sometimes they need different dosages of pain meds based on what tolerance they have built but we are reliant on our inpatient pain specialists to help through that.	pain management, multidisciplinary group, perception of risk in PWID, liability of medical professionals
	1011	ell me about your experience with managing withdrawal in this population. It's not a problem that we frequently have to face um, because these patients come in, they are generally managed by services other than ours in the time they are in the face of acute withdrawal. We rely on our teams to help us guide through that when they come in.	multidisciplinary group, withdrawal management
	1011	I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one	pregnancy, medical model, multidisciplinary group, support for patient, support for surgeons

		additional thing that I have to but not let that impact the decision making.	
	1011	I think this truly needs a multidisciplinary approach to this. Surgery is just one point; most surgeons' offices are not geared towards long term follow up they are not geared toward addiction management they are not geared towards drug rehab programs which is where a lot of support is required either other disciplines or other avenues in society. These patients they have a serious disease problem, the example that you gave about alcoholism, or cancer is more true than not, its not the valve that is the problem, the disease is the addiction.	multidisciplinary group, discussing addiction, follow-up care
	1011	I believe you already answered this but are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? So, we have the team that we try to convene, so what we decide is that we will bring all these patients to the team. It is not always a decision-making tool because sometimes the decision is clear as to what needs to happen, but that has become a great resource. Even if it has already been decided, we still discuss those patients so that is guideline number one we are going to discuss all of these patients in a multidisciplinary fashion and beyond that I think all of us would generally follow what the endocarditis guidelines are.	protocol, multidisciplinary group
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we	support for patient, timing of SUD tx, multidisciplinary group, follow-up care

		operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	
	1017	I: How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	tx compared to broader, multidisciplinary group, support for surgeons, administration
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group
	1017	I: Some hospitals convene a multidisciplinary group for evaluating people who inject drugs for valve replacements. Does your institution do this? S: We have started, yes. I: Do you think it is helpful? S: Definitely.	multidisciplinary group

	1013	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes Has it been helpful? Yes	multidisciplinary group
	1015	I: Ok. Tell me about your experience with managing pain in this population. S: Um…it seems to be harder to control than most. I: Do you consult another service for pain management? S: Yes, most of the time. Not always, but most of the time.	pain management, multidisciplinary group
	1015	I: Some hospitals convene a multidisciplinary group for evaluating people who inject drugs for valve replacements. Does your institution do this? S: I don't think we do, although it might be helpful. I: And, let's see…Who needs to come to these meetings to make it worthwhile? S: Infectious disease, surgeons, cardiologists, uh, internal medicine physicians, um, psychiatrists, specifically those that specialize in addiction psychiatry. And then all the non-physician staff, so therapists, rehab therapists that are going to be treating these patients, like physical and occupational rehab, and then addiction specialists who are not doctors, psychologists, I think it, and radiologists, obviously.	multidisciplinary group
	1015	people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	liability of medical professionals, disagreements (professional), accountability, multidisciplinary group, frustration
	1007	Speaker 2: Um, again, we work with addiction medicine and have them consult before the surgery, but we would acknowledge them same as anyone else with additional methadone or whatever.	collaboration with addiction medicine, multidisciplinary group, SUD treatment

	1007	Speaker 1: Okay. So some hospitals convene a multidisciplinary group. To evaluates people who inject drugs for valve replacements. Does your institution do this as well? Speaker 2: Yes. Speaker 1: Okay. So who comes to these meetings and has it been helpful? Speaker 2: Yes. Everybody. Um, multidisciplinary surgery, cardiology, and with practice ID, neurology, addiction medicine.	multidisciplinary group, collaboration with addiction medicine
	1001	Interviewer: Is there someone you can call in the hospital with addiction medicine expertise? Respondent: Yeah, there is I think a service now. I think this is recently established. I haven't had much experience working with this group of professionals here yet, but I'm happy to work with them if there is such opportunity. This group of patients represents a challenging patient population, I think not just from the medical standpoint. There is also a lot of ethic issues and social issues involved. So I feel there should be a team taking care of these patients.	collaboration with addiction medicine, multidisciplinary group, societal issue, follow-up care
	1001	Interviewer: Okay, and do you currently feel supported when you're caring for patients in this population? Respondent: Yeah, and I think most of my colleagues share the same perspective. You know, there is really no conflict among us. We have our own standards, and if we need help – that's usually the case from the effects of the disease – you know, ethic committees. So they're around. They are available.	support for surgeons, tx compared to colleagues, multidisciplinary group
	1001	Interviewer: All right, and what do you think about the term 'drug rehab?' Respondent: I don't know the detail. I heard about the name. To me it is very difficult. I think theoretically there will be successful stories, but I see it clinically it happened a lot. People tended to relapse back into the drug use [in getting the effects again and again]. I think it's hard for people, and I think they all deserve to be placed in drug rehab, if possible, to have kind of their program that we help them get over the drug addiction, if possible. I personally think it should be mandatory for them to join this program, but I don't think it's going to be the case – but I would recommend that every patient who has been on drugs to be evaluated by the specialist. If they request those patients to go to rehab, I would support it.	SUD treatment, deservingness, relapse, follow-up care, multidisciplinary group

	1001	Respondent: We have [our OTNs] – you know, the [protocol] – but if we believe if somebody postoperative is in pain or (their) narcotics use is out of norm, then we would consult a specialist. But first we want to – you know, a medical reason – if that can be explained. If there's really no medical reason for excessive or intensive pain, then we would investigate.	pain management, protocol, post-operation care, multidisciplinary group
	1001	Interviewer: Do you find yourself consulting other services for pain management issues? Respondent: I almost routinely consult, yeah. So the two services – this is why I would hope there would be a program here. That way there would be a multidisciplinary care on each single patient who has such a history, but currently we have to call the individual [consult service] – for example, the drug addiction service and psychiatry. I cannot [tell you] how much they are able to help if they are willing, just because this group of patients always is challenging to everybody. So I think overall we are doing the best we can.	support for surgeons, pain management, multidisciplinary group, stigma , collaboration with addiction medicine
	1001	Interviewer: Can you tell me about your experience managing withdrawal in this population? Respondent: You know, I've seen that before. I've seen all kinds of withdrawal, not just from narcotics – also alcohol, you know? But when it occurs, or clinically we suspect withdrawal, then we bring in the specialist. Certainly those patients will be carefully monitored and medicated.	withdrawal management, support for surgeons, multidisciplinary group, collaboration with addiction medicine
	1001	I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	multiple surgeries, patient consent, deservingness, relapse, multidisciplinary group, reinfection, follow-up care
	1001	Interviewer: Do you consider other things if you're choosing what to do with the PICC line, like housing, insurance, job status, or childcare? Do any of those things come to mind? Respondent: To be honest, I really don't know the [outer perspective of our practice]. So there will be the case management and social workers who help with those perspectives. I make decisions based on a patient's own	PICC line risk, liability of medical professionals, follow-up care, multidisciplinary group, insurance

		medical need. There will be other care that we have to consider, but gladly we have specialists to help us out.	
	1001	Interviewer: This is the final question. Some hospitals have a multidisciplinary group to evaluate people who inject drugs. Do you know if that's done here? Any times that you're ever meeting with a multidisciplinary group? Respondent: I'm not sure if we have an official team. I think we've been talking about it for some time. Since I'm not taking care of a lot of these patients [off-mic], I may take care of an endocarditis patient once or twice a year. It's just not my own personal interest. So I'm not aware if we have a formal, interdisciplinary team, but certainly the process is something that requires a team approach. And that's being done, but I just don't know if we officially have such a team. Interviewer: Okay, but you think it would be helpful? Respondent: Yeah, absolutely. I think those patients should be taken care of by surgeons, medical specialists, psychiatrists, pharmacists – from every perspective to develop a plan.	support for surgeons, multidisciplinary group, follow-up care
	1004	I: Some hospitals convene a multi-disciplinary group to evaluate people who inject drugs, for valve replacement. Does this institution do that? R: I'm not sure, well, we had that meeting with Dr. Wurcel but that was more for research. When we're working with a case we have infectious disease doctors, and cardiology, and Dustin for addiction psychiatry.	multidisciplinary group, collaboration with addiction medicine
	1005	Yes, we recommend addiction medicine consultants on every patient.	collaboration with addiction medicine, multidisciplinary group
	1005	Interviewer: Sounds familiar. Okay, so we were talking about the role of medications and then I'm gonna bridge this into psychotherapy and the role of psychotherapy. Do these treatments exist alone or do they need to be combined? Interviewee: I think they need to be combined.	multidisciplinary group
	1005	Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl	pain management, multidisciplinary group, collaboration with addiction medicine

		just in the ICU, and then we try to bridge that to the lowest dose oral narcotic that we can on the floor. My preference is to try to minimize them to just tramadol and/or Tylenol. Many times the pain service will put folks on PCAs and continue their IV medication a lot longer than we like to do that.	
	1005	Interviewer: Okay. I think you're already answering this one as well, some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Interviewee: Not that I know of. Interviewer: Do you think it would be helpful? Interviewee: Yes. Interviewer: You already answered that. Who needs to be involved and come to these meetings to make it worthwhile? Interviewee: Well it would be a difficult time to try to get all of us together. Perhaps, a once every two weeks or once a month meeting on the difficult cases would be nice. I think that it needs to be cardiac surgery, cardiology, infectious disease, addiction medicine, pain team, social work and discharge planner.	multidisciplinary group, desired changes, collaboration with addiction medicine
	1008	Interviewer: Totally. Okay. Is there someone in [Hospital] that you could call with addiction medicine expertise? Respondent: Yeah, there is. Interviewer: Okay. Respondent: There's a team that works on these -- with these patients. And they admit they're not all that successful. The vast majority just keep using drugs. Maybe not initially but they say like 89 percent ultimately start using IV drugs again -- which is not a good statistic. And this is the people that you would think would be optimistic about, you know, the benefit that they're getting from their counseling and treatment. And, geez, they say it's very high but they're probably right.	collaboration with addiction medicine, multidisciplinary group, futility, frustration
	1008	Interviewer: Okay. Cool. And how knowledgeable do you feel about the available treatments for people who use drugs? You know, like available treatment for opioid use disorder or something? Respondent: I refer to the -- there's the -- that	multidisciplinary group

		team-- that does this. I refer everybody to them.	
	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues
	1008	Interviewer: Some hospitals have a multi-disciplinary group to evaluate people who inject drugs for valve replacements. Does this hospital have something like that? Respondent: Yeah. Interviewer: Okay. Who comes to the meetings? Do you go? Respondent: Yeah, we do. Psychiatrists, they have the drug rehab people. Usually, we don't meet in a room. We just -- everybody sees the patient. Interviewer: Okay. Has that been helpful? Respondent: I think so. Interviewer: Okay. Is there anyone else you'd like to see on the team? Respondent: Not really. Interviewer: Okay.	multidisciplinary group, SUD treatment

		Respondent: Most of these patients just keep doing what they're doing, anyway. Doesn't matter who talks to them, but.	
	1018	atie, in our vignette, how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	paternalism, multidisciplinary group, post-operation care, save lives, follow-up care, timing of SUD tx
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams Tell me about your experience with managing withdrawal in this population. It's the same, you call the pain team to ask them for their help.	pain management, lack of knowledge, support for surgeons, post-operation care, multidisciplinary group
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use?	deservingness, stigma , paternalism, frustration, futility, multidisciplinary group

		It does if the patient is defiant and clearly is not interested in helping them self.	
	1012	ell me about your experience with managing withdrawal in this population. So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them hemodynamically unstable and it's just not safe.	withdrawal management, collaboration with addiction medicine, multidisciplinary group
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams	multidisciplinary group, pain management, lack of knowledge, support for surgeons, post-operation care
	1018	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes. If so who comes to the meetings and has it been helpful? Yes, it's been	multidisciplinary group
	1005	Yes, we recommend addiction medicine consultants on every patient.	collaboration with addiction medicine, multidisciplinary group
	1005	Interviewer: Sounds familiar. Okay, so we were talking about the role of medications and then I'm gonna bridge this into psychotherapy and the role of psychotherapy. Do these treatments exist alone or do they need to be combined? Interviewee: I think they need to be combined.	multidisciplinary group

	1005	Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl just in the ICU, and then we try to bridge that to the lowest dose oral narcotic that we can on the floor. My preference is to try to minimize them to just tramadol and/or Tylenol. Many times the pain service will put folks on PCAs and continue their IV medication a lot longer than we like to do that.	pain management, multidisciplinary group, collaboration with addiction medicine
	1005	Interviewer: Okay. I think you're already answering this one as well, some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Interviewee: Not that I know of. Interviewer: Do you think it would be helpful? Interviewee: Yes. Interviewer: You already answered that. Who needs to be involved and come to these meetings to make it worthwhile? Interviewee: Well it would be a difficult time to try to get all of us together. Perhaps, a once every two weeks or once a month meeting on the difficult cases would be nice. I think that it needs to be cardiac surgery, cardiology, infectious disease, addiction medicine, pain team, social work and discharge planner.	multidisciplinary group, desired changes, collaboration with addiction medicine
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery,	support for patient, timing of SUD tx, multidisciplinary group, follow-up care

		they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	
	1017	I: How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	tx compared to broader, multidisciplinary group, support for surgeons, administration
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group
	1017	I: Some hospitals convene a multidisciplinary group for evaluating people who inject drugs for valve replacements. Does your institution do this? S: We have started, yes. I: Do you think it is helpful? S: Definitely.	multidisciplinary group

	1004	yes, he's added psychiatry and psychology support to patient care, the hospital has really only treated the acute physical needs before him. He's great, especially if the patient doesn't have a lot of social support.	collaboration with addiction medicine, multidisciplinary group, support for surgeons, support for patient
	1004	What about after the surgery? Would a PICC line and sending a patient home be fine? Yes, that's the best way to get antibiotics. There's no point in keeping them in the hospital, we can't afford that. Though if they wanted to go to a nursing facility afterwards, I'd have no objection to that. The best option for the patient would be whatever Dustin recommends, in terms of relapse risk.	PICC line risk, relapse, multidisciplinary group, collaboration with addiction medicine
	1004	I'm not sure, well, we had that meeting with Dr. Wurcel but that was more for research. When we're working with a case we have infectious disease doctors, and cardiology, and Dustin for addiction psychiatry.	multidisciplinary group, collaboration with addiction medicine
	1016	Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	support for surgeons, post-operation care, follow-up care, pain management, multidisciplinary group
	1016	in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow	pain management, multidisciplinary group, support for patient, lack of knowledge

		their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners prescribe.	
	1016	uld your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Um, that's a really hard question. Um, I think that when you see patients like that, you, you definitely have to have a multidisciplinary approach, and, um, you know, surgery depending on the trimester, um, can be, um, um, contraindicated, um, but, you know, IV drugs in pregnancy is, is never a good thing. Um, and so, I think there has to be really a team, a team approach on that, about what to do with the pregnancy, um, is, should the pregnancy be terminated, and should she have an open-heart surgery, and kind of what are the…it's, it's a very complex issue.	pregnancy, multidisciplinary group, risk evaluation
	1016	Do you and your team every get into conflict about a certain patient case or anything? S: Yeah, we have, we have discussions about it. Um, for sure. Um, and I think having, we have that multidisciplinary meeting, or we have a valve meeting on BLANK morning, and it's been really great in cases, um, where we've gotten both addiction psychiatry and infectious disease there to have a group discussion, on some of those complex cases where you're not really sure what to do.	disagreements (professional), multidisciplinary group
	1016	it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their recovery, and, and help when we have a team approach.	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals

	1006	Interviewer: Is there someone you can call in the hospital with addiction medicine experience and expertise? Interviewee: We have a whole service. Actually, a few years ago I went to—it was a small group, kind of grand rounds type thing, I can't remember who sponsored it. It may have been infectious disease where the person from addiction medicine spoke, it was quite interesting.	administration, collaboration with addiction medicine, multidisciplinary group, support for surgeons
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs.	SUD treatment, support for patient, follow-up care, medical model, multidisciplinary group
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID

	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	multidisciplinary group, futility, desired changes, follow-up care, societal issue
	1006	My other comment is just to reinforce the statements on what a huge difference the addiction medicine service made—when I heard that talk, it was several years ago, probably five. I thought well halleluiah, now there's some hope, 'cause otherwise just either treating a patient for four to six weeks on your service, or sending 'em back into the world to get reinfected.	collaboration with addiction medicine, multidisciplinary group
	1012	So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them hemodynamically unstable and it's just not safe.	withdrawal management, pain management, collaboration with addiction medicine, multidisciplinary group, disagreements (professional), paternalism, defensive
	1012	Some hospitals have a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes, yes we do. And again, I haven't, its, I haven't been a huge part of that. There is a group that meets, it used to be weekly, it may have fallen through the cracks so others can elaborate on it, but it includes ID and it's a multidisciplinary approach to these patients.	multidisciplinary group
	1015	I: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where	support for surgeons, multidisciplinary group, administration, frustration, follow-up care

		here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	
	1015	I: Ok. Tell me about your experience with managing pain in this population. S: Um…it seems to be harder to control than most. I: Do you consult another service for pain management? S: Yes, most of the time. Not always, but most of the time.	pain management, multidisciplinary group
	1015	I: Some hospitals convene a multidisciplinary group for evaluating people who inject drugs for valve replacements. Does your institution do this? S: I don't think we do, although it might be helpful. I: And, let's see…Who needs to come to these meetings to make it worthwhile? S: Infectious disease, surgeons, cardiologists, uh, internal medicine physicians, um, psychiatrists, specifically those that specialize in addiction psychiatry. And then all the non-physician staff, so therapists, rehab therapists that are going to be treating these patients, like physical and occupational rehab, and then addiction specialists who are not doctors, psychologists, I think it, and radiologists, obviously.	multidisciplinary group
	1015	To close, is there anything I haven't asked you about that you would like to say? S: Uh…I think that, um, people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	liability of medical professionals, disagreements (professional), multidisciplinary group, frustration, accountability

	1010	Do you feel supported in your care of people who inject drugs? Supported by whom? Potentially that service? I can't say I have sought their support. We have the multidisciplinary meeting where I hear their views, you know listen to what they have to say. I have sought their medical advice and I think they are always available to give medical advice, but that is just one piece of the puzzle that you need to put together to decide what is the best course. Do you think the hospital could do more to support you in the care of these patients? No, I feel supported by the hospital.	support for surgeons, collaboration with addiction medicine, multidisciplinary group, administration
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	pregnancy, stigma , frustration, deservingness, multidisciplinary group
	1010	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? They seem to uh, they seem to, not everyone, but many of them seem to talk better than I do and have more friends among the consulting services, but they don't end up operating on them I end up operating on them. I think I am a very direct person and that doesn't help me. Uh because I may rub someone the wrong way by telling them what I think, someone else may tell them what they want to hear which may make them feel good, but they don't operate. So uh, I mean I am a very direct person and the only thing that helps is going to bed at night and looking at myself in the mirror and I can say yeah, I am ok. But that doesn't help with your daily interactions.	tx compared to colleagues, multidisciplinary group

	1010	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes Who comes to these meetings and has it been helpful? Surgeons, cardiologists, infectious disease, and then addiction slash psychology and social workers. And yes, it is helpful. Anything specifically that has been worthwhile? The one thing that I have found useful in these meetings is that many people who may have thought that you are like the cold-hearted surgeon because you just wrote a note that no I don't think this person should have an operation hopefully, they will see that you are actually a human being. They're the ones that talk about being open minded and all this stuff but sometimes I don't think they are. So, if they meet you in person and have a discussion maybe they will see your viewpoint too, if they want to. So, I think they are very good. I think every time you bring people together and discuss something it is always good and people who hide behind an email, keyboard, app, I think that is bad.	multidisciplinary group, support for surgeons
	1010	I would like people in various consulting services to use discourse and open-mindedness not as a talking point but as a good thing, as a virtue, something that has to happen when you take care of patients. I think that sometimes people are rushed to uh, you know they come in with preconceived ideas about who you are and what you are going to do, and I don't think that is fair, I don't think that is right.	multidisciplinary group
	1014	S: It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	multidisciplinary group, post-operation care, follow-up care, changes over time

	1014	I: What do you think the role of medications play in the treatment for…? S: I don't want to comment. I: How about psychotherapy? S: Important. I: Do you think these types of treatment exist alone or do they need to be combined? S: Combined.	multidisciplinary group, SUD treatment
	1014	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes and no. I mean, the blatant refusal is, it gives me pause. If a patient is saying, "Nope, I won't stop," and if they are in a mental, you know, state, where they're absolutely, you know, saying, "You operate on me and I know I'm going to use again," you know, those are far and few in between. Those are rare, but sometimes you see them. And, and, you, kind of, wonder, what am I doing here? This is where, you know, the support, the hospital support, with psychiatrists and all the disciplines, it becomes a multidisciplinary approach, and I've tried to involve other, some of my partners, like, you know, this guy is a recurrent offender, and he intends on, on, so what are we doing? So, that's, that's the epitome of futility in my eyes.	commitment to recovery, multidisciplinary group, stigma
	1014	S: Here we go. I rely on the, again, on people helping us out with this, the critical care, the intensivist, because those, those withdrawal, they can get into trouble, especially if you just rush to an operation for one reason or another. And, um, not rush, but you didn't see that they're gonna go into the throe, and after the operation, they are in bad shape, at a minimum they can rip their breastbone apart, they don't wake up that quickly from the anesthetic, you know, they are still intubated, they're wiggling in bed, and they end up hurting themselves, and the mediastinum, if they tear open their breastbone, they can get infected and go from one thing to another. It is a medical problem more than anything.	withdrawal management, medical model, multidisciplinary group
	1014	I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data.	multidisciplinary group, data, discussing addiction
	1014	I: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? S: On and off. I: Do you think it's helpful? S: Absolutely.	multidisciplinary group

	1014	I: Just a couple more questions. Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: So, no, we don't have guidelines. We tried to write them, there are no guidelines. There are some discrepancies, every now and then, between us, the infectious disease people, the, the, the psychiatrists, and the ethics department here, who, they are a little bit distant from what we, you know, we are not on the same page. Let, let me put it in a different way, we are, uh, we, we don't look at the problem the same way, and we need to sit down more and have a more elaborate discussions. Because writing notes on a patient's chart and quoting esoteric papers just doesn't help anybody.	protocol, multidisciplinary group
	1014	S: No, I'm glad somebody…I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that. We don't, we don't.	societal issue, insurance, follow-up care, regional differences, multidisciplinary group

	1011	Do you feel supported in your care of people who inject drugs? Yes, so I, you know I think this is a great issue that we have started that we have this multidisciplinary team now that we meet, we schedule, we meet scheduled once a month but we can also call for ad hoc meetings if there is a patient that was extremely challenging and we needed help managing that. Its composed of the addiction treatment team, the ID team, cardiothoracic surgeons, their primary care providers or whomever is taking care of the floor, and really when we started the process it was interesting to watch how the team has evolved, because I remember when we started the process a couple years ago, everyone was coming at it from different perspectives and everyone had the patients best interest in heart but I don't think they were seeing what the other teams were seeing. You know the addiction team most of the time was saying you need to operate on these patients because that is what needs to happen and the surgeons were reluctant because of obvious reasons but what I find very interesting is that more often than not recently everyone is on the same page, or trying to get on the same page. There is much less arguments or disagreements as to what the best plan of care is for these patients might be. How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	support for surgeons, multidisciplinary group, collaboration with addiction medicine
	1011	Would you want to receive more training on this? In my current situation I feel very well	training, multidisciplinary group

		supported by the teams that we have put together. I think that what that allows me to do is to focus on what I need to do, and I can completely rely on them to, let them do what they do best.	
	1011	Tell me about your experience with managing pain in this population. It is, it does become tricky because you want to give them the pain meds they need to get over their operative pain but also don't want to, uh, it sometimes becomes hard to decide if they are having real pain or if they are using that as a pretext or pretense to get more prescribed pain meds. So, most of the time we will get the acute pain team and the [addiction team] together so that they can help us with managing pain in these patients. Our teams prescribe them whatever routine pain meds they prescribe, sometimes they need different dosages of pain meds based on what tolerance they have built but we are reliant on our inpatient pain specialists to help through that. What works or doesn't work to treat their pain? I don't know the specifics. I think it would probably be different for every patient.	pain management, multidisciplinary group
	1011	Tell me about your experience with managing withdrawal in this population. It's not a problem that we frequently have to face um, because these patients come in, they are generally managed by services other than ours in the time they are in the face of acute withdrawal. We rely on our teams to help us guide through that when they come in.	withdrawal management, multidisciplinary group
	1011	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, I don't think so. I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one additional thing that I have to but not let that impact the decision making.	pregnancy, deservingness, multidisciplinary group

	1011	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes	multidisciplinary group
	1011	I think this is a really tough topic. I don't think we have all of the answers. I think this truly needs a multidisciplinary approach to this. Surgery is just one point; most surgeons' offices are not geared towards long term follow up they are not geared toward addiction management they are not geared towards drug rehab programs which is where a lot of support is required either other disciplines or other avenues in society. These patients they have a serious disease problem, the example that you gave about alcoholism, or cancer is more true than not, its not the valve that is the problem, the disease is the addiction.	multidisciplinary group, SUD treatment, medical model
	1002	Interviewer: And you had a good experience with those other teams? Respondent: Yeah, I think it's okay. Interviewer: Anything they could do better? Respondent: I don't know.	multidisciplinary group, collaboration with addiction medicine
	1002	Interviewer: All right, so going back to Katy. Now you're considering the medical management of the prosthetic valve endocarditis. What do you think about these three options? Should you give Katy a PICC line and send her home? Should you give her a PICC line and have her stay in the hospital? Or should you give her a PICC line and have her go to a nursing facility? Respondent: Oh, so she's getting a PICC line for sure? Interviewer: Yes, she's getting a PICC line. Respondent: The nursing. Interviewer: The nursing? Okay. Do you think that's the safest option? Respondent: I think so. Interviewer: Do you consider other things, like if she has housing or transportation? Respondent: I don't know.	PICC line risk, multidisciplinary group

	1002	Interviewer: Some hospitals can have a multidisciplinary group to evaluate these specific patients and cases. Do you know if [Tess] has that? Respondent: I don't know. Interviewer: Do you think it would be helpful to have? Respondent: I think so. Interviewer: Who do you imagine would be there? Respondent: [The patient], cardiology, and then some other pain control. What else? Like, pharmacists and then coordinators who can reach out to the family. I think that's about it, yeah.	multidisciplinary group, follow-up care
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	data, discussing addiction, follow-up care, multidisciplinary group
	1003	Yeah. Well, they would undergo – we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive	SUD treatment, commitment to recovery, discussing addiction, follow-up care, multidisciplinary group, post-operation care, protocol
	1003	fortunately he's been with us for about a year, so I – when I go see a patient, once I assess them, I, if he hasn't seen the patient yet, I notify the medical team to get in contact with	collaboration with addiction medicine, multidisciplinary group

		him, and he's pretty good at coming to see a patient within 24 hours. And so, that's great. And then, I stay in contact with him and you know, tell him the surgery is scheduled and he'll see the patient afterwards, too. So, it's been a good collegiality – collegial relationship – colleagues and addiction medicine.	
	1003	Well, I would like to see his efforts supported. Right now, he's the only one we have. I think – this is going to - I want the hospital to support him. In terms of me, my efforts, well I've got no major issues there. I mean, if I book someone up for surgery, then I don't [meet] any resistance from the hospital. They, you know, they don't – they trust our judgement about who needs an operation, and then our job to do a – execute, and do a good operation. So not particularly. I don't have any outstanding conflicts with the hospital in terms of support for the program.	multidisciplinary group, collaboration with addiction medicine, discussing addiction
	1003	Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	changes over time, support for patient, SUD treatment, stigma , societal issue, collaboration with addiction medicine, multidisciplinary group
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better	accountability, changes over time, collaboration with addiction medicine, commitment to recovery, follow-up care, multidisciplinary group

		than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	
	1003	ell, while they're in the hospital, obviously, they're being – well, we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	multidisciplinary group, collaboration with addiction medicine, pain management, timing of SUD tx
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	pain management, changes over time, multidisciplinary group, collaboration with addiction medicine
	1003	we've gotten much better at preventing withdrawal. It used to be more of a problem than now. I think again, with addiction medicine involved, we maintain them in some narcotics before surgery, during, and after. We're not stopping things cold turkey. We're much better at that than we used to be. So, I've not seen much withdrawal, tell you the truth. Recently.	withdrawal management, multidisciplinary group, collaboration with addiction medicine
	1003	We've had a couple meetings. We should have more regular meetings. Dr. Wurcel actually had two excellent meetings that she directed. Yes, I think we should have like, at least monthly meetings with them more frequently. To discuss this problem. Yeah, multi-disciplinary approach. [What was] - what we've had. We had addiction medicine there, infectious disease, social work, surgeon - surgeons. Yeah.	collaboration with addiction medicine, multidisciplinary group
	1014	I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching	multidisciplinary group, data, discussing addiction

		their heads, coming up with dynamic guidelines that keep changing with the data.	
	1014	I: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? S: On and off. I: Do you think it's helpful? S: Absolutely.	multidisciplinary group
	1014	I: Just a couple more questions. Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: So, no, we don't have guidelines. We tried to write them, there are no guidelines. There are some discrepancies, every now and then, between us, the infectious disease people, the, the, the psychiatrists, and the ethics department here, who, they are a little bit distant from what we, you know, we are not on the same page. Let, let me put it in a different way, we are, uh, we, we don't look at the problem the same way, and we need to sit down more and have a more elaborate discussions. Because writing notes on a patient's chart and quoting esoteric papers just doesn't help anybody.	protocol, multidisciplinary group
	1014	S: No, I'm glad somebody…I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their	societal issue, insurance, follow-up care, regional differences, multidisciplinary group

		insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that. We don't, we don't.	
	1005	Interviewer: Is there someone in the hospital that you can call who has addiction medicine experience? Interviewee: Yes, we recommend addiction medicine consultants on every patient.	collaboration with addiction medicine, multidisciplinary group
	1005	Interviewer: Sounds familiar. Okay, so we were talking about the role of medications and then I'm gonna bridge this into psychotherapy and the role of psychotherapy. Do these treatments exist alone or do they need to be combined? Interviewee: I think they need to be combined.	SUD treatment, multidisciplinary group
	1005	Interviewer: Tell me a little bit about your experience with managing pain in this population? Interviewee: Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl just in the ICU, and then we try to bridge that to the lowest dose oral narcotic that we can on the floor. My preference is to try to minimize them to just tramadol and/or Tylenol. Many times the pain service will put folks on PCAs and continue their IV medication a lot longer than we like to do that.	pain management, post-operation care, multidisciplinary group, collaboration with addiction medicine
	1005	nterviewer: Are there any changes that you would like to see with regards for treatment of endocarditis? Interviewee: I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates,	desired changes, multidisciplinary group, protocol, cost, insurance, tx compared to broader, frustration

		and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	
	1005	Okay. I think you're already answering this one as well, some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Interviewee: Not that I know of. Interviewer: Do you think it would be helpful? Interviewee: Yes. Interviewer: You already answered that. Who needs to be involved and come to these meetings to make it worthwhile? Interviewee: Well it would be a difficult time to try to get all of us together. Perhaps, a once every two weeks or once a month meeting on the difficult cases would be nice. I think that it needs to be cardiac surgery, cardiology, infectious disease, addiction medicine, pain team, social work and discharge planner.	multidisciplinary group, time constraints, desired changes, collaboration with addiction medicine
	1014	It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	multidisciplinary group, follow-up care, post-operation care, futility, changes over time
	1014	: What do you think the role of medications play in the treatment for…? S: I don't want to comment. I: How about psychotherapy? S: Important. I: Do you think these types of treatment exist alone or do they need to be combined? S: Combined.	SUD treatment, multidisciplinary group

	1014	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes and no. I mean, the blatant refusal is, it gives me pause. If a patient is saying, "Nope, I won't stop," and if they are in a mental, you know, state, where they're absolutely, you know, saying, "You operate on me and I know I'm going to use again," you know, those are far and few in between. Those are rare, but sometimes you see them. And, and, you, kind of, wonder, what am I doing here? This is where, you know, the support, the hospital support, with psychiatrists and all the disciplines, it becomes a multidisciplinary approach, and I've tried to involve other, some of my partners, like, you know, this guy is a recurrent offender, and he intends on, on, so what are we doing? So, that's, that's the epitome of futility in my eyes.	commitment to recovery, stigma , multidisciplinary group
	1014	Tell me about your experience with managing withdrawal in this population? S: Here we go. I rely on the, again, on people helping us out with this, the critical care, the intensivist, because those, those withdrawal, they can get into trouble, especially if you just rush to an operation for one reason or another. And, um, not rush, but you didn't see that they're gonna go into the throe, and after the operation, they are in bad shape, at a minimum they can rip their breastbone apart, they don't wake up that quickly from the anesthetic, you know, they are still intubated, they're wiggling in bed, and they end up hurting themselves, and the mediastinum, if they tear open their breastbone, they can get infected and go from one thing to another. It is a medical problem more than anything.	withdrawal management, medical model, multidisciplinary group
	1014	: Gotcha. Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Good question. The initial treatment, probably not. But afterwards, I hope it does. Because that would minimize recurrence. Again, recidivism is what kills them. I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data. I: How much time do you think is needed for these changes? S: I mean, we needed them five years ago. I: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this?	desired changes, multidisciplinary group, protocol, time constraints, discussing addiction, societal issue

		S: On and off. I: Do you think it's helpful?	
	1014	I: Just a couple more questions. Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: So, no, we don't have guidelines. We tried to write them, there are no guidelines. There are some discrepancies, every now and then, between us, the infectious disease people, the, the, the psychiatrists, and the ethics department here, who, they are a little bit distant from what we, you know, we are not on the same page. Let, let me put it in a different way, we are, uh, we, we don't look at the problem the same way, and we need to sit down more and have a more elaborate discussions. Because writing notes on a patient's chart and quoting esoteric papers just doesn't help anybody.	protocol, multidisciplinary group
	1014	I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back	multidisciplinary group, follow-up care, regional differences, seriousness, insurance, lack of resources

		to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that.	
	1009	Is there someone that you could call in the hospital who has addiction medicine expertise? Surgeon: Yes. Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	collaboration with addiction medicine, multidisciplinary group, risk evaluation, futility

	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility

	1009	Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	administration, follow-up care, priorities, multidisciplinary group
	1009	In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery.	support for patient, multidisciplinary group, post-operation care, follow-up care
	1009	And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed.	time constraints, lack of resources, follow-up care, medical model, post-operation care, multidisciplinary group

	1009	So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	post-operation care, follow-up care, frustration, multidisciplinary group, accountability, desired changes
	1009	How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	disagreements (professional), accountability, frustration, multidisciplinary group, follow-up care, societal issue, desired changes

	1009	And some hospitals convene a multidisciplinary group to evaluate people who inject drugs before their valve replacement. Does this hospital do that? Surgeon: No. Interviewer: Is that something you'd like to see? Surgeon: It probably wouldn't matter. Who's in the multidisciplinary group, right? Interviewer: Who do you think should be? Surgeon: I mean, really, when I have patients I speak with the Infectious Disease doctor and the cardiologist. The ultimate decision on whether the patient gets an operation is based on the surgeon, regardless of what the Infectious Disease doctor or cardiologist say. I think when these groups get together I think they spend an hour talking about nothing. You can get to the heart of the matter very quickly and so it would probably be a waste of – you know, there's not enough hours in a day to sit through an hour-long meeting. I think you can really get to the heart of the matter in terms of what needs to be done in just a few minutes.	multidisciplinary group, time constraints, frustration, futility
	1010	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? They seem to uh, they seem to, not everyone, but many of them seem to talk better than I do and have more friends among the consulting services, but they don't end up operating on them I end up operating on them. I think I am a very direct person and that doesn't help me. Uh because I may rub someone the wrong way by telling them what I think, someone else may tell them what they want to hear which may make them feel good, but they don't operate. So uh, I mean I am a very direct person and the only thing that helps is going to bed at night and looking at myself in the mirror and I can say yeah, I am ok. But that doesn't help with your daily interactions.	tx compared to colleagues, multidisciplinary group
Pain management			

	1006	Interviewer: Tell me about your experience with managing pain in this population? Interviewee: They take a lot of pain medicine. It's a little challenging because it's hard to draw the line between what's legitimate postoperative discomfort and what is drug seeking behavior. We try and stay away from the drugs like Dilaudid. Interviewer: What works to treat their pain? Interviewee: I try and use nonopioid medications, but otherwise just titrate the dose of standard opioids. Interviewer: What has not worked? Interviewee: What has not worked for their pain? Interviewer: Mm-hmm. Interviewee: Gosh, in early postop, expecting them to get by on acetaminophen and Motrin is unrealistic 'cause their sternotomies are painful, but I [unintelligible 13:30] hasn't worked, give 'em enough opiates it feels okay. Then there are the other drugs, Toradol and things like that, but once they're out a few days it'll change over to that. Interviewer: Do you consult another service for pain management? Interviewee: Not usually.	pain management, follow-up care, post-operation care
	1010	Tell me about your experience with managing pain in this population. They always have much higher needs than the standard patient. I don't think it is because of who they are, like because they are crybabies, I think it well, it I think it is a medical fact that if you have been exposed to opiates then your baseline without anything is pain. I don't know what that pain is they talk about, this pain all over the place that goes away when they shoot up, I can't imagine what that is, but I would think that, it is something, the only way I can associate with that is with the flu and you have like this weird pain all over, it doesn't happen that often but we have all gotten the flu. Which is not quite a pain it's a different thing, but I would think it is the same.	pain management, empathy, collaboration with addiction medicine

	1010	Do you consult another service for pain management in this population? Not always. If we cannot handle the pain and the pain is affecting let me think. I don't think we always do actually. The addiction services are involved, and I believe they have something to do with that because you don't just want to give someone 50 Percocets and send them home. Usually the patients themselves are very scared of taking percocets and uh so I'm trying to remember exactly what we do. We don't always get the pain service, but the addiction service is involved, and I believe they are the ones who decide how much and what kind and that stuff.	pain management, collaboration with addiction medicine, training
	1010	ell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, pain management, collaboration with addiction medicine, accountability, liability of medical professionals, deservingness, follow-up care, protocol, risk evaluation
	1019	Okay. Um, do people who inject drugs have different operative or postoperative mortality or complications? Well, I think their, um… their incidence of, um, valve infections, prosthetic valve infections, is much higher. Ok Um, I also think that, um, intravenous drug users, uh, are more difficult to manage from a pain perspective for fairly obvious reasons [COUGHING]. They also tend to be younger patients. So, they do, despite the fact that they have an addiction, and it can be a pretty serious thing… Um, heart function is usually pretty good and, um, they're young individuals and usually recover well from surgery, which is	perception of risk in PWID, age, pain management, multiple surgeries, prevalence of endocarditis, seriousness

		fortunate for them because, uh, often a lot of them need 2 or 3 surgeries.	
	1019	So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would… I would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, post-operation care, SUD treatment, discussing addiction, follow-up care, deservingness, perception of risk in PWID, paternalism
	1019	Okay. Um, tell me about the experience of managing pain in this population- It's challenging. -you've kind… you've kind of touched on, with you being able to give them opioids and stuff. But, other than that, what works to treat their pain. What hasn't? Large doses of opioids	pain management

	1019	Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	pain management, support for patient, risk evaluation, protocol, post-operation care, empathy, lack of knowledge
	1019	o it doesn't impact your ability to operate or manage their pain, you think? No… no… uh, not at all. Um… that… I've… I've never canceled an operation because a patient was going through withdrawal that… that I can recall.	withdrawal management, pain management
	1019	Okay. Um, do people who inject drugs have different operative or postoperative mortality or complications? Well, I think their, um… their incidence of, um, valve infections, prosthetic valve infections, is much higher. Ok Um, I also think that, um, intravenous drug users, uh, are more difficult to manage from a	perception of risk in PWID, age, pain management, seriousness, multiple surgeries, prevalence of endocarditis

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	1019	Okay. Um, tell me about the experience of managing pain in this population- It's challenging. -you've kind… you've kind of touched on, with you being able to give them opioids and stuff. But, other than that, what works to treat their pain. What hasn't? Large doses of opioids.	pain management

	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care
	1019	Do you… tell me about any experiences you've had with managing withdrawal in this population? I've had limited experience with it. Um, you know, it's generally… uh, it's genrally… uh, hypera-, hyperactivity in the cardiovascular system, tachycardia, hypertension, that sort of stuff. It's usually pretty easy to control Okay because we have great medicines. It's not generally a problem. So it doesn't impact your ability to operate or manage their pain, you think?	pain management, withdrawal management

		No… no… uh, not at all. Um… that… I've… I've never canceled an operation because a patient was going through withdrawal that… that I can recall.	
	1008	nterviewer: Okay. Cool. And how knowledgeable do you feel about the available treatments for people who use drugs? You know, like available treatment for opioid use disorder or something? Respondent: I refer to the -- there's the -- that team-- that does this. I refer everybody to them. Interviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance. Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem	SUD treatment, lack of knowledge, commitment to recovery, withdrawal management, pain management, deservingness, collaboration with addiction medicine

	1008	Can you tell me a little bit more about your experience managing pain in this population? You said like a little bit about it, but. Respondent: They just require a lot of medications. And they're in pain a lot. Because, you know, the receptors are down regulated, I think. Again, we get the experts involved to help manage that. Interviewer: There's a pain management service? Respondent: Yep. Yeah. Interviewer: Okay. What tends to work to treat their pain? Like what do they end up on usually? Do you know? Respondent: No. The usual stuff. I mean they give methadone. They give them all sorts of stuff and it's mainly narcotic-based, at least early on	pain management, multidisciplinary group
	1019	Okay. Um, do people who inject drugs have different operative or postoperative mortality or complications? Well, I think their, um… their incidence of, um, valve infections, prosthetic valve infections, is much higher. Ok Um, I also think that, um, intravenous drug users, uh, are more difficult to manage from a pain perspective for fairly obvious reasons [COUGHING]. They also tend to be younger patients. So, they do, despite the fact that they have an addiction, and it can be a pretty serious thing… Um, heart function is usually pretty good and, um, they're young individuals and usually recover well from surgery, which is fortunate for them because, uh, often a lot of them need 2 or 3 surgeries.	perception of risk in PWID, age, pain management, seriousness, multiple surgeries, prevalence of endocarditis
	1019	would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a	pain management, timing of SUD tx, post-operation care, discussing addiction, paternalism

		serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	
	1019	Okay. Um, tell me about the experience of managing pain in this population- It's challenging. -you've kind… you've kind of touched on, with you being able to give them opioids and stuff. But, other than that, what works to treat their pain. What hasn't? Large doses of opioids.	pain management
	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care

		appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	
	1019	Do you… tell me about any experiences you've had with managing withdrawal in this population? I've had limited experience with it. Um, you know, it's generally… uh, it's genrally… uh, hypera-, hyperactivity in the cardiovascular system, tachycardia, hypertension, that sort of stuff. It's usually pretty easy to control Okay because we have great medicines. It's not generally a problem. So it doesn't impact your ability to operate or manage their pain, you think? No… no… uh, not at all. Um… that… I've… I've never canceled an operation because a patient was going through withdrawal that… that I can recall.	pain management, withdrawal management
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams	multidisciplinary group, pain management, lack of knowledge, support for surgeons, post-operation care

	1016	I: Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	support for surgeons, pain management, follow-up care, post-operation care, multidisciplinary group
	1016	I: Yes, so talking about pain management, how knowledgeable do you feel about the drugs available, um, or available treatments for people who use drugs? S: Um, I feel somewhat knowledgeable, um, I'm also, as the attending surgeon, I'm not the prescriber of any medications, so usually the person ordering, it's going through the nurse practitioners and the ICU.	pain management, lack of knowledge
	1016	I: Tell me about your experience with managing pain in this population. S: Um, we touched on this a little bit, but, um, I, I don't, as, kind of, the attending surgeon, I leave that to my team, um, so I'm not directly involved with pain management. I: Um, do you know what the nurse practitioners have found that works to treat pain or what doesn't work? S: Truthfully, I don't know. We have everything from the, the PCAs, um, which I feel like the patients like a lot. The issue is that, it's always very hard to wean them off the PCAs. And then, uh, a combination of, in general, we use oxycodone here.	pain management, lack of knowledge

	1016	We use less Dilaudid in cardiac surgery, but it is available. Um, every once in a while, we will use lidocaine patches for the chest wall, um, we will do, um, Toradol, sometimes. Um, I think we've even doing some IV Tylenol, in certain cases. Um, those are kind of the big ones, um. I've tried this once recently, and it wasn't in the setting of IV drugs, but just as something to think about, uh, there, I forget what the context is, I think it was because he had some bad respiratory function, and we were worried about splinting and pulmonary recovery post-sternotomy, um, the anesthesia team put some, like, cue balls in under the sternum, into the muscles, and they did like, uh, they did like a block of the chest wall and then they put, almost like in plastic surgery, some coils that sit in very tiny catheters that have like a local anesthetic that, kind of, slowly injects over, um, you know, over days, and then they take it out like four days later or so. So, it kind of helps, I've only used it once, and it wasn't in the	pain management, mechanical problem
	1016	I: Yeah, and that was helpful for the patient, that was able to control their pain? Did they have to have, like, any additional medicines? S: I don't know, I can't remember off the top of my head, if he was supplemented with additional medications, um, or if it maybe reduced the amount of additional medications that we needed. Um, in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners pre	pain management, lack of knowledge, support for patient, multidisciplinary group
	1016	I: Tell me about your experience with managing withdrawal in this population? Again, it might be the same as before, but… S: Um, I would say that I actually don't see much in the withdrawal space, because usually the patients come in and are in the hospital for a little while before they, um, before they, kind of, go to surgery, so it's usually more the ICU that is managing that or the floor.	pain management, withdrawal management, lack of knowledge

		I: With the withdrawal experience maybe you have had in the past, does it affect your ability to operate or manage their pain? S: Um, I can't really answer that.	
	1016	how would you feel about operating on someone who used to use drugs 10 years ago, gets prosthetic valve endocarditis after a dental procedure? S: I think that's a very different clinical situation. And, um, I think that that patient, you know, um, it's still risky in the sense that you're still undergoing the same challenges, and then you're still introducing narcotics again postoperatively for pain management, so I think that the counseling at the other, at the postoperative period is just as important in that second patient with the dental abscess. But it certainly makes my decision to replace the valve, um, a lot more straightforward.	perception of risk in PWID, pain management, time between operations
	1006	Interviewer: Tell me about your experience with managing pain in this population? Interviewee: They take a lot of pain medicine. It's a little challenging because it's hard to draw the line between what's legitimate postoperative discomfort and what is drug seeking behavior. We try and stay away from the drugs like Dilaudid. Interviewer: What works to treat their pain? Interviewee: I try and use nonopioid medications, but otherwise just titrate the dose of standard opioids. Interviewer: What has not worked? Interviewee: What has not worked for their pain? Interviewer: Mm-hmm. Interviewee: Gosh, in early postop, expecting them to get by on acetaminophen and Motrin is unrealistic 'cause their sternotomies are painful, but I [unintelligible 13:30] hasn't worked, give 'em enough opiates it feels okay. Then there are the other drugs, Toradol and things like that, but once they're out a few days it'll change over to that. Interviewer: Do you consult another service for	pain management, post-operation care, perception of risk in PWID, follow-up care

		pain management? Interviewee: Not usually.	
	1002	nterviewer: Can you tell me about your experience managing pain in this population? How do you manage pain for your patients in this scenario? Respondent: No opioids for most of the time. Interviewer: Has there ever been anything that has not worked well for pain management? Respondent: With other – the young patients are more and more – those patients have more pain than the elderly patients. So sometimes it's tough, but yeah, you just need to – I don't like to use opioids for these patient populations.	pain management, post-operation care, age, stigma
	1002	terviewer: Do you ever consult other services for pain management? Respondent: Yes, pain control. Interviewer: And you had a good experience with those other teams? Respondent: Yeah, I think it's okay.	multidisciplinary group, pain management
	1007	Okay. Thank you. Please call me about your experience with managing pain in this population. Speaker 2: Um, again, we work with addiction medicine and have them consult before the surgery, but we would acknowledge them	pain management, collaboration with addiction medicine

		same as anyone else with additional methadone or whatever.	
	1017	Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, administration, cost, perception of risk in PWID
	1017	Hmm, just that I think that, um, there are, um, particularly, uh, non-opioid, um, pain regimens that hospitals need to explore despite the cost. I think that we cannot use the same criteria when you've got such a complicated problem like this.	cost, pain management
	1013	Do they have different complications? Uh, so they may have complications related to liver disease, so uh, its not infrequent for them also to have hepatitis C so they may have some element of cirrhosis associated with that, obviously, peri-operative pain management is more challenging but other than that I don't think so.	screening for ID, pain management, post-operation care
	1013	Tell me about your experience with managing pain in this population. So, we get the pain service involved and it's a real challenge because they feel genuine pain, their threshold is lower and it is extremely hard to control their pain and so you have to rely a lot on non-steroidal agents, that kind of stuff What works or doesn't work to treat their pain in your experience? So Toradol [works] but it's a real challenge. And when I see somebody who's had that problem pre-op I warn them about it.	pain management, pre-operation care, discussing addiction

	1003	we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	multidisciplinary group, collaboration with addiction medicine, pain management, post-operation care, timing of SUD tx
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	pain management, follow-up care, post-operation care, liability of medical professionals, collaboration with addiction medicine, changes over time
	1003	what works to treat their pain? What hasn't worked? Respondent: Well, they all need some element of narcotics, so – and we find the intravenous medications work well in the ICU. Intravenous Fentanyl, intravenous Dilaudid. And then on the floor, the oral agents seem to work fairly well in addition. Once they get transitioned to IV and oral drugs, we use oral Dilaudid; also, Percocets. And then we'll add, often times, a non-steroidal inflammatory - anti-inflammatory agents, such as Toradol, people are using Toradol. And then - some patients, [it] actually works; hard to believe, but some patients respond to Toradol. Or this patient population.	pain management, seriousness, protocol
	1003	Interviewer: Yeah. Do you start with an NSAID, or…? Respondent: No. Interviewer: Okay. Respondent: Well, that's a good question. Do we start with it? No, but we could [unintelligible 0:18:05] it, if necessary. So probably half our patients are on Toradol. And then, I don't know – NSAIDs and narcotics: I don't have much expertise with other - those other medications out there for pain. Ultram,	pain management, lack of knowledge

		and Tramadol – those kind of things. I don't have a lot of experience with those.	
	1009	t about your experience managing pain in this population? Do you know what works to treat their pain? What does not work? Do you have another service to consult? Surgeon: The hospital has a new pain management service that are available. I mean, generally, we're using narcotics in the perioperative period. If someone has a sternotomy and their chest is open, they need narcotics.	pain management
	1011	n the case of this vignette how should this patient's opioid use disorder be treated and when? I think form my perspective what she needs right away, or what she needs first is the treatment for her cardiogenic shock and the problem that she has that she will require some sort of a surgical operation based on whatever the imaging suggests and then after that there has to be attention to her acute pain needs because it is a surgical procedure she is going to have some pain but as she weans away from her operation I think that is where the transition needs to happen.	timing of SUD tx, priorities, pain management, follow-up care
	1011	Tell me about your experience with managing pain in this population. It is, it does become tricky because you want to give them the pain meds they need to get over their operative pain but also don't want to, uh, it sometimes becomes hard to decide if they are having real pain or if they are using that as a pretext or pretense to get more prescribed pain meds. So, most of the time we will get the acute pain team and the [addiction team] together so that they can help us with managing pain in these patients. Our teams prescribe them whatever routine pain meds they prescribe, sometimes they need different dosages of pain meds based on what tolerance they have built but we are reliant on our inpatient pain specialists to help through that.	pain management, multidisciplinary group, perception of risk in PWID, liability of medical professionals

	1017	I: Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, perception of risk in PWID, administration, cost
	1013	Do they have different complications? Uh, so they may have complications related to liver disease, so uh, its not infrequent for them also to have hepatitis C so they may have some element of cirrhosis associated with that, obviously, peri-operative pain management is more challenging but other than that I don't think so.	screening for ID, pain management
	1013	So, we get the pain service involved and it's a real challenge because they feel genuine pain, their threshold is lower and it is extremely hard to control their pain and so you have to rely a lot on non-steroidal agents, that kind of stuff What works or doesn't work to treat their pain in your experience? So Toradol [works] but it's a real challenge. And when I see somebody who's had that problem pre-op I warn them about it.	pain management, pre-operation care
	1015	I: Ok. Tell me about your experience with managing pain in this population. S: Um…it seems to be harder to control than most. I: Do you consult another service for pain management? S: Yes, most of the time. Not always, but most of the time.	pain management, multidisciplinary group
	1001	Respondent: We have [our OTNs] – you know, the [protocol] – but if we believe if somebody postoperative is in pain or (their) narcotics use is out of norm, then we would consult a specialist. But first we want to – you know, a	pain management, protocol, post-operation care, multidisciplinary group

		medical reason – if that can be explained. If there's really no medical reason for excessive or intensive pain, then we would investigate.	
	1001	Respondent: It's tough. It's difficult. I think there is no exception for those patients who require more narcotics or complain – you know, more pain than a regular patient. That's just our [experience]. Certainly it is difficult to take care of those patients, postoperative.	pain management, post-operation care, frustration
	1001	nterviewer: Okay, and what has not worked well for managing pain in this population that you've seen with patients? Respondent: Yeah, because all the narcotics are associated with side effects, so there's a limit to use. So overuse causes problems, can delay their progress from recovery [overlapping noise] even affect the hemodynamics. Typically after a surgery, after three or four days the pain should be minimal. That is usually the time for patient to resume some degree of their activity at baseline, but our experience is the [possibility] of recover for the drug use patients is a little bit delayed. It's more or less related to the overuse of narcotics postop.	pain management, post-operation care, perception of risk in PWID, follow-up care
	1001	Interviewer: Do you find yourself consulting other services for pain management issues? Respondent: I almost routinely consult, yeah. So the two services – this is why I would hope there would be a program here. That way there would be a multidisciplinary care on each single patient who has such a history, but currently we have to call the individual [consult service] – for example, the drug addiction service and psychiatry. I cannot [tell you] how much they are able to help if they are willing, just because this group of patients always is challenging to everybody. So I think overall we are doing the best we can.	support for surgeons, pain management, multidisciplinary group, stigma , collaboration with addiction medicine
	1004	I: Tell me about your experience with managing pain in this population R: They require high doses, so I speak with the pain services. I don't know enough about pain management, their tolerance is so high that I don't know what they need I: What has your experience been with managing withdrawal in this population? R: Zero: if the person is actively in withdrawal I will not operate, it's too risky	pain management, perception of risk in PWID, withdrawal management
	1005	Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl just in the ICU, and then we try to bridge that	pain management, multidisciplinary group, collaboration with addiction medicine

		to the lowest dose oral narcotic that we can on the floor. My preference is to try to minimize them to just tramadol and/or Tylenol. Many times the pain service will put folks on PCAs and continue their IV medication a lot longer than we like to do that.	
	1005	Interviewer: You may have already answered this, do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: No.	withdrawal management, pain management
	1008	Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem.	pain management
	1008	Interviewer: Okay. Can you tell me a little bit more about your experience managing pain in this population? You said like a little bit about it, but. Respondent: They just require a lot of medications. And they're in pain a lot. Because, you know, the receptors are down regulated, I think. Again, we get the experts involved to help manage that. Interviewer: There's a pain management service? Respondent: Yep. Yeah. Interviewer: Okay. What tends to work to treat their pain? Like what do they end up on usually? Do you know? Respondent: No. The usual stuff. I mean they give methadone. They give them all sorts of stuff and it's mainly narcotic-based, at least early on.	pain management, SUD treatment

	1008	Do you think that the treatment for endocarditis in the people who inject drugs is going to -- will change in the future? Respondent: I hope so, but I doubt it. Interviewer: Okay. Respondent: I don't see any wonder drug coming around or other therapy. I think it's going to be this way for the next 10 years. Interviewer: And then maybe in the 10 years after that? Who knows? Respondent: Who knows. Interviewer: Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school. Interviewer: So, who like -- I don't know. Who would need to make changes then? Everyone? Respondent: Everybody. Interviewer: Yeah. Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	changes over time, pain management, accountability, cost, deservingness, frustration

	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams Tell me about your experience with managing withdrawal in this population. It's the same, you call the pain team to ask them for their help.	pain management, lack of knowledge, support for surgeons, post-operation care, multidisciplinary group
	1012	Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging. What works or doesn't work to treat their pain in your experience? We usually get a pain consult and let them help us manage it and I think those are you know when you are giving opiates to people with an opiate addiction it's not, you know, so we try all the non-opiate medications but they don't tend to be very effective either.	pain management, post-operation care, liability of medical professionals, stigma
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams	multidisciplinary group, pain management, lack of knowledge, support for surgeons, post-operation care
	1005	Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl just in the ICU, and then we try to bridge that to the lowest dose oral narcotic that we can on	pain management, multidisciplinary group, collaboration with addiction medicine

		the floor. My preference is to try to minimize them to just tramadol and/or Tylenol. Many times the pain service will put folks on PCAs and continue their IV medication a lot longer than we like to do that.	
	1005	Interviewer: You may have already answered this, do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: No.	withdrawal management, pain management
	1017	I: Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, perception of risk in PWID, administration, cost
	1004	They require high doses, so I speak with the pain services. I don't know enough about pain management, their tolerance is so high that I don't know what they need	pain management
	1016	Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for	support for surgeons, post-operation care, follow-up care, pain management, multidisciplinary group

		addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	
	1016	Yes, so talking about pain management, how knowledgeable do you feel about the drugs available, um, or available treatments for people who use drugs? S: Um, I feel somewhat knowledgeable, um, I'm also, as the attending surgeon, I'm not the prescriber of any medications, so usually the person ordering, it's going through the nurse practitioners and the ICU.	pain management, lack of knowledge
	1016	Tell me about your experience with managing pain in this population. S: Um, we touched on this a little bit, but, um, I, I don't, as, kind of, the attending surgeon, I leave that to my team, um, so I'm not directly involved with pain management. I: Um, do you know what the nurse practitioners have found that works to treat pain or what doesn't work? S: Truthfully, I don't know. We have everything from the, the PCAs, um, which I feel like the patients like a lot. The issue is that, it's always very hard to wean them off the PCAs. And then, uh, a combination of, in general, we use oxycodone here. We use less Dilaudid in cardiac surgery, but it is available. Um, every once in a while, we will use lidocaine patches for the chest wall, um, we will do, um, Toradol, sometimes. Um, I think we've even doing some IV Tylenol, in certain cases. Um, those are kind of the big ones, um. I've tried this once recently, and it wasn't in the setting of IV drugs, but just as something to think about, uh, there, I forget what the context is, I think it was because he had some bad respiratory function, and we were worried about splinting and pulmonary recovery post-sternotomy, um, the anesthesia team put some, like, cue balls in under the sternum, into the muscles, and they did like, uh, they did like a block of the chest wall and then they put, almost like in plastic surgery, some coils that sit in very tiny catheters that have like a local anesthetic that, kind of, slowly injects over, um, you know, over days, and then they take it out like four days later or so. So, it kind of helps, I've only used it once, and it wasn't in the setting of IV	pain management

		drug use, but, um, something that, you know, may be beneficial in this patient population.	
	1016	in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners prescribe.	pain management, multidisciplinary group, support for patient, lack of knowledge
	1016	Tell me about your experience with managing withdrawal in this population? Again, it might be the same as before, but… S: Um, I would say that I actually don't see much in the withdrawal space, because usually the patients come in and are in the hospital for a little while before they, um, before they, kind of, go to surgery, so it's usually more the ICU that is managing that or the floor. I: With the withdrawal experience maybe you have had in the past, does it affect your ability to operate or manage their pain? S: Um, I can't really answer that.	withdrawal management, pain management, lack of knowledge
	1016	how would you feel about operating on someone who used to use drugs 10 years ago, gets prosthetic valve endocarditis after a dental procedure? S: I think that's a very different clinical situation. And, um, I think that that patient, you know, um, it's still risky in the sense that you're still undergoing the same challenges, and then you're still introducing narcotics	time between operations, discussing addiction, pain management, perception of risk in PWID

		again postoperatively for pain management, so I think that the counseling at the other, at the postoperative period is just as important in that second patient with the dental abscess. But it certainly makes my decision to replace the valve, um, a lot more straightforward	
	1006	Interviewer: Tell me about your experience with managing pain in this population? Interviewee: They take a lot of pain medicine. It's a little challenging because it's hard to draw the line between what's legitimate postoperative discomfort and what is drug seeking behavior. We try and stay away from the drugs like Dilaudid. Interviewer: What works to treat their pain? Interviewee: I try and use nonopioid medications, but otherwise just titrate the dose of standard opioids. Interviewer: What has not worked? Interviewee: What has not worked for their pain? Interviewer: Mm-hmm. Interviewee: Gosh, in early postop, expecting them to get by on acetaminophen and Motrin is unrealistic 'cause their sternotomies are painful, but I [unintelligible 13:30] hasn't worked, give 'em enough opiates it feels okay. Then there are the other drugs, Toradol and things like that, but once they're out a few days it'll change over to that. Interviewer: Do you consult another service for pain management? Interviewee: Not usually.	pain management, follow-up care, post-operation care
	1012	They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging.	post-operation care, pain management
	1012	What works or doesn't work to treat their pain in your experience? We usually get a pain consult and let them help us manage it and I think those are you know when you are giving opiates to people with an opiate addiction it's not, you know, so	pain management, stigma , post-operation care, liability of medical professionals

		we try all the non-opiate medications but they don't tend to be very effective either.	
	1012	So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them hemodynamically unstable and it's just not safe.	withdrawal management, pain management, collaboration with addiction medicine, multidisciplinary group, disagreements (professional), paternalism, defensive
	1015	I: Ok. Tell me about your experience with managing pain in this population. S: Um…it seems to be harder to control than most. I: Do you consult another service for pain management? S: Yes, most of the time. Not always, but most of the time.	pain management, multidisciplinary group
	1010	Tell me about your experience with managing pain in this population. They always have much higher needs than the standard patient. I don't think it is because of who they are, like because they are crybabies, I think it well, it I think it is a medical fact that if you have been exposed to opiates then your baseline without anything is pain. I don't know what that pain is they talk about, this pain all over the place that goes away when they shoot up, I can't imagine what that is, but I would think that, it is something, the only way I can associate with that is with the flu and you have like this weird pain all over, it doesn't happen that often but we have all gotten the flu. Which is not quite a pain it's a different thing, but I would think it is the same. Do you consult another service for pain management in this population? Not always. If we cannot handle the pain and the pain is affecting let me think. I don't think we always do actually. The addiction services are involved, and I believe they have something to do with that because you don't just want to give someone 50 Percocets and send them home. Usually the patients themselves are very scared of taking percocets and uh so I'm trying to remember exactly what we do. We don't always get the pain service, but the addiction service is involved, and I believe they are the ones who decide how much and what kind and that stuff.	pain management, collaboration with addiction medicine

	1013	So, we get the pain service involved and it's a real challenge because they feel genuine pain, their threshold is lower and it is extremely hard to control their pain and so you have to rely a lot on non-steroidal agents, that kind of stuff What works or doesn't work to treat their pain in your experience? So Toradol [works] but it's a real challenge. And when I see somebody who's had that problem pre-op I warn them about it.	pain management, pre-operation care, collaboration (secondary)
	1014	: Um, kind of going on that…Tell me about your experience with managing pain in this population. S: Here we go. So, pain and not just that, pain and, uh, let's say we go the nonoperative management, where we put a PICC line in them, and they have no where to go. I mean, you put a PICC line in them, you just give them an access like, access like unbelievable to inject. And do you trust them with sending them home with six weeks of antibiotics with a PICC line, I mean, that's, that's a recipe for disaster.	PICC line risk, pain management
	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	pain management, empathy, lack of knowledge, deservingness, training

	1011	Tell me about your experience with managing pain in this population. It is, it does become tricky because you want to give them the pain meds they need to get over their operative pain but also don't want to, uh, it sometimes becomes hard to decide if they are having real pain or if they are using that as a pretext or pretense to get more prescribed pain meds. So, most of the time we will get the acute pain team and the [addiction team] together so that they can help us with managing pain in these patients. Our teams prescribe them whatever routine pain meds they prescribe, sometimes they need different dosages of pain meds based on what tolerance they have built but we are reliant on our inpatient pain specialists to help through that. What works or doesn't work to treat their pain? I don't know the specifics. I think it would probably be different for every patient.	pain management, multidisciplinary group
	1002	Interviewer: Can you tell me about your experience managing pain in this population? How do you manage pain for your patients in this scenario? Respondent: No opioids for most of the time. Interviewer: Has there ever been anything that has not worked well for pain management? Respondent: With other – the young patients are more and more – those patients have more pain than the elderly patients. So sometimes it's tough, but yeah, you just need to – I don't like to use opioids for these patient populations. Interviewer: Do you ever consult other services for pain management? Respondent: Yes, pain control.	pain management
	1003	ell, while they're in the hospital, obviously, they're being – well, we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	multidisciplinary group, collaboration with addiction medicine, pain management, timing of SUD tx

	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	pain management, changes over time, multidisciplinary group, collaboration with addiction medicine
	1003	Well, they all need some element of narcotics, so – and we find the intravenous medications work well in the ICU. Intravenous Fentanyl, intravenous Dilaudid. And then on the floor, the oral agents seem to work fairly well in addition. Once they get transitioned to IV and oral drugs, we use oral Dilaudid; also, Percocets. And then we'll add, often times, a non-steroidal inflammatory - anti-inflammatory agents, such as Toradol, people are using Toradol. And then - some patients, [it] actually works; hard to believe, but some patients respond to Toradol. Or this patient population.	pain management, protocol
	1003	Interviewer: Yeah. Do you start with an NSAID, or…? Respondent: No. Interviewer: Okay. Respondent: Well, that's a good question. Do we start with it? No, but we could [unintelligible 0:18:05] it, if necessary. So probably half our patients are on Toradol. And then, I don't know – NSAIDs and narcotics: I don't have much expertise with other - those other medications out there for pain. Ultram, and Tramadol – those kind of things. I don't have a lot of experience with those.	pain management, lack of knowledge
	1005	Interviewer: Tell me a little bit about your experience with managing pain in this population? Interviewee: Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl just in the ICU, and then we try to bridge that to the lowest dose oral narcotic that we can on the floor. My preference is to try to minimize them to just tramadol and/or	pain management, post-operation care, multidisciplinary group, collaboration with addiction medicine

		Tylenol. Many times the pain service will put folks on PCAs and continue their IV medication a lot longer than we like to do that.	
	1005	Interviewer: Okay. Tell me your experience with managing withdrawal in this population? Interviewee: I think that by the time we see the patients and operate on them, usually the withdrawal has resolved and been treated by the medical or addiction team. We don't see a lot of withdrawal that we use benzos for in our patients when we operate on them. Interviewer: You may have already answered this, do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: No.	withdrawal management, collaboration with addiction medicine, pre-operation care, pain management
	1014	Um, kind of going on that…Tell me about your experience with managing pain in this population. S: Here we go. So, pain and not just that, pain and, uh, let's say we go the nonoperative management, where we put a PICC line in them, and they have no where to go. I mean, you put a PICC line in them, you just give them an access like, access like unbelievable to inject. And do you trust them with sending them home with six weeks of antibiotics with a PICC line, I mean, that's, that's a recipe for disaster.	PICC line risk, pain management
	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I	pain management, deservingness, empathy, lack of knowledge, training

		should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	
	1009	t about your experience managing pain in this population? Do you know what works to treat their pain? What does not work? Do you have another service to consult? Surgeon: The hospital has a new pain management service that are available. I mean, generally, we're using narcotics in the perioperative period. If someone has a sternotomy and their chest is open, they need narcotics.	pain management
paternalism secondary			
	1012	Have you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	disassociation (secondary), paternalism (secondary)
	1012	They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before",	paternalism (secondary)

		are you willing to try again “yeah I am willing to do it again”, but that is how the conversation usually goes. Tell me about your experience with managing pain in this population.	
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It’s hard. There are some surgeons that wouldn’t operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can’t do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	responsibility (secondary), paternalism (secondary), collaboration (secondary)
	1009	Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she’s in shock, you’re probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what’s wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it’s either destroyed the heart valve or caused some problem and that they’re going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There’s a lot of self-inflicted disease. But in a patient who’s stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that’s kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there’s no judgment, here, “We’re going to do this operation regardless of why you need the operation but this isn’t something that’s going to happen over and over again.” So we set that out and I document that in my notes the first time around.	paternalism (secondary), blame (secondary), rigidity (secondary)

		Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I just say if you use any sort of, you know, if you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on him twice and it came out that he doesn't care about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn't have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1009	Interviewer: When talking to the patient, how does their commitment treatment sort of play into your surgical decisions, if it does? Surgeon: The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	paternalism (secondary), blame (secondary)

	1009	nterviewer: I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration (secondary), redemption (secondary), responsibility (secondary), paternalism (secondary)
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration (secondary), paternalism (secondary), redemption (secondary)
	1002	Yeah, we made sure to. We just need to make sure to discuss this drug use before going to surgery, because that's probably the cause of these things.	paternalism (secondary)
	1002	The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	blame (secondary), paternalism (secondary), rationalization (secondary)

	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now. What questions do you ask? Charlie, what drugs were you using? When was the last time you used it? Have you tried quitting in the past? And then I ask them what their social support system is because I think that is what is going to prevent them from using drugs again.	paternalism (secondary), rationalization (secondary)
	1016	: And how did you approach the case? S: Um, in that case, um, the patient was brought to the operating room and had, um, um, reconstruction of their root and valve. I did have an extensive preoperative conversation with the family members, um, and, um, the patient, regarding the risks of the surgery, um, and that the importance of refraining from drugs afterwards.	paternalism (secondary)
	1016	S: I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting substance abuse help. Um, and so I'm very up front with that in addition to the risks.	blame (secondary), paternalism (secondary), rationalization (secondary)
	1003	Yeah. Well, they would undergo – we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but	prioritization (secondary), paternalism (secondary)

		if they're critically sick like that, I think the most important thing is we get them to survive	
	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone.	paternalism (secondary), redemption (secondary)
	1003	Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously. If it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery.	redemption (secondary), prioritization (secondary), paternalism (secondary)

	1003	So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	paternalism (secondary), redemption (secondary), blame (secondary)
	1004	R: Are you willing to stop using? Promise me that you'll stop using, that you'll do rehab. And if they come back, I wouldn't do it. That's pretty much what I say to patients around their addiction.	paternalism (secondary), rigidity (secondary)
	1004	Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation.	paternalism (secondary), blame (secondary), redemption (secondary)
	1015	I: And what sort of questions did you ask? S: What kind of drugs do you use? How do you use them? Have you ever tried to stop? Um, have you ever tried to, uh, and then risk factors, you know, find out about their risk factors and if they have ever had treatment? I: Ok. Um, have you ever heard the term opioid use disorder or used it when talking with a patient? S: I've heard it. I've never used it in talking to them.	paternalism (secondary)
	1008	Respondent: That we assume that they're going to quit taking drugs after the surgery, and that's a big assumption. Interviewer: Yeah. Respondent: And if they re-infect while actively taking drugs, they don't get another procedure. That's pretty much the guidelines. Otherwise, they're treated just like everybody else.	rigidity (secondary), paternalism (secondary)
	1013	If so, what questions did you ask? Well one question is do they intend to quit. And surprisingly sometimes patients say no I like using and I am going to continue to use.	blame (secondary), paternalism (secondary)

		That is pretty uncommon but it will happen every now and then.	
	1013	Using intravenous drugs is a threat to your life, you are going to continue to get infections. If we do this operate and put in an artificial valve and if you continue to use intravenous drugs the new valve is going to get infected. That's sort of that's how I would imagine that conversation to go	blame (secondary), paternalism (secondary)
	1013	So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge.	collaboration (secondary), paternalism (secondary), redemption (secondary)
	1014	I talk to them and, we are not the experts. I talk to them as much as we know from our training and experience. We talk to them. More often than not, they tell us what we want to hear. "This is it. I will never do this again. I have a younger child, and I will never do that again. I promise." But I never make it, so…they're under the gun. They're sick, they're in the hospital, and you can't just, you know, box them in a corner and say, you gotta promise, I won't do this if you come back and infect…I tell them, I tell them facts. But I try to make it, as much as I can, not a conditional conversation, meaning, you promise not to do this again, I will operate on you. Because, it's unfair, they're the patient, they're sick, they're in a bad spot, they're not doing well to begin with, they're using drugs, and for you to come in to be that overbearing on them, I think it is not the way you go.	paternalism (secondary), SUD (secondary)
	1014	Having said that, if they are stable enough and they don't need an operation, I will say, we are going to send you home on antibiotics, I'll see you in a few weeks and repeat an echocardiogram to see if this thing is developing more, but so long as they are ok, antibiotics are the way to go, but you have to stop using. You know, under the gun, needing an operation, you cannot, there is no quid pro quo, I don't, they can, they will promise it, more often than not, I don't believe it, but you have to give them a shot. They're young.	paternalism (secondary)

	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	prioritization (secondary), paternalism (secondary)
	1001	The surgical risk is high enough, and [in this moment] the cardiac surgeon's performance is carefully monitored by this society. So we're very concerned about our operative outcome. So I think if there is a high likelihood the patient would be back on the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	redemption (secondary), paternalism (secondary)
	1001	Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	paternalism (secondary), blame (secondary)
	1001	I just use 'drug use.' That clearly means the patient has been taking heroin or cocaine. I don't think there is a recommendation or anything clear at this point. I think it's nothing to do with the self – and then [identify the gender] is a separate issue. I simply just say you should stop using those drugs. I get to that point. Yeah, that's what I want to hear from the patient.	paternalism (secondary)
	1001	I just use 'drug use.' That clearly means the patient has been taking heroin or cocaine. I don't think there is a recommendation or anything clear at this point. I think it's nothing to do with the self – and then [identify the gender] is a separate issue. I simply just say you should stop using those drugs. I get to that	paternalism (secondary)

		point. Yeah, that's what I want to hear from the patient.	
Paternalism			
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation
	1010	t does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them	age, accountability, commitment to recovery, follow-up care, second chance, paternalism, discussing addiction, post-operation care

		feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	
	1019	So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would… I would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, post-operation care, SUD treatment, discussing addiction, follow-up care, deservingness, perception of risk in PWID, paternalism
	1019	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution, Yeah in the country, in the world? yeah, I think… I think, you know… I think, opinions are divided and I can't… I can't tell you how they're divided. But some feel that they would just continue to operate until it's just not technically feasible anymore, and others, uh, would, um… would	tx compared to colleagues, tx compared to broader, paternalism

		adopt an approach that incorporates their own personal biases and hospital finances, which I don't think makes sense to me. Just saying it kind of makes me cringe. But it, just… it is what it is.	
	1019	would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, timing of SUD tx, post-operation care, discussing addiction, paternalism
	1008	Have you ever discussed the drug use with a patient like this? You know, like what kinds of questions would you ask? Respondent: Oh, every case. Interviewer: Okay. Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	pre-operation care, patient consent, discussing addiction, deservingness, paternalism, accountability

	1008	What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, multiple surgeries, risk evaluation, stigma , frustration, futility, paternalism
	1008	Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an	liver vs heart, cost, deservingness, medical model, relapse, frustration, paternalism, reinfection

		alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	
	1008	And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, post-operation care, liability of medical professionals, follow-up care, accountability, paternalism
	1008	What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	post-operation care, liability of medical professionals, follow-up care, accountability, paternalism, insurance
	1019	would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about,	pain management, timing of SUD tx, post-operation care, discussing addiction, paternalism

		uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	perception of risk in PWID, stigma , paternalism, frustration, futility
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness

		gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	
	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, post-operation care, paternalism, commitment to recovery, follow-up care, timing of SUD tx
	1006	I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile?	lack of knowledge, stigma , perception of risk in PWID, frustration, patient story, paternalism

		You're naïve to say the least." They are naïve, they're young.	
	1002	Interviewer: Does your patient's commitment to getting their substance use disorder treated impact your surgical decisions? Respondent: No. Interviewer: So if someone did not want to stop using drugs or get treatment – Respondent: Oh, you mean – okay. Yeah, I think that will change it, kind of. Interviewer: How much do you consider it? Imagine if someone is not interested at all in stopping drug use. Does that make you less likely to perform surgery? Respondent: Yes.	commitment to recovery, paternalism, deservingness
	1017	I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us	deservingness, stigma , paternalism, perception of risk in PWID, futility, frustration, liability of medical professionals
	1003	However, if someone is critically ill, and time is of the essence, then we will move ahead and do surgery regardless of whether or not I think they're going to be able to be successfully treated from the addiction standpoint. On the other hand, if a patient is not critically sick, and they're having a medical indication for surgery, however if they're not in a program, where I think they're going to be successful in avoiding use of drugs again, I may postpone surgery until they get into a rehab program. So, once we do the surgery, I know they'll be on the road to recovery. But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	relapse, risk evaluation, timing of SUD tx, commitment to recovery, paternalism, protocol
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy

		serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	
	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone. Interviewer: Interesting. Okay. Respondent: A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	second chance, liver vs heart, save lives, support for patient, paternalism, accountability, commitment to recovery

	1003	f it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery. So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	relapse, stigma , paternalism, futility, commitment to recovery, multiple surgeries, deservingness
	1009	Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no	accountability, discussing addiction, protocol, futility, medical model, paternalism, patient story

		judgment, here, “We’re going to do this operation regardless of why you need the operation but this isn’t something that’s going to happen over and over again.” So we set that out and I document that in my notes the first time around. Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I’m speaking with the patient I just say if you use any sort of, you know, if you’re injecting something, then we’re not going to operate on you. I have had patients that don’t inject drugs. I’ve had patients that have disorders where they’ll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on him twice and it came out that he doesn't care about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn’t have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1011	I do feel that these patients are in a very vulnerable situation, they have a lot of stresses going on in their life, and there is a lot that they have to figure out, especially someone who comes in who was actively using drugs at the time of their intervention, and the idea that they are going to go through this big operation, they are going to clean themselves up right away is sometimes too much to ask of them. It is not uncommon, I think for us to see some relapses before the patient eventually can fully quit.	relapse, empathy, paternalism, support for patient
	1011	And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little anticoagulation and the valve becomes thrombosed, that’s a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure	risk evaluation, multiple surgeries, medical model, protocol, deservingness, paternalism, valve preference

		themselves then that has a problem as well. So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	
	1011	f you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant. The reason it is different though is that we still operate on them, you may ask the question well if that is how you feel then why do you still operate on these patients because you know no one would get a liver transplant if they are still drinking alcohol because the resources are different, there is only a finite number of livers and they really are in a position where they can put a hard stop to it and say no we are not going to do this because somebody else can get that liver. In our situation we don't make that an active hard stop for us because we are not limited by the amount of valves that we have or other things we have so we would like to give these patients a chance, we want to give them a chance we want to give them a shot at getting better so sometimes we do accept less than ideal situations.	liver vs heart, multiple surgeries, save lives, commitment to recovery, lack of resources, paternalism
	1011	maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the time. It's not like these patients are going back to their families, their grandparents, or an aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own	lack of resources, administration, empathy, frustration, support for patient, PICC line risk, paternalism

		police I think is a little too much to ask of them.	
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility
	1015	Have you ever experienced conflict within your team or other staff members about this… S: No. Because at the end of the day, it's whatever you want to do as, you know, the surgeon treating the patient, so, no one is going to fault you, um, so… I'll leave it at that.	disagreements (professional), accountability, paternalism
	1001	will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of reinfection will be coming, and that would be even wors	commitment to recovery, accountability, discussing addiction, paternalism, reinfection, priorities, risk evaluation
	1001	Rehab? I don't know. It all depends. You know, every place is different. We have good experiences and bad experiences with rehab. So I cannot really comment. I know only even though this is not 100 percent, we can manage the patient in the hospital. We can provide the best care they can get, but I just cannot comment on if they can go to rehab. Theoretically they can, if the rehab place is a fair facility.	post-operation care, SUD treatment, risk evaluation, follow-up care, paternalism
	1004	I: how do you discuss drug use with a patient like this? Like what questions do you ask? What are some of like, the terms that you would use to discuss her addiction? R: Are you willing to stop using? Promise me that you'll stop using, that you'll do rehab. And if they come back, I wouldn't do it. That's pretty much what I say to patients around their addiction.	discussing addiction, commitment to recovery, patient consent, paternalism, contract

	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	paternalism, deservingness, accountability, commitment to recovery, discussing addiction, frustration, futility, multiple surgeries, second chance, stigma
	1008	nterviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance.	SUD treatment, paternalism, deservingness
	1008	Interviewer: Yeah. What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	societal issue, insurance, paternalism, commitment to recovery, relapse
	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues

	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, commitment to recovery, contract, accountability, paternalism, deservingness
	1018	atie, in our vignette, how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	paternalism, multidisciplinary group, post-operation care, save lives, follow-up care, timing of SUD tx
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	deservingness, stigma , paternalism, frustration, futility, multidisciplinary group
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, paternalism, tx compared to broader, stigma
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep	tx compared to broader, deservingness, liver vs heart, futility, paternalism

		getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	
	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to	contract, collaboration with addiction medicine, paternalism, multiple surgeries, tx compared to colleagues, support for patient, frustration

		the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	perception of risk in PWID, stigma , paternalism, frustration, futility
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness

	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation
	1012	So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them	withdrawal management, pain management, collaboration with addiction medicine, multidisciplinary group, disagreements (professional), paternalism, defensive

		hemodynamically unstable and it's just not safe.	
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	tx compared to colleagues, frustration, paternalism, multiple surgeries, contract
	1014	So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very calcified, taking them off, and putting it, is it doable, absolutely, but is it fraught with problems, absolutely. All the scar tissue comes in, you know, on top of the scar tissue that comes in from regular operations. So, clearly, it gets worse.	paternalism, tx compared to colleagues, multiple surgeries, risk evaluation, seriousness

	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now. What questions do you ask? Charlie, what drugs were you using? When was the last time you used it? Have you tried quitting in the past? And then I ask them what their social support system is because I think that is what is going to prevent them from using drugs again.	discussing addiction, accountability, paternalism, SUD treatment
	1014	So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very calcified, taking them off, and putting it, is it doable, absolutely, but is it fraught with problems, absolutely. All the scar tissue comes in, you know, on top of the scar tissue that comes in from regular operations. So, clearly, it gets worse.	paternalism, tx compared to colleagues, multiple surgeries, risk evaluation, seriousness

	1005	Interviewer: Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Yes. Interviewer: Can you say why or why not? Interviewee: I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	commitment to recovery, deservingness, paternalism, accountability, cost
	1014	I: Right. Um, ok, great. So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very calcified, taking them off, and putting it, is it doable, absolutely, but is it fraught with problems, absolutely. All the scar tissue comes in, you know, on top of the scar tissue that comes in from regular operations. So, clearly, it gets worse.	risk evaluation, seriousness, paternalism, tx compared to colleagues, multiple surgeries
	1009	I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again.	discussing addiction, patient consent, accountability, deservingness, multiple surgeries, paternalism, reinfection, futility

		And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around.	
	1009	urgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things.	commitment to recovery, accountability, deservingness, paternalism
patient consent			
	1019	at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on	pregnancy, patient consent, save lives, seriousness, priorities

		the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't.	
	1019	Would you… would your approach change if you learned that when Katey presented with prosthetic valve endocarditis was pregnant? Injected cocaine but did not inject heroin? Or if it was five years since her last use drugs? Um, probably not. Um… you know… at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	pregnancy, patient consent, save lives, priorities, seriousness

	1008	Have you ever discussed the drug use with a patient like this? You know, like what kinds of questions would you ask? Respondent: Oh, every case. Interviewer: Okay. Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	pre-operation care, patient consent, discussing addiction, deservingness, paternalism, accountability
	1019	Would you… would your approach change if you learned that when Katey presented with prosthetic valve endocarditis was pregnant? Injected cocaine but did not inject heroin? Or if it was five years since her last use drugs? Um, probably not. Um… you know… at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	pregnancy, patient consent, save lives, priorities, seriousness
	1016	: And how did you approach the case? S: Um, in that case, um, the patient was brought to the operating room and had, um, um, reconstruction of their root and valve. I	priorities, patient consent, discussing addiction

		did have an extensive preoperative conversation with the family members, um, and, um, the patient, regarding the risks of the surgery, um, and that the importance of refraining from drugs afterwards.	
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	discussing addiction, support for patient, patient consent, patient story, commitment to recovery, empathy
	1002	Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result.	risk evaluation, priorities, patient consent, futility, liability of medical professionals, seriousness
	1002	Interviewer: Okay, and what kind of questions do you ask? Respondent: What kind of questions? The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	discussing addiction, lack of resources, patient consent, support for patient
	1007	Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general?	discussing addiction, patient consent, support for patient, follow-up care, SUD treatment

		Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	
	1017	Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway.	discussing addiction, changes over time, commitment to recovery, patient consent, collaboration with addiction medicine, protocol, deservingness
	1017	There is the case of BLANK BLANK. So BLANK BLANK was a 30-year-old heroin user from the streets of BLANK who basically had endocarditis. I find him a very charming guy, so I did one valve replacement. About, oh, I don't know, 6 months later, he comes back and he now has still been using, and he promised me he'd stop. So I reoperated on him and did a homograft root replacement on him. Did great, actually. Six month later, he comes back and he's been using again, and now he's developed a big pseudoaneusrym that is a rupture of, uh, where we reconstructed him, so there's this big aneurysm. And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding. Recovered, and literally six months later I got a call that he had now infected his homograft because he's still using. So, I said, we're not going to do anything. I saw him on the OR schedule the next day, by	multiple surgeries, contract, perception of risk in PWID, relapse, priorities, second chance, deservingness, patient consent

		vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point. Um, so that's my, my case that I will never forget about recidivism in drug users.	
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy
	1003	If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive. So then, you could have a live patient to have this discussion with. So, first and foremost, is to save the patient's life, so I'd recom – I would put the patient on a schedule, no matter what the social situation is, because I mean, we're here to help people and even you know, if she doesn't have surgery, she's going to die. So, that would be my approach.	patient consent, save lives, empathy, discussing addiction
	1003	What are some of like, the terms that you would use to discuss her addiction? Respondent: Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I	commitment to recovery, discussing addiction, patient consent, patient story, follow-up care

		would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake.	
	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now.	discussing addiction, patient consent, futility, commitment to recovery
	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent

	1007	Speaker 1: Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, follow-up care, patient consent, post-operation care, risk evaluation, societal issue
	1001	Respondent: Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, risk evaluation, discussing addiction, patient consent, liability of medical professionals, knowledge, contract
	1001	I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	multiple surgeries, patient consent, deservingness, relapse, multidisciplinary group, reinfection, follow-up care
	1004	I: how do you discuss drug use with a patient like this? Like what questions do you ask? What are some of like, the terms that you would use to discuss her addiction? R: Are you willing to stop using? Promise me that you'll stop using, that you'll do rehab. And if they come back, I wouldn't do it. That's pretty much what I say to patients around their addiction.	discussing addiction, commitment to recovery, patient consent, paternalism, contract

	1004	I: How should this patient (Katie's) OUD be treated? R: No idea, if she has the operation, she's agreed to the contract to enter treatment. I don't know anything about medications or psychotherapy.	lack of knowledge, SUD treatment, patient consent, contract
	1005	make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	patient consent
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes.	discussing addiction, commitment to recovery, accountability, frustration, futility, patient consent, contract
	1005	make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	patient consent
	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent

		inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	
	1016	Um, in that case, um, the patient was brought to the operating room and had, um, um, reconstruction of their root and valve. I did have an extensive preoperative conversation with the family members, um, and, um, the patient, regarding the risks of the surgery, um, and that the importance of refraining from drugs afterwards. I: Looking back, is there anything different that you would change about your approach? S: Uh, in that particular case, um, no. The outcome was good.	patient consent, discussing addiction, priorities
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes. Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging.	commitment to recovery, discussing addiction, frustration, accountability, patient consent, contract

	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not the heart, it is one of their problems, it is not their main problem. That's their problem.	patient consent, contract, second chance, empathy, patient story
	1014	When…there's a guy in BLANK, in BLANK, he used to make his patients sign a contract with them, that if you do this once, and if they recur, he would never do it again. And I've found that, kind of, I don't want to say, ludicrous, but, um, I didn't, that is not an idea that I find any affinity for. I mean, a contract, really? Do you think those guys are in a good mental state to able to abide to, you know, words written on a piece of paper? I just don't get it. I don't understand it. They're diseased. Their problem is not their heart. Right now, it is, but overall problem is in their brains.	contract, patient consent
	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of	discussing addiction, SUD treatment, collaboration with addiction medicine, commitment to recovery, empathy, follow-up care, patient consent

		where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards.	
	1005	Interviewer: Looking back, I guess on similar situations, are there any things that you would change about approaches you've taken to these types of patients before? Interviewee: I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration, patient consent
	1005	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: Yes. Interviewer: If so, what questions did you ask, what are some of the terms you use to discuss addiction? Interviewee: I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation. Interviewer: Have you heard of the term opioid use disorder or used it when talking	discussing addiction, SUD treatment, commitment to recovery, patient consent, priorities, risk evaluation

		with a patient? Interviewee: Yes, I've heard of that term, but I haven't used that term with a patient.	
	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not the heart, it is one of their problems, it is not their main problem. That's their problem.	contract, reinfection, second chance, empathy, patient story, patient consent
	1014	When…there's a guy in BLANK, in BLANK, he used to make his patients sign a contract with them, that if you do this once, and if they recur, he would never do it again. And I've found that, kind of, I don't want to say, ludicrous, but, um, I didn't, that is not an idea that I find any affinity for. I mean, a contract, really? Do you think those guys are in a good mental state to able to abide to, you know, words written on a piece of paper? I just don't get it. I don't understand it. They're diseased. Their problem is not their heart. Right now, it is, but overall problem is in their brains.	patient consent, contract
	1009	How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused	patient consent, discussing addiction, knowledge, pre-operation care, protocol

		some problem and that they're going to need surgery to fix it.	
	1009	I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around.	discussing addiction, patient consent, accountability, deservingness, multiple surgeries, paternalism, reinfection, futility
	1009	The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	commitment to recovery, discussing addiction, patient consent, pre-operation care, futility, tx compared to colleagues
patient story			

	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, futility, frustration, deservingness, redemption (secondary)
	1009	I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	patient story
	1009	I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	patient story, redemption (secondary)

	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation
	1010	What are your first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very	priorities, patient story, empathy, discussing addiction

		young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see how they ended up down that path.	
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	support for patient, patient story, discussing addiction, stigma , societal issue, empathy

	1008	nterviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	priorities, risk evaluation, pre-operation care, save lives, time constraints, patient story
	1018	I have had friends, good friends suffer this, none with endocarditis, but I have seen what it did to their lives and maybe that is why I have a slightly different perspective on it. No one in my family has had that or endocarditis, so that is the personal side of it.	patient story, societal issue, empathy
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they’re not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they’ve been using, whether they’ve been in a rehab program previously, what their social situation is, whether they knew that valve infections were	discussing addiction, support for patient, patient consent, patient story, commitment to recovery, empathy

		a risk using intravenous heroin, what their plans were for rehabilitation.	
	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID

		treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	
	1006	I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young.	lack of knowledge, stigma , perception of risk in PWID, frustration, patient story, paternalism
	1002	Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the surgery? So yeah, those are the first things we come up with.	support for patient, risk evaluation, priorities, futility, patient story
	1003	What are some of like, the terms that you would use to discuss her addiction? Respondent: Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long	commitment to recovery, discussing addiction, patient consent, patient story, follow-up care

		they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake.	
	1003	And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem.	SES, commitment to recovery, support for patient, patient story, empathy
	1009	Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the	accountability, discussing addiction, protocol, futility, medical model, paternalism, patient story

		operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around. Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I just say if you use any sort of, you know, if you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on him twice and it came out that he doesn't care about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn't have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1009	I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	patient story
	1009	I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	patient story
	1007	Speaker 1: Okay. Thank you. So how should these patients with opioid use disorder, so Katie, how should she be treated and when do you think you would be appropriate for her to be treated? Speaker 2: Treated surgically or … Speaker 1: Treated surgically Speaker 2: So surgically. Um, she's toward the end of the spectrum that needs surgery very soon because of her aortic insufficiency, which is in the acute phase, its poorly tolerated. So she's somebody that would probably need	patient story, pre-operation care, societal issue

		surgery sooner than later, would need some medical optimization in an ICU setting. Um, probably would need some reformed social addiction medicine engagement early on. But it's, it's not going to do much at this point and it's more for the recovery and future.	
	1007	So you operate on Katie from the first vignette and she does well, she's linked to a Methadone maintenance program. About one year later, she's back to the hospital and she has prosthetic valve endocarditis. So have you seen prosthetic valve endocarditis in people who inject drugs? Speaker 2: Yes. Speaker 1: Okay. Any specific cases come to your mind? Speaker 2: Too many there. Speaker 1: Tell me your thoughts about management decisions for these relapse cases. Speaker 2: Well, I mean we manage them the same as any other patient. You um, you know, assessing the risk, the benefit, surgery, support system. Speaker 1: Okay. So does it impact your decision to operate if the endocarditis is related to drug use? Speaker 2: Yeah, everything impacts our decision to operate.	patient story, relapse, pre-operation care, support for patient
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment

	1008	Interviewer: Okay. Good to know. Okay. So, now I have a clinical vignette. So, in this situation, Katie is a 34-year-old woman who uses heroin via injection drug use and she has staph aureus bacteremia and aortic valve endocarditis. At this point, she's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So, first, like have you had experience caring for a patient in a similar situation? Respondent: Oh, yeah. Interviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	patient story, pre-operation care, risk evaluation, save lives
	1018	And to close, is there anything I haven't asked you about today that you would like to say? I have had friends, good friends suffer this, none with endocarditis, but I have seen what it did to their lives and maybe that is why I have	patient story, empathy, support for patient, societal issue

		a slightly different perspective on it. No one in my family has had that or endocarditis, so that is the personal side of it.	
	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive
	1018	I have had friends, good friends suffer this, none with endocarditis, but I have seen what it did to their lives and maybe that is why I have a slightly different perspective on it. No one in my family has had that or endocarditis, so that is the personal side of it.	patient story, societal issue, empathy
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment

	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	discussing addiction, commitment to recovery, follow-up care, frustration, patient story, priorities, risk evaluation, societal issue, SUD treatment
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries

		another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation

		you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	
	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient.	patient story, commitment to recovery, futility, frustration, deservingness

		You can keep that or delete that I don't care. I just wanted to get that off my chest.	
	1010	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Multiple times. How did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later. Looking back to prior cases like this is there anything you would change about your approach in hindsight? No.	patient story, protocol, second chance, risk evaluation, save lives
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they	discussing addiction, empathy, patient story, stigma , societal issue

		want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	
	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not the heart, it is one of their problems, it is not their main problem. That's their problem.	patient consent, contract, second chance, empathy, patient story
	1014	S: Yeah, I remember, I did not operate on them the first time around, one of, one of our my partners did. And, you know, and sometimes, those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her	patient story, frustration, futility, multiple surgeries, seriousness

		through a big operation and go back to square one down the road? When is enough? When enough is enough?	
	1011	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency, and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Yes, today. The reason I was delayed was somebody was in an emergency situation, actively using drugs and has an aortic valve infection and is in some semblance of cardiogenic shock. We don't know if that patient has an aortic root abscess or not, but this is not, you know, an infrequent occurrence. How did you approach that case? Or how have you approached these types of cases? So, like I said the first thing is how do we care for these patients medically. Try to optimize them from there shock perspective and then you have got to figure out you know what operation they need and what is the optimum timing for that operation. So, no different than what would be anybody else with an aortic root abscess without IV drug use.	patient story, risk evaluation

	1011	You operate on Katie and she does well. She is linked into a methadone maintenance program. About 1 year later she is back in the hospital and she has prosthetic valve endocarditis. Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. Any specific cases come to mind? A patient very similar to her in age who had a tricuspid valve replacement and came back with tricuspid valve endocarditis. Tell me your thoughts about management decisions in these cases It becomes trickier because at that point you are not relying on future projections, it's not what, like the conversation you had with the patient the first time around. Going back to your previous question about you know their commitment to quit injecting drugs at this point they have a track record so my first question would be, when Katie comes back is that was, she injecting drugs again since the time of her previous operation and I think that is the big question. Because patients can get endocarditis without injecting drugs, I mean that's not you know one population, so what I would say is that if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse. And you treat her like you would. Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody	patient story, risk evaluation, commitment to recovery, protocol, deservingness

		breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	
	1002	The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	discussing addiction, lack of resources, patient story
	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not the heart, it is one of their problems, it is not their main problem. That's their problem.	contract, reinfection, second chance, empathy, patient story, patient consent

	1014	those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her through a big operation and go back to square one down the road? When is enough? When enough is enough?	seriousness, futility, frustration, multiple surgeries, patient story
	1009	I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical	tx compared to broader, multiple surgeries, futility, tx compared to colleagues, support for surgeons, reinfection, protocol, frustration, patient story

		doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	
	1009	So for post-operative care, thinking about these options, if you'd give someone a pick line and send them home, give them a pick line and have them stay in the hospital, or give them a PICC line and send them to a nursing facility? Safest option, best for the patient? Surgeon: For us, it's not by choice. No visiting nurse group in the state will accept a patient with the history of intravenous drug abuse who has a PICC line. So we can't send them home with a PICC line. So it's either they go to a nursing home or they stay in the hospital. If they're totally stable, to me it doesn't matter where they go. As long as they complete their course of antibiotics. You know, it's frustrating when these patients, again, some of whom get the PICC line. I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	PICC line risk, frustration, follow-up care, lack of resources, protocol, patient story
	1010	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Multiple times. How did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early	patient story, protocol, second chance, prioritization (secondary)

		on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later. Looking back to prior cases like this is there anything you would change about your approach in hindsight? No.	
post operation care			
		Interviewer: Tell me about your experience with managing pain in this population? Interviewee: They take a lot of pain medicine. It's a little challenging because it's hard to draw the line between what's legitimate postoperative discomfort and what is drug seeking behavior. We try and stay away from the drugs like Dilaudid. Interviewer: What works to treat their pain? Interviewee: I try and use nonopioid medications, but otherwise just titrate the dose of standard opioids. Interviewer: What has not worked? Interviewee: What has not worked for their pain? Interviewer: Mm-hmm. Interviewee: Gosh, in early postop, expecting them to get by on acetaminophen and Motrin is unrealistic 'cause their sternotomies are painful, but I [unintelligible 13:30] hasn't worked, give 'em enough opiates it feels okay. Then there are the other drugs, Toradol and things like that, but once they're out a few days it'll change over to that. Interviewer: Do you consult another service for pain management?	
	1006	Interviewee: Not usually.	pain management, follow-up care, post-operation care

	1006	Interviewer: All right, so this next little section gives us a couple of different options for IV antibiotic therapies. The question is what do you think about these options, what do you think a PICC line and going home? Interviewee: Negatory, I don't do that. Interviewer: What about a PICC line and staying in the hospital? Interviewee: That's what we do with a lot of patients. Interviewer: PICC line and going to a nursing facility? Interviewee: Depends on the nursing facility. It's amazing, they actually have overdoses on the addiction medicine floor in the hospital, it's amazing. If it's a nursing home that doesn't have a actual addiction medicine specialization I would not do it. Interviewer: I think you may have been answering this already as well, what is the safest option? Interviewee: In hospital therapy, if they require IV therapy, and ideally you'd have a oral drug that the organism is susceptible to and they can send 'em home on pills.	PICC line risk, follow-up care, post-operation care
	1010	t does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	age, accountability, commitment to recovery, follow-up care, second chance, paternalism, discussing addiction, post-operation care

	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job	discussing addiction, post-operation care, mechanical problem, lack of knowledge, SUD treatment
	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things.	timing of SUD tx, lack of knowledge, risk evaluation, perception of risk in PWID, follow-up care, post-operation care

	1019	So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would… I would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, post-operation care, SUD treatment, discussing addiction, follow-up care, deservingness, perception of risk in PWID, paternalism
	1019	s there any role of medications or psychotherapy in their treatment and do you think that it should be combined or exist alone? Well again, you're… you're starting to ask me questions Right about the postoperative rehab process and I'm not very knowledgeable on it but I would imagine that a combination of pharmacotherapy and psychotherapy would be the best approach to… to the treatment of opioid addiction.	SUD treatment, lack of knowledge, post-operation care

	1019	Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	pain management, support for patient, risk evaluation, protocol, post-operation care, empathy, lack of knowledge
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem
	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK	timing of SUD tx, follow-up care, perception of risk in PWID, post-operation care

		I think it's actually potentially dangerous. It actually could make the postop care more challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would…	
	1019	would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, timing of SUD tx, post-operation care, discussing addiction, paternalism
	1019	Is there any role of medications or psychotherapy in their treatment and do you think that it should be combined or exist alone? Well again, you're… you're starting to ask me questions Right about the postoperative rehab process and I'm not very knowledgeable on it but I would imagine that a combination of pharmacotherapy and psychotherapy would be the best approach to… to the treatment of opioid addiction.	SUD treatment, post-operation care, lack of knowledge

	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care
	1008	what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six	risk evaluation, deservingness, multiple surgeries, post-operation care, relapse, reinfection, commitment to recovery, follow-up care, frustration, futility

		weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	
	1008	: Does it impact the kind of valve that you would give them the first time? Respondent: Well, people that inject drugs tend not to live as long as people that don't. So, I would tend to put more tissue valves in. I don't think there's a difference in, you know, re-infection. But I think I would put more tissue valves in these people, which is a reason they're going to be on Warfarin, anyway. Then I would put them in a mechanical valve if they're young.	age, perception of risk in PWID, reinfection, post-operation care, relapse, valve preference
	1008	And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, post-operation care, liability of medical professionals, follow-up care, accountability, paternalism
	1008	What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you	post-operation care, liability of medical professionals, follow-up care, accountability, paternalism, insurance

		know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem
	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would…	timing of SUD tx, follow-up care, perception of risk in PWID, post-operation care
	1019	would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it	pain management, timing of SUD tx, post-operation care, discussing addiction, paternalism

		causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	
	1019	Is there any role of medications or psychotherapy in their treatment and do you think that it should be combined or exist alone? Well again, you're… you're starting to ask me questions Right about the postoperative rehab process and I'm not very knowledgeable on it but I would imagine that a combination of pharmacotherapy and psychotherapy would be the best approach to… to the treatment of opioid addiction.	SUD treatment, post-operation care, lack of knowledge
	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care

		opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams	multidisciplinary group, pain management, lack of knowledge, support for surgeons, post-operation care
	1016	I: Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them	support for surgeons, pain management, follow-up care, post-operation care, multidisciplinary group

		back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	
	1006	nterviewer: Do people who inject drugs have a different operative and postoperative mortality? Interviewee: Yes. Interviewer: What complications do you worry about? Interviewee: Recidivism.	perception of risk in PWID, relapse, reinfection, post-operation care
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, post-operation care, paternalism, commitment to recovery, follow-up care, timing of SUD tx
	1006	Interviewer: Tell me about your experience with managing pain in this population? Interviewee: They take a lot of pain medicine. It's a little challenging because it's hard to draw the line between what's legitimate postoperative discomfort and what is drug seeking behavior. We try and stay away from the drugs like Dilaudid. Interviewer: What works to treat their pain? Interviewee: I try and use nonopioid medications, but otherwise just titrate the dose of standard opioids. Interviewer: What has not worked? Interviewee: What has not worked for their pain? Interviewer: Mm-hmm. Interviewee: Gosh, in early postop, expecting them to get by on acetaminophen and Motrin	pain management, post-operation care, perception of risk in PWID, follow-up care

		is unrealistic 'cause their sternotomies are painful, but I [unintelligible 13:30] hasn't worked, give 'em enough opiates it feels okay. Then there are the other drugs, Toradol and things like that, but once they're out a few days it'll change over to that. Interviewer: Do you consult another service for pain management? Interviewee: Not usually.	
	1006	Interviewer: All right, so this next little section gives us a couple of different options for IV antibiotic therapies. The question is what do you think about these options, what do you think a PICC line and going home? Interviewee: Negatory, I don't do that. Interviewer: What about a PICC line and staying in the hospital? Interviewee: That's what we do with a lot of patients. Interviewer: PICC line and going to a nursing facility? Interviewee: Depends on the nursing facility. It's amazing, they actually have overdoses on the addiction medicine floor in the hospital, it's amazing. If it's a nursing home that doesn't have a actual addiction medicine specialization I would not do it.	post-operation care, PICC line risk, frustration, follow-up care
	1006	Interviewer: I think you may have been answering this already as well, what is the safest option? Interviewee: In hospital therapy, if they require IV therapy, and ideally you'd have a oral drug that the organism is susceptible to and they can send 'em home on pills.	post-operation care, PICC line risk, follow-up care

		Interviewer: Any specific things that help you choose such as housing, insurance, job status, childcare? Interviewee: I'd make every effort to do it as an inpatient.	
	1002	Interviewer: Do people who inject drugs have different operative and postoperative mortality and complications? Respondent: I think so. Interviewer: Does it impact what type of valve you would use? Does that impact the complications or mortality? Respondent: For [IE], you mean? Interviewer: Yes. Respondent: I don't think so, no.	risk evaluation, valve preference, post-operation care
	1002	nterviewer: Can you tell me about your experience managing pain in this population? How do you manage pain for your patients in this scenario? Respondent: No opioids for most of the time. Interviewer: Has there ever been anything that has not worked well for pain management? Respondent: With other – the young patients are more and more – those patients have more pain than the elderly patients. So sometimes it's tough, but yeah, you just need to – I don't like to use opioids for these patient populations.	pain management, post-operation care, age, stigma
	1007	Um, she's toward the end of the spectrum that needs surgery very soon because of her aortic insufficiency, which is in the acute phase, its poorly tolerated. So she's somebody that would probably need surgery sooner than later, would need some medical optimization in an ICU setting. Um, probably would need some reformed social addiction medicine engagement early on. But it's, it's not going to do much at this point and it's more for the recovery and future.	pre-operation care, post-operation care, follow-up care

	1007	PICC line and go home? PICC line and stay in the hospital and PICC line and go to the nursery facility. Speaker 2: What do I think in which way? Speaker 1: It's an open ended question. We just want to know your, your perspectives on them Speaker 2: I think the unwritten standard today is that most people stay in house because of fear of liability. Speaker 1: Okay Speaker 2: Whether that's justified or not, that is kind of the most popular answer. Speaker 1: Okay, so what's the safest option? What would you think is the safest option and what's the best for this patient. Speaker 2: To stay in house.	post-operation care, priorities, liability of medical professionals, PICC line risk, follow-up care
	1017	Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, administration, cost, perception of risk in PWID
	1017	If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, is it worth taking the patient to the OR? (Repeated) S: No. I: Ok. And why not? S: Well, because it is not about that risk. It is about, um, you know, their long-term risk.	risk evaluation, post-operation care, liability of medical professionals
	1013	Do they have different complications? Uh, so they may have complications related to liver disease, so uh, its not infrequent for them also to have hepatitis C so they may have some element of cirrhosis associated with that, obviously, peri-operative pain management is	screening for ID, pain management, post-operation care

		more challenging but other than that I don't think so.	
	1003	what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	relapse, risk evaluation, data, reinfection, age, follow-up care, post-operation care
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	support for patient, post-operation care, SUD treatment, save lives, follow-up care, discussing addiction, multidisciplinary group
	1003	we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	multidisciplinary group, collaboration with addiction medicine, pain management, post-operation care, timing of SUD tx

	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	pain management, follow-up care, post-operation care, liability of medical professionals, collaboration with addiction medicine, changes over time
	1003	nterviewer: You know, what are your thoughts on management decisions in those cases? Respondent: Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously.	accountability, liability of medical professionals, deservingness, relapse, follow-up care, post-operation care
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would	post-operation care, PICC line risk, futility, frustration, follow-up care, perception of risk in PWID, desired changes, protocol, support for patient

		prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	
	1003	Interviewer: Okay. Why not home? Respondent: I think unless a parent is there 24/seven, they're liable to have people come to the house and - Interviewer: Mm-hmm. Respondent: - friends, and potentially use drugs to their PICC line.	perception of risk in PWID, post-operation care, PICC line risk
	1009	Interviewer: Mortality, is that something, or does it impact what type of valve you might give them? Surgeon: Mortality from the sense of the operation? Interviewer: Mm-hmm. Surgeon: It's something you think about. You always want to offer and operation where you think there's a mortality benefit, that they have a better chance of living with the operation than without. Sometimes, you know, questions of futility come into play but that comes into play later rather than the initial evaluation. Interviewer: Can you say more about the futility piece? Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if	futility, post-operation care, priorities, risk evaluation

		you fix the heart, they're never going to return to a quality of life. Other times there are complications that have arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	
	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term,	multidisciplinary group, collaboration with addiction medicine, support for surgeons, accountability, frustration, futility, lack of resources, post-operation care

		there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be	support for surgeons, administration, tx compared to broader, accountability, desired changes, follow-up care, frustration, lack of resources, post-operation care, multidisciplinary group

		managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	
	1011	How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're	lack of resources, accountability, post-operation care, data, follow-up care, support for patient

		discharged, you know, once they are back on the street.	
	1017	I: Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, perception of risk in PWID, administration, cost
	1017	I: If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, is it worth taking the patient to the OR? (Repeated) S: No. I: Ok. And why not? S: Well, because it is not about that risk. It is about, um, you know, their long-term risk.	risk evaluation, post-operation care, liability of medical professionals
	1013	o people who inject drugs have different operative and post-operative mortality? So, their typically their perioperative mortality is actually lower than most inpatients we see and the reason for that is that they are very often younger so they have fewer comorbidities um and the investigations we have done here suggest that their long-term mortality may well be worse although the challenge always with people who inject drugs is getting adequate follow up so many get lost to follow up.	age, follow-up care, post-operation care

	1007	Speaker 1: Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, follow-up care, patient consent, post-operation care, risk evaluation, societal issue
	1001	Do people who inject drugs have different operative and postoperative mortality? Are there any other complications? Respondent: It depends, you know? It depends on I think the reason for surgery. I mean, if that is related to the infection itself, I think the postoperative – the infection and recurrence of the infection will be much higher. On the other side, there is always then noncompliance with those patients potentially that can increase the postoperative risk, as well. You know, with the potential noncompliance, their recovery can be prolonged and would increase difficulty in the care of those patients.	perception of risk in PWID, post-operation care, follow-up care
	1001	Interviewer: For this patient, when do you think this treatment should be started? Respondent: I would say start it right away, because they should be evaluated even in preop. Then they can be carefully monitored. You know, theoretically I would want those patients to be closely monitored for the first few months after surgery, and that way there's no chance for them to get back into the drug use – because the risk for reinfection within the first few months is very, very high.	timing of SUD tx, pre-operation care, relapse, accountability, follow-up care, post-operation care, perception of risk in PWID
	1001	Respondent: We have [our OTNs] – you know, the [protocol] – but if we believe if somebody postoperative is in pain or (their) narcotics use is out of norm, then we would consult a specialist. But first we want to – you know, a medical reason – if that can be explained. If there's really no medical reason for excessive or intensive pain, then we would investigate.	pain management, protocol, post-operation care, multidisciplinary group

	1001	Respondent: It's tough. It's difficult. I think there is no exception for those patients who require more narcotics or complain – you know, more pain than a regular patient. That's just our [experience]. Certainly it is difficult to take care of those patients, postoperative.	pain management, post-operation care, frustration
	1001	nterviewer: Okay, and what has not worked well for managing pain in this population that you've seen with patients? Respondent: Yeah, because all the narcotics are associated with side effects, so there's a limit to use. So overuse causes problems, can delay their progress from recovery [overlapping noise] even affect the hemodynamics. Typically after a surgery, after three or four days the pain should be minimal. That is usually the time for patient to resume some degree of their activity at baseline, but our experience is the [possibility] of recover for the drug use patients is a little bit delayed. It's more or less related to the overuse of narcotics postop.	pain management, post-operation care, perception of risk in PWID, follow-up care
	1001	Rehab? I don't know. It all depends. You know, every place is different. We have good experiences and bad experiences with rehab. So I cannot really comment. I know only even though this is not 100 percent, we can manage the patient in the hospital. We can provide the best care they can get, but I just cannot comment on if they can go to rehab. Theoretically they can, if the rehab place is a fair facility.	post-operation care, SUD treatment, risk evaluation, follow-up care, paternalism
	1004	I: What about after the surgery? Would a PICC line and sending a patient home be fine? Yes, that's the best way to get antibiotics. There's no point in keeping them in the hospital, we can't afford that. Though if they wanted to go to a nursing facility afterwards, I'd have no objection to that. The best option for the patient would be whatever Dustin recommends, in terms of relapse risk.	post-operation care, collaboration with addiction medicine, relapse, PICC line risk, cost
	1005	I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	pre-operation care, post-operation care, risk evaluation
	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration

		expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	
	1005	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, discussing addiction, frustration, post-operation care
	1005	Interviewee: A patient who is actively using when they came in the hospital, I feel should not be discharged from the hospital with any IV lines, or a nursing home with any IV lines. We usually recommend for those patients to stay in the hospital with their PICC line until they complete their antibiotics, and then the PICC line comes out on discharge home or to a nursing home.	post-operation care, PICC line risk
	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really	commitment to recovery, deservingness, follow-up care, frustration, futility, post-operation care, reinfection, relapse, risk evaluation

		complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	
	1008	Interviewer: Does it impact the kind of valve that you would give them the first time? Respondent: Well, people that inject drugs tend not to live as long as people that don't. So, I would tend to put more tissue valves in. I don't think there's a difference in, you know, re-infection. But I think I would put more tissue valves in these people, which is a reason they're going to be on Warfarin, anyway. Then I would put them in a mechanical valve if they're young.	follow-up care, multiple surgeries, post-operation care, reinfection, relapse, risk evaluation
	1008	Interviewer: Okay. Cool. And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, accountability, commitment to recovery, futility, post-operation care, priorities
	1018	atie, in our vignette, how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	paternalism, multidisciplinary group, post-operation care, save lives, follow-up care, timing of SUD tx

	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams Tell me about your experience with managing withdrawal in this population. It's the same, you call the pain team to ask them for their help.	pain management, lack of knowledge, support for surgeons, post-operation care, multidisciplinary group
	1012	Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging. What works or doesn't work to treat their pain in your experience? We usually get a pain consult and let them help us manage it and I think those are you know when you are giving opiates to people with an opiate addiction it's not, you know, so we try all the non-opiate medications but they don't tend to be very effective either.	pain management, post-operation care, liability of medical professionals, stigma
	1012	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So PICC line and go home is never and option because that basically gives them a mainline to use drugs so that is never an option. And there is no nursing facility, nursing company, antibiotic business that I am aware of that will manage someone with you know a history of IVDA in an outpatient setting with a PICC line. So, I don't believe that that is an option anywhere. PICC line and nursing facility- yes if possible and if the organism is one that could be potentially treated non-operatively or at least for a while to help stabilize the situation and then often what we do because it is very difficult to find nursing facilities that will take these people also because they have this terrible group of friends that often will bring drugs in and all this other stuff that surrounds	PICC line risk, priorities, post-operation care, liability of medical professionals

		the patient, they don't want them either, so they often will get left in the hospital for antibiotics for a period of time before they get their valve surgery. So, of your PICC line and go home – no; PICC line and nursing facility- yes but rarely available, so PICC line and stay in the hospital is the usual default.	
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams	multidisciplinary group, pain management, lack of knowledge, support for surgeons, post-operation care
	1005	I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	pre-operation care, post-operation care, risk evaluation
	1005	I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration

	1005	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, discussing addiction, frustration, post-operation care
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	1017	I: Tell me about your experience with managing pain in this population. S: Um, I've abdicated all responsibility to the pain service, but I will say that it is really difficult for our team because of, um, managing their pain, placement, getting them out of the hospital, the pain regimen that works, and then on the outpatient side, having, you know, to manage their expectations about how much narcotic they get or not get. I: What works to treat their pain in your experience? S: Uh, multi-modal therapies help. I think some level of opioids are, you know, unavoidable I'm afraid. We've been trying to devise a scheme to have an opioid-free experience for cardiac surgery for even non-opioid users, and that's been difficult because of, uh, the hospital's unwillingness to explore expensive, non-opioid therapies. I: What have you seen that doesn't work in this population? S: Tylenol.	pain management, post-operation care, perception of risk in PWID, administration, cost
	1017	I: If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, is it worth taking the patient to the OR? (Repeated) S: No. I: Ok. And why not?	risk evaluation, post-operation care, liability of medical professionals

		S: Well, because it is not about that risk. It is about, um, you know, their long-term risk.	
	1016	Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	support for surgeons, post-operation care, follow-up care, pain management, multidisciplinary group
	1006	Interviewer: Do people who inject drugs have a different operative and postoperative mortality? Interviewee: Yes.	post-operation care, risk evaluation
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, commitment to recovery, follow-up care, post-operation care, risk evaluation

	1006	Interviewer: Tell me about your experience with managing pain in this population? Interviewee: They take a lot of pain medicine. It's a little challenging because it's hard to draw the line between what's legitimate postoperative discomfort and what is drug seeking behavior. We try and stay away from the drugs like Dilaudid. Interviewer: What works to treat their pain? Interviewee: I try and use nonopioid medications, but otherwise just titrate the dose of standard opioids. Interviewer: What has not worked? Interviewee: What has not worked for their pain? Interviewer: Mm-hmm. Interviewee: Gosh, in early postop, expecting them to get by on acetaminophen and Motrin is unrealistic 'cause their sternotomies are painful, but I [unintelligible 13:30] hasn't worked, give 'em enough opiates it feels okay. Then there are the other drugs, Toradol and things like that, but once they're out a few days it'll change over to that. Interviewer: Do you consult another service for pain management? Interviewee: Not usually.	pain management, follow-up care, post-operation care

	1006	Interviewer: All right, so this next little section gives us a couple of different options for IV antibiotic therapies. The question is what do you think about these options, what do you think a PICC line and going home? Interviewee: Negatory, I don't do that. Interviewer: What about a PICC line and staying in the hospital? Interviewee: That's what we do with a lot of patients. Interviewer: PICC line and going to a nursing facility? Interviewee: Depends on the nursing facility. It's amazing, they actually have overdoses on the addiction medicine floor in the hospital, it's amazing. If it's a nursing home that doesn't have a actual addiction medicine specialization I would not do it. Interviewer: I think you may have been answering this already as well, what is the safest option? Interviewee: In hospital therapy, if they require IV therapy, and ideally you'd have a oral drug that the organism is susceptible to and they can send 'em home on pills.	PICC line risk, follow-up care, post-operation care
	1012	They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging.	post-operation care, pain management
	1012	What works or doesn't work to treat their pain in your experience? We usually get a pain consult and let them help us manage it and I think those are you know when you are giving opiates to people with an opiate addiction it's not, you know, so we try all the non-opiate medications but they don't tend to be very effective either.	pain management, stigma , post-operation care, liability of medical professionals

	1012	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So PICC line and go home is never and option because that basically gives them a mainline to use drugs so that is never an option. And there is no nursing facility, nursing company, antibiotic business that I am aware of that will manage someone with you know a history of IVDA in an outpatient setting with a PICC line. So, I don't believe that that is an option anywhere. PICC line and nursing facility- yes if possible and if the organism is one that could be potentially treated non-operatively or at least for a while to help stabilize the situation and then often what we do because it is very difficult to find nursing facilities that will take these people also because they have this terrible group of friends that often will bring drugs in and all this other stuff that surrounds the patient, they don't want them either, so they often will get left in the hospital for antibiotics for a period of time before they get their valve surgery. So, of your PICC line and go home – no; PICC line and nursing facility- yes but rarely available, so PICC line and stay in the hospital is the usual default.	PICC line risk, post-operation care
	1010	In people who inject drugs, do they from your perspective have different operative mortality or post-op complications? They, uh, it's a difficult question to answer because they are younger than the average. So, I would say that their outcomes are better than the outcomes from the standard AV or the standard MV that we do. So, thinking out loud here, their operative outcomes are actually better than outcomes of the standard population.	post-operation care, follow-up care, risk evaluation
	1010	Does a history of injecting drugs impact what type of valve you would choose? It does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for	discussing addiction, follow-up care, post-operation care, accountability, support for surgeons

		mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	
	1014	S: It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	multidisciplinary group, post-operation care, follow-up care, changes over time
	1002	Interviewer: Do people who inject drugs have different operative and postoperative mortality and complications? Respondent: I think so.	post-operation care
	1003	Yeah, we – as you probably know, we're involved in a study looking at that - Dr. Wurcel is the lead investigator on that – what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and	data, follow-up care, prevalence of endocarditis, post-operation care

		more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	
	1003	Yeah. Well, they would undergo – we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive	SUD treatment, commitment to recovery, discussing addiction, follow-up care, multidisciplinary group, post-operation care, protocol
	1003	So then, you could have a live patient to have this discussion with. So, first and foremost, is to save the patient's life, so I'd recom – I would put the patient on a schedule, no matter what the social situation is, because I mean, we're here to help people and even you know, if she doesn't have surgery, she's going to die. So, that would be my approach.	discussing addiction, post-operation care
	1003	Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously. If it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to	follow-up care, post-operation care, relapse, SUD treatment, support for patient

		undergo an attempt to treat their underlying addiction after the second surgery.	
	1005	Interviewer: Looking back, I guess on similar situations, are there any things that you would change about approaches you've taken to these types of patients before? Interviewee: I think that we have become more patient in operating on these patients. I think years ago there was more of a trend to operate on these people when they were in more shock, and now there's a trend to stabilize the patient and wait on their blood cultures to be negative for at least 72 hours, and make sure that they can agree to postoperative expectations that we want them to agree to before we consider operation. For them to agree to postoperative expectations, they really need to be off the breathing machine. We rarely will operate on people who are on breathing machines these days as we want them to agree to rehab and all of the postoperative expectations.	changes over time, post-operation care, commitment to recovery, discussing addiction, follow-up care, frustration, patient consent
	1005	Interviewer: How should this patient in that vignette have the opioid use disorder treated and win? Interviewee: Well that patient's critically ill, so that patient needs to be—should probably be in the hospital for six weeks, because if she gets better from her shock and then gets tuned up and then have surgery, then she'll need probably two to four weeks of postoperative IV antibiotics in the hospital, and then we prefer to discharge straight to rehab.	post-operation care, SUD treatment, PICC line risk, follow-up care, save lives
	1005	Interviewer: Tell me a little bit about your experience with managing pain in this population? Interviewee: Well we struggle in the ICU and on the floor postoperatively. We often get pain consults, or have the addiction medicine team make recommendations. We typically use IV fentanyl just in the ICU, and then we try to bridge that to the lowest dose oral narcotic that we can on the floor. My preference is to try to minimize them to just tramadol and/or Tylenol. Many times the pain service will put	pain management, post-operation care, multidisciplinary group, collaboration with addiction medicine

		folks on PCAs and continue their IV medication a lot longer than we like to do that.	
	1005	terviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, accountability, insurance, discussing addiction, frustration, post-operation care
	1005	Interviewee: A patient who is actively using when they came in the hospital, I feel should not be discharged from the hospital with any IV lines, or a nursing home with any IV lines. We usually recommend for those patients to stay in the hospital with their PICC line until they complete their antibiotics, and then the PICC line comes out on discharge home or to a nursing home.	post-operation care, PICC line risk
	1014	It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	multidisciplinary group, follow-up care, post-operation care, futility, changes over time
	1014	We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that.	lack of knowledge, lack of resources, follow-up care, desired changes, frustration, post-operation care, support for patient

		We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over	
	1009	an you say more about the futility piece? Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if you fix the heart, they're never going to return to a quality of life. Other times there are complications that have arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	futility, risk evaluation, liability of medical professionals, post-operation care
	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility

		surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery.	support for patient, multidisciplinary group, post-operation care, follow-up care
	1009	And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed.	time constraints, lack of resources, follow-up care, medical model, post-operation care, multidisciplinary group

	1009	So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	post-operation care, follow-up care, frustration, multidisciplinary group, accountability, desired changes
pregnancy			
	1009	Interviewer: Would your approach change if you learned that Katy presented with a prosthetic endocarditis if she was pregnant? Surgeon: I guess, you know, yes, to be honest. It would probably change my approach. I don't know what I would do in that situation. I can't even begin to speculate.	pregnancy
	1006	Interviewer: Okay. Would your approach change if you learned that when Katie presented with the prosthetic valve endocarditis she was pregnant? Interviewee: Oh, would it have any effect on that? Interviewer: Yeah, would it change your approach to the patient if she was pregnant? Interviewee: Well may lose the child if you do the operation, cardiopulmonary bypass, but if she presented in cardiogenic shock, I don't see that there's any alternative.	pregnancy, risk evaluation
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting	pregnancy, multidisciplinary group, risk evaluation, stigma , frustration, deservingness

		pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	
	1019	at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't.	pregnancy, patient consent, save lives, seriousness, priorities
	1019	Would you… would your approach change if you learned that when Katey presented with prosthetic valve endocarditis was pregnant? Injected cocaine but did not inject heroin? Or if it was five years since her last use drugs? Um, probably not. Um… you know… at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad	pregnancy, patient consent, save lives, priorities, seriousness

		shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	
	1008	And, so, would your approach change if you had learned -- like when Katie presented with prosthetic valve endocarditis, she was pregnant? Like what would your treatment look like for someone who's pregnant? Respondent: Well, I probably would be more apt to operate or -- like doing surgery on somebody who's pregnant is at a very high risk for, you know, having spontaneous abortion.	pregnancy
	1002	Interviewer: Would your approach to your management of Katy change if you learned that she was pregnant when she came in? Respondent: I think so. Interviewer: How so? Respondent: How so? Like, case by case.	pregnancy, deservingness
	1019	Would you… would your approach change if you learned that when Katey presented with prosthetic valve endocarditis was pregnant? Injected cocaine but did not inject heroin? Or if it was five years since her last use drugs? Um, probably not. Um… you know… at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could	pregnancy, patient consent, save lives, priorities, seriousness

		pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	
	1018	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, yes, two lives at stake instead of one.	save lives, pregnancy
	1016	I: Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Um, that's a really hard question. Um, I think that when you see patients like that, you, you definitely have to have a multidisciplinary approach, and, um, you know, surgery depending on the trimester, um, can be, um, um, contraindicated, um, but, you know, IV drugs in pregnancy is, is never a good thing. Um, and so, I think there has to be really a team, a team approach on that, about what to do with the pregnancy, um, is, should the pregnancy be terminated, and should she have an open-heart surgery, and kind of what are the…it's, it's a very complex issue.	multidisciplinary group, pregnancy, risk evaluation
	1006	nterviewer: Okay. Would your approach change if you learned that when Katie presented with the prosthetic valve endocarditis she was pregnant? Interviewee: Oh, would it have any effect on that? Interviewer: Yeah, would it change your approach to the patient if she was pregnant? Interviewee: Well may lose the child if you do the operation, cardiopulmonary bypass, but if she presented in cardiogenic shock, I don't see that there's any alternative.	pregnancy, save lives, priorities, risk evaluation

	1002	Would your approach to your management of Katy change if you learned that she was pregnant when she came in? Respondent: I think so. Interviewer: How so? Respondent: How so? Like, case by case.	pregnancy, deservingness
	1007	Okay, would your approach change if you learned that Katie presented with prosthetic valve endocarditis and she was pregnant? Speaker 2: Would I what? Speaker 1: Would your approach change if you learned that Katie presented to the… Sparker 2: Of course. Everything impacts	pregnancy, defensive
	1017	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: No.	pregnancy
	1013	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Oh, boy. Um, well, I suppose, well not that's getting really complicated and its going to depend how far along she is in her pregnancy. Cardiac surgery is very high risk for fetal loss but I suppose we would probably be more inclined to operate if she was pregnant given that there is another life involved and the chance that we might be successful	pregnancy, priorities, save lives
	1003	would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? Respondent: No. Interviewer: Okay. Respondent: It's – you put someone on the lung machine, it puts the fetus at risk for fetal demise. So, that's my concern. Whether or not to offer surgery, no, I mean, I'll - pregnant or not pregnant, if they need an operation, we'll do it. It's just, we're - what's going to happen to the fetus during the operation? That's my concern.	pregnancy, liability of medical professionals
	1009	Interviewer: Would your approach change if you learned that Katy presented with a prosthetic endocarditis if she was pregnant? Surgeon: I guess, you know, yes, to be honest. It would probably change my approach. I don't	pregnancy

		know what I would do in that situation. I can't even begin to speculate.	
	1011	I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one additional thing that I have to but not let that impact the decision making.	pregnancy, medical model, multidisciplinary group, support for patient, support for surgeons
	1017	I: Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: No.	pregnancy
	1013	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Oh, boy. Um, well, I suppose, well not that's getting really complicated and its going to depend how far along she is in her pregnancy. Cardiac surgery is very high risk for fetal loss but I suppose we would probably be more inclined to operate if she was pregnant given that there is another life involved and the chance that we might be successful.	pregnancy, save lives, priorities
	1015	Yeah. Would your approach change, um, I think it is talking about operating on Katie, if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Yes. Well, the guidelines say that if you want to consider a mechanical valve in a pregnant woman, you are welcome to do so as long as they are stable on a low-dose of warfarin over a period of time. Obviously, that being said, a mechanical valve would not be my first choice.	pregnancy, valve preference
	1007	Speaker 1: Okay, would your approach change if you learned that Katie presented with prosthetic valve endocarditis and she was pregnant? Speaker 2: Would I what? Speaker 1: Would your approach change if you	risk evaluation, pregnancy

		learned that Katie presented to the… Sparker 2: Of course. Everything impacts	
	1001	Interviewer: Would your approach change if you learned that a [KD] who came in with prosthetic valve endocarditis was pregnant? Respondent: I don't think so. I think it is only based on the medical need, yeah. We have to take into consideration the status of pregnancy, but the care should be centered around the endocarditis.	pregnancy
	1004	R: Would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? I: Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation	commitment to recovery, stigma , pregnancy, perception of risk in PWID, frustration, discussing addiction, futility
	1005	Interviewer: All right. Would your approach change if you learned that when Katie, that patient, presented with a prosthetic valve endocarditis that she was pregnant? Interviewee: No.	pregnancy
	1008	Interviewer: And, so, would your approach change if you had learned -- like when Katie presented with prosthetic valve endocarditis, she was pregnant? Like what would your treatment look like for someone who's pregnant? Respondent: Well, I probably would be more apt to operate or -- like doing surgery on somebody who's pregnant is at a very high risk for, you know, having spontaneous abortion.	pregnancy, deservingness, save lives
	1018	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, yes, two lives at stake instead of on	pregnancy, save lives
	1012	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was 1) pregnant? Um, yes it probably would but it would depend on how pregnant she was. If it is early	pregnancy, risk evaluation

		pregnancy than she probably is going to lose the, lose the baby, and if it is later pregnancy it going to certainly jeopardize the baby, so yeah that would complicate things, it would depend on what stage of pregnancy sh	
	1018	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, yes, two lives at stake instead of one.	save lives, pregnancy
	1005	Interviewer: All right. Would your approach change if you learned that when Katie, that patient, presented with a prosthetic valve endocarditis that she was pregnant? Interviewee: No.	pregnancy
	1017	I: Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: No.	pregnancy
	1004	Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation.	pregnancy, commitment to recovery, discussing addiction, frustration, futility, stigma
	1016	uld your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Um, that's a really hard question. Um, I think that when you see patients like that, you, you definitely have to have a multidisciplinary approach, and, um, you know, surgery depending on the trimester, um, can be, um, um, contraindicated, um, but, you know, IV drugs in pregnancy is, is never a good thing. Um, and so, I think there has to be really a team, a team approach on that, about what to do with the pregnancy, um, is, should the pregnancy be terminated, and should she have an open-heart surgery, and kind of what are the…it's, it's a very complex issue.	pregnancy, multidisciplinary group, risk evaluation
	1006	Interviewer: Okay. Would your approach change if you learned that when Katie presented with the prosthetic valve endocarditis she was pregnant? Interviewee: Oh, would it have any effect on that? Interviewer: Yeah, would it change your approach to the patient if she was pregnant?	pregnancy, risk evaluation

		Interviewee: Well may lose the child if you do the operation, cardiopulmonary bypass, but if she presented in cardiogenic shock, I don't see that there's any alternative.	
	1012	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was 1) pregnant? Um, yes it probably would but it would depend on how pregnant she was. If it is early pregnancy than she probably is going to lose the, lose the baby, and if it is later pregnancy it going to certainly jeopardize the baby, so yeah that would complicate things, it would depend on what stage of pregnancy she was.	pregnancy, risk evaluation
	1015	I: Yeah. Would your approach change, um, I think it is talking about operating on Katie, if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Yes. Well, the guidelines say that if you want to consider a mechanical valve in a pregnant woman, you are welcome to do so as long as they are stable on a low-dose of warfarin over a period of time. Obviously, that being said, a mechanical valve would not be my first choice.	pregnancy, valve preference
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	pregnancy, stigma , frustration, deservingness, multidisciplinary group
	1014	I: Would your approach change—um, so going back to Katie, so – would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Yeah, absolutely.	pregnancy
	1014	I: OK. And, what if had been 5 years since she last used drugs and then she shows up with an infected valve? S: Definitely, that's a different situation. So, the pregnancy thing, I'm not going to operate on her. I operate on her, she loses the baby.	pregnancy

		And, uh, we are going to have to manage her medically.	
	1011	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, I don't think so. I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one additional thing that I have to but not let that impact the decision making.	pregnancy, deservingness, multidisciplinary group
	1002	Interviewer: Would your approach to your management of Katy change if you learned that she was pregnant when she came in? Respondent: I think so. Interviewer: How so? Respondent: How so? Like, case by case.	pregnancy, deservingness
	1003	Interviewer: Okay. Okay. Okay. What about – so, would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? Respondent: No. Interviewer: Okay. Respondent: It's – you put someone on the lung machine, it puts the fetus at risk for fetal demise. So, that's my concern. Whether or not to offer surgery, no, I mean, I'll - pregnant or not pregnant, if they need an operation, we'll do it. It's just, we're - what's going to happen to the fetus during the operation? That's my concern.	pregnancy
	1014	I: Would your approach change—um, so going back to Katie, so – would your approach change if you learned that when Katie presented with prosthetic valve endocarditis,	pregnancy

		she was pregnant? S: Yeah, absolutely.	
	1014	I: OK. And, what if had been 5 years since she last used drugs and then she shows up with an infected valve? S: Definitely, that's a different situation. So, the pregnancy thing, I'm not going to operate on her. I operate on her, she loses the baby. And, uh, we are going to have to manage her medically.	pregnancy
	1005	Interviewer: All right. Would your approach change if you learned that when Katie, that patient, presented with a prosthetic valve endocarditis that she was pregnant? Interviewee: No.	pregnancy
	1014	I: Would your approach change—um, so going back to Katie, so – would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Yeah, absolutely.	pregnancy
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	1009	Would your approach change if you learned that Katy presented with a prosthetic endocarditis if she was pregnant? Surgeon: I guess, you know, yes, to be honest. It would probably change my approach. I don't know what I would do in that situation. I can't even begin to speculate.	pregnancy
preoperation care			
	1007	And how did you approach this case? Speaker 2: Um, yes and we approach it like, like any other patient. Speaker 1: Okay Speaker 2: Come up with the best plan for, for that patient. Speaker 1: Okay. So if you were to address Katie's issue, how would you approach Katie from the vignette? Speaker 2: Approach it? I mean in which way? I mean we would receive the patient, evaluate the patient.	protocol, perception of risk in PWID, pre-operation care, defensive

		Speaker1: Yeah Speaker 2: Um…If she needed surgery, she was a reasonable candidate, which so far it looks like she has an indication, then we'd do surgery.	
	1005	She is in cardiogenic shock from severe aortic insufficiency, and there is a concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Interviewee: Yes. Interviewer: How did you approach that case, and how would you approach this case? Interviewee: She needs to be stabilized and obtain all of her preoperative studies and have negative blood cultures before we would operate on her.	pre-operation care, priorities
	1010	And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of their endocarditis that its really not indicated to operate on someone like them.	relapse, multiple surgeries, futility, risk evaluation, pre-operation care, deservingness
	1002	Does he need the valve operation or not – the indication for the surgery.	pre-operation care

	1001	Does the type of valve impact the complications or the risk involved? Respondent: The valve surgery certainly carries the different level of risk. So each value has different technical difficulty or aspect. For example, mitral valve – the surgery would be more challenging than aortic valve surgery. The [redo] surgery will be more difficult than the first-time operation. So I would say everybody is different. Every patient is different. So we will not know the patient's individual risk for surgery until we complete their preop testing and evaluation.	risk evaluation, multiple surgeries, pre-operation care, left vs right side
	1008	Have you ever discussed the drug use with a patient like this? You know, like what kinds of questions would you ask? Respondent: Oh, every case. Interviewer: Okay. Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	pre-operation care, patient consent, discussing addiction, deservingness, paternalism, accountability
	1009	How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it.	patient consent, discussing addiction, knowledge, pre-operation care, protocol
	1005	I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	pre-operation care, post-operation care, risk evaluation
	1005	I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	pre-operation care, post-operation care, risk evaluation
	1005	I think that by the time we see the patients and operate on them, usually the withdrawal has resolved and been treated by the medical or addiction team. We don't see a lot of withdrawal that we use benzos for in our patients when we operate on them.	withdrawal management, pre-operation care

	1005	I think that by the time we see the patients and operate on them, usually the withdrawal has resolved and been treated by the medical or addiction team. We don't see a lot of withdrawal that we use benzos for in our patients when we operate on them.	withdrawal management, pre-operation care
	1017	I: How did you approach that case? S: Um, first was to see how well we could stabilize her medically, and it turned out there were things we could do, so stabilize medically, prolong antibiotics, and that actually was very successful to allow us to have a, um, you know, less risk surgery.	pre-operation care, risk evaluation, medical model
	1017	I: How did you approach that case? S: Um, first was to see how well we could stabilize her medically, and it turned out there were things we could do, so stabilize medically, prolong antibiotics, and that actually was very successful to allow us to have a, um, you know, less risk surgery.	pre-operation care, risk evaluation, medical model
	1015	I: How should this patient's opioid use disorder be treated and when? This is going back to Katie. S: Um…I don't think there is a time. I think it needs to be treated throughout the whole hospital stay and post-op. I don't think you say, ok now we've done surgery, now you start treatment. The treatment needs to start the minute they step in the door or become identified as drug users.	timing of SUD tx, pre-operation care, follow-up care, commitment to recovery
	1005	Interviewee: Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary. Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes.	multiple surgeries, pre-operation care, deservingness, reinfection, relapse, accountability, commitment to recovery, frustration

	1008	Interviewer: Okay. Good to know. Okay. So, now I have a clinical vignette. So, in this situation, Katie is a 34-year-old woman who uses heroin via injection drug use and she has staph aureus bacteremia and aortic valve endocarditis. At this point, she's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So, first, like have you had experience caring for a patient in a similar situation? Respondent: Oh, yeah. Interviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	patient story, pre-operation care, risk evaluation, save lives

	1005	Interviewer: Do you feel supported in your care of people who inject drugs? Interviewee: Yes. Interviewer: How do you think the hospital could support you more? Interviewee: I think we have a great addiction program here. We have trouble getting these patients admitted to the hospitalist service, and the hospitalist service could support us more in admitting these patients as they typically require prolonged preoperative evaluation and time before we take them into surgery.	support for patient, support for surgeons, pre-operation care
	1005	Interviewer: Do you feel supported in your care of people who inject drugs? Interviewee: Yes. Interviewer: How do you think the hospital could support you more? Interviewee: I think we have a great addiction program here. We have trouble getting these patients admitted to the hospitalist service, and the hospitalist service could support us more in admitting these patients as they typically require prolonged preoperative evaluation and time before we take them into surgery.	support for patient, support for surgeons, pre-operation care
	1001	Interviewer: For this patient, when do you think this treatment should be started? Respondent: I would say start it right away, because they should be evaluated even in preop. Then they can be carefully monitored. You know, theoretically I would want those patients to be closely monitored for the first few months after surgery, and that way there's no chance for them to get back into the drug use – because the risk for reinfection within the first few months is very, very high.	timing of SUD tx, pre-operation care, relapse, accountability, follow-up care, post-operation care, perception of risk in PWID
	1006	Interviewer: How did you approach the case? Interviewee: Well, there have been a few of ‘em, the ones that were operable I operated on, the ones that had somewhat worse problems, you can even describe everything. If they were in renal failure and had a stroke, I might not operate on them. Interviewer: Looking back is there anything you would change about your approach?	pre-operation care, time between operations, futility, perception of risk in PWID, priorities

		Interviewee: There's some instances where I would have operated sooner, but if the person arrives in shock, since I started CV surgery, unless there's a strong reason not to operate, you go ahead and repair the valve.	
	1005	Interviewer: How do you think the hospital could support you more? Interviewee: I think we have a great addiction program here. We have trouble getting these patients admitted to the hospitalist service, and the hospitalist service could support us more in admitting these patients as they typically require prolonged preoperative evaluation and time before we take them into surgery.	support for surgeons, pre-operation care, support for patient
	1001	Interviewer: If a patient has 100-percent risk of mortality without surgery but a 50-percent risk of operative mortality with operation, do you think it's worth taking the patient to the OR? Respondent: If it's 100 percent, [then it is now], but it's hard. Sometimes we think patients are inoperable. It doesn't mean that the patient cannot – that the operative mortality will be 100 percent. It's hard. To be honest, if somebody has multiple-organ failure, than the surgery will be contraindicated. They cannot even survive anesthesia. So it's a different story. But a lot of people are [deemed] inoperable, not just based on the operative mortality itself. You know, it's related to other issues. Sometimes we take into consideration even the social issues – you know, the lifestyle or the age, for example. Interviewer: All calculated into the preoperative risk? Respondent: Right, yeah.	risk evaluation, societal issue, futility, pre-operation care, seriousness

	1005	Interviewer: Okay. Tell me your experience with managing withdrawal in this population? Interviewee: I think that by the time we see the patients and operate on them, usually the withdrawal has resolved and been treated by the medical or addiction team. We don't see a lot of withdrawal that we use benzos for in our patients when we operate on them. Interviewer: You may have already answered this, do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: No.	withdrawal management, collaboration with addiction medicine, pre-operation care, pain management
	1009	Interviewer: What are some of the first things that you think about when you're asked to evaluate someone who injects drugs for a valve replacement? Surgeon: What is the microorganism, what valve is infected? Is it on the right side of the heart? The left side of the heart? Do they have heart failure? Have they had thromboembolic complications?	protocol, medical model, pre-operation care, risk evaluation
	1005	Interviewer: What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Interviewee: The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is. Interviewer: Do people who inject drugs have a different operative and postoperative mortality? Interviewee: I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	risk evaluation, pre-operation care, seriousness, data
	1006	Interviewer: What are your first throughs you consider when you're asked to evaluate a person who injects drugs for a valve replacement? Interviewee: I'm sorry, what was the first thing I think about? Interviewer: Sure. What are the first thoughts you consider? Interviewee: Oh, need for immediate surgery versus ability to complete a course of antibiotics and psychosocial rehabilitation	priorities, pre-operation care, risk evaluation

	1009	Interviewer: Withdrawal, what has that experience been like, as well? Surgeon: I usually will have the pain service kind of manage that. When these patients come in, especially if they've had a lot of narcotic or opioid use ahead of time, we just let the service know prior to surgery, please come see the patient after the operation and whatever recommends they have we follow.	withdrawal management, pre-operation care
	1002	Interviewer: Yeah, so someone comes in who injects drugs, and you're going to evaluate them for a valve surgery. What comes to mind? Respondent: Does he need the valve operation or not – the indication for the surgery.	risk evaluation, pre-operation care
	1002	Interviewer: Yeah. When you had a patient like this, like Katy from the vignette, did you ever discuss drug use? Respondent: Yeah, we made sure to. We just need to make sure to discuss this drug use before going to surgery, because that's probably the cause of these things.	pre-operation care, perception of risk in PWID, discussing addiction
	1006	need for immediate surgery versus ability to complete a course of antibiotics and psychosocial rehabilitation.	pre-operation care, risk evaluation, priorities
	1008	nterviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a	priorities, risk evaluation, pre-operation care, save lives, time constraints, patient story

		couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	
	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care
	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care
	1002	Respondent: How would I approach? So, preoperative evaluation – you know, how serious the cardiogenic shock is, actually. You know, if the patient is in severe shock, it just depends on if it's hemodynamic shock, or even more hemodynamic and also metabolic shock, which means if the liver is dead and the kidneys are dead, then why do we need to do the surgery? So that's one thing we need to	risk evaluation, pre-operation care, priorities, seriousness

		make sure, the surgical indication about the shock.	
	1002	Respondent: How would I approach? So, preoperative evaluation – you know, how serious the cardiogenic shock is, actually. You know, if the patient is in severe shock, it just depends on if it's hemodynamic shock, or even more hemodynamic and also metabolic shock, which means if the liver is dead and the kidneys are dead, then why do we need to do the surgery? So that's one thing we need to make sure, the surgical indication about the shock. Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result. Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the surgery? So yeah, those are the first things we come up with.	pre-operation care, futility, cost
	1003	Respondent: Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications.	desired changes, risk evaluation, save lives, pre-operation care, time constraints, frustration, seriousness

		Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive.	
	1017	S: Um, first was to see how well we could stabilize her medically, and it turned out there were things we could do, so stabilize medically, prolong antibiotics, and that actually was very successful to allow us to have a, um, you know, less risk surgery.	risk evaluation, pre-operation care, medical model
	1005	She needs to be stabilized and obtain all of her preoperative studies and have negative blood cultures before we would operate on her.	pre-operation care, priorities
	1005	She needs to be stabilized and obtain all of her preoperative studies and have negative blood cultures before we would operate on her.	pre-operation care, priorities
	1007	So you operate on Katie from the first vignette and she does well, she's linked to a Methadone maintenance program. About one year later, she's back to the hospital and she has prosthetic valve endocarditis. So have you seen prosthetic valve endocarditis in people who inject drugs? Speaker 2: Yes. Speaker 1: Okay. Any specific cases come to your mind? Speaker 2: Too many there. Speaker 1: Tell me your thoughts about management decisions for these relapse cases. Speaker 2: Well, I mean we manage them the same as any other patient. You um, you know, assessing the risk, the benefit, surgery, support system. Speaker 1: Okay. So does it impact your decision to operate if the endocarditis is related to drug use? Speaker 2: Yeah, everything impacts our decision to operate.	patient story, relapse, pre-operation care, support for patient
	1013	So, we get the pain service involved and it's a real challenge because they feel genuine pain, their threshold is lower and it is extremely hard to control their pain and so you have to rely a lot on non-steroidal agents, that kind of stuff What works or doesn't work to treat their pain in your experience? So Toradol [works] but it's a real challenge. And when I see somebody who's had that problem pre-op I warn them about it.	pain management, pre-operation care
	1013	So, we get the pain service involved and it's a real challenge because they feel genuine pain, their threshold is lower and it is extremely hard to control their pain and so you have to	pain management, pre-operation care, collaboration (secondary)

		rely a lot on non-steroidal agents, that kind of stuff What works or doesn't work to treat their pain in your experience? So Toradol [works] but it's a real challenge. And when I see somebody who's had that problem pre-op I warn them about it.	
	1007	Speaker 1: Okay. Thank you. So how should these patients with opioid use disorder, so Katie, how should she be treated and when do you think you would be appropriate for her to be treated? Speaker 2: Treated surgically or … Speaker 1: Treated surgically Speaker 2: So surgically. Um, she's toward the end of the spectrum that needs surgery very soon because of her aortic insufficiency, which is in the acute phase, its poorly tolerated. So she's somebody that would probably need surgery sooner than later, would need some medical optimization in an ICU setting. Um, probably would need some reformed social addiction medicine engagement early on. But it's, it's not going to do much at this point and it's more for the recovery and future.	patient story, pre-operation care, societal issue
	1007	Speaker 1: Thank you. What was your, what are your first thoughts when you consider, what are the first thoughts you consider when you're asked to evaluate a patient who injects drugs for your valve replacement? Speaker 2: First thoughts? Speaker 1: Yeah. For your patients who injects drugs, and need a valve replacement. Speaker 2: Um, I suppose no different than any other patient.	pre-operation care
	1013	Tell me about your experience with managing pain in this population. So, we get the pain service involved and it's a real challenge because they feel genuine pain, their threshold is lower and it is extremely hard to control their pain and so you have to rely a lot on non-steroidal agents, that kind of stuff What works or doesn't work to treat their pain in your experience? So Toradol [works] but it's a real challenge. And when I see somebody who's had that problem pre-op I warn them about it.	pain management, pre-operation care, discussing addiction
	1005	The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is.	data, pre-operation care, risk evaluation
	1005	The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is.	data, pre-operation care, risk evaluation

	1009	The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	commitment to recovery, discussing addiction, patient consent, pre-operation care, futility, tx compared to colleagues
	1001	The valve surgery certainly carries the different level of risk. So each value has different technical difficulty or aspect. For example, mitral valve – the surgery would be more challenging than aortic valve surgery. The [redo] surgery will be more difficult than the first-time operation. So I would say everybody is different. Every patient is different. So we will not know the patient's individual risk for surgery until we complete their preop testing and evaluation.	risk evaluation, multiple surgeries, pre-operation care, prioritization (secondary)
	1007	Um, she's toward the end of the spectrum that needs surgery very soon because of her aortic insufficiency, which is in the acute phase, its poorly tolerated. So she's somebody that would probably need surgery sooner than later, would need some medical optimization in an ICU setting. Um, probably would need some reformed social addiction medicine engagement early on. But it's, it's not going to do much at this point and it's more for the recovery and future.	pre-operation care, post-operation care, follow-up care
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, pre-operation care, risk evaluation, valve preference, left vs right side
	1009	What are some of the first things that you think about when you're asked to evaluate someone who injects drugs for a valve replacement? Surgeon: What is the microorganism, what valve is infected? Is it on the right side of the heart? The left side of the heart? Do they have	priorities, protocol, pre-operation care, risk evaluation

		heart failure? Have they had thromboembolic complications?	
	1009	Withdrawal, what has that experience been like, as well? Surgeon: I usually will have the pain service kind of manage that. When these patients come in, especially if they've had a lot of narcotic or opioid use ahead of time, we just let the service know prior to surgery, please come see the patient after the operation and whatever recommends they have we follow.	withdrawal management, pre-operation care
	1002	Yeah, we made sure to. We just need to make sure to discuss this drug use before going to surgery, because that's probably the cause of these things.	discussing addiction, pre-operation care, risk evaluation
	1010	You operate on Katie and she does well. She is linked into a methadone maintenance program. About 1 year later she is back in the hospital and she now has prosthetic valve endocarditis. Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. Any specific cases come to mind? One, two, three, four in 10 seconds. Tell me your thoughts about management decisions in these cases The issue starts I think earlier. And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of	deservingness, follow-up care, pre-operation care, risk evaluation

		their endocarditis that its really not indicated to operate on someone like them.	
prevalence of endocarditis			
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue
	1019	Okay. Um, do people who inject drugs have different operative or postoperative mortality or complications? Well, I think their, um… their incidence of, um, valve infections, prosthetic valve infections, is much higher. Ok Um, I also think that, um, intravenous drug users, uh, are more difficult to manage from a pain perspective for fairly obvious reasons	perception of risk in PWID, age, pain management, multiple surgeries, prevalence of endocarditis, seriousness

		[COUGHING]. They also tend to be younger patients. So, they do, despite the fact that they have an addiction, and it can be a pretty serious thing… Um, heart function is usually pretty good and, um, they're young individuals and usually recover well from surgery, which is fortunate for them because, uh, often a lot of them need 2 or 3 surgeries.	
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	1003	I have to say that's a minority [of] cases. Most patients I've found have gone on and been clean for a x number of months, sometimes years, and then gone back using drugs again. Chances are I'll offer them a second operation. If I get a sense they're going to try once more to fight the disease, and hopefully overcome it. So, it's - I know – I don't have a set answer; it depends on the set of circumstances, but I have to say, more often than that, we will offer them a second operation. Provided it get - I know that they tried in the past, and I think the capacity to try again.	follow-up care, relapse, prevalence of endocarditis, multiple surgeries, second chance, accountability, empathy
	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and	prevalence of endocarditis, risk evaluation, save lives, medical model

		the family, just because the etiology is different from other patient populations.	
	1001	Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	perception of risk in PWID, discussing addiction, save lives, prevalence of endocarditis
	1001	Given the circumstances now, endocarditis is just pandemic, affecting the financial conditions and socioeconomics. It's difficult. I think that society cannot afford having this patient again and again, multiple times – and whether [unintelligible 00:24:55]. To me, even though we would [choose to save people's lives], there are certain limits to something we can do. But again, that requires a discussion between the healthcare professionals, not just the surgeons. It should be based on the studies or a recommendation from the society and/or the medical society, not just the surgical society.	prevalence of endocarditis, societal issue, multiple surgeries, cost, data, deservingness, save lives
	1005	I think it has changed, and that I think it's an epidemic and we see so much of it. I think it's changed in that we've I think tried to become a lot more aggressive in getting these patients into rehab. I also think it's changed in that the tolerance for doing multiple valve operations on patients is just not accepted amongst our specialty as much to do repetitive operations on people that continue to use.	prevalence of endocarditis, protocol, changes over time
	1012	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Uh. I don't think that antibiotics are ever going to be significantly more powerful than they are right now. I would hope that at some point we get better treatments for the substance abuse which is the problem. What we are treating is a sequela of the problem but what we need to focus on is the problem and right now, even your study is not focusing on the problem, its focusing on how aggressive we are in treating one of the sequela of the problem. I hope that the focus can shift to a. why are so many young people using life-threatening drugs and b. once they have a life-threatening problem as a consequence why do they still do it. So, that is a, that's the problem.	changes over time, desired changes, SUD treatment, prevalence of endocarditis, stigma

	1005	I think it has changed, and that I think it's an epidemic and we see so much of it. I think it's changed in that we've I think tried to become a lot more aggressive in getting these patients into rehab. I also think it's changed in that the tolerance for doing multiple valve operations on patients is just not accepted amongst our specialty as much to do repetitive operations on people that continue to use.	prevalence of endocarditis, protocol, changes over time
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue
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	1003	Yeah, we – as you probably know, we're involved in a study looking at that - Dr. Wurcel is the lead investigator on that – what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	data, follow-up care, prevalence of endocarditis, post-operation care
	1005	nterviewer: Do you think that treatment for endocarditis in people who use—who inject drugs will change in the future? Interviewee: I think it has changed, and that I think it's an epidemic and we see so much of it. I think it's changed in that we've I think tried to become a lot more aggressive in getting these patients into rehab. I also think it's changed in that the tolerance for doing multiple valve operations on patients is just not accepted amongst our specialty as much to do repetitive operations on people that continue to use	changes over time, multiple surgeries, prevalence of endocarditis, protocol
priorities			
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness

		have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	
	1010	What are your first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see how they ended up down that path.	priorities, patient story, empathy, discussing addiction
	1010	ow did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later.	protocol, priorities, training, risk evaluation, save lives
	1010	Do you want to receive more training on this? I don't think it would change what I do for the patients.	priorities, training
	1010	For a patient with prosthetic valve endocarditis. PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? I would certainly not put a PICC line in someone then send them home. If they came back because of documented drug use, then I think that is a disservice to the patient. PICC line and hospital I would have no issue with that that is usually what we do. PICC line and facility, there are two facilities that come to mind that patient's themselves know that it is easier for them to get drugs there than get drugs at home. PICC line and [specific rehab] I would say yes. PICC line and uh what's the one ? [Specific facility] Yes [specific facility], no. Uh there is another one too ? [Specific facility]	PICC line risk, follow-up care, priorities, protocol

		[Specific facility], no. You know uh, I think talking to the patient and see what they think because you know they are addicted but they are not, you know they could be bad, they could be good, they could be very smart, they could be dumb, they could be anything, but they're addicted. Just like you know it makes no sense when someone talks to a patient loud, they're not deaf, they just have coronary disease, it's the same thing as well.	
	1019	Great. So, for our first interview question, what are your first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Umm. My, uh, my first thought usually is a… is a clinical one, whether or not a valve replacement is indicated.	priorities, mechanical problem
	1019	How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that	priorities, seriousness, save lives
	1019	Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. OK. Tell me your thoughts about management decisions regarding these cases. If a patient… Uh, if a patient is a candidate for surgery and the operation is feasible, operate. Okay Period. Okay Point blank.	second chance, risk evaluation, priorities, multiple surgeries
	1019	Does it… so it does not, does No. …it impact your decision to operate if the endocarditis is related to drug use No. Ok. Again, that's not my job. My job is to take care of patients with heart problems.	deservingness, save lives, priorities

	1019	at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't.	pregnancy, patient consent, save lives, seriousness, priorities
	1019	And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient. The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	risk evaluation, tx compared to colleagues, priorities, save lives, second chance
	1019	Great. So, for our first interview question, what are your first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Umm. My, uh, my first thought usually is a… is a clinical one, whether or not a valve replacement is indicated.	priorities, mechanical problem

	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem
	1019	Would you… would your approach change if you learned that when Katey presented with prosthetic valve endocarditis was pregnant? Injected cocaine but did not inject heroin? Or if it was five years since her last use drugs? Um, probably not. Um… you know… at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	pregnancy, patient consent, save lives, priorities, seriousness
	1019	The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there	tx compared to colleagues, risk evaluation, second chances, priorities, save lives

		might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	
	1008	nterviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	priorities, risk evaluation, pre-operation care, save lives, time constraints, patient story
	1008	What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	priorities, medical model, deservingness, commitment to recovery, reinfection

	1008	like how -- what's the success rate of surgery versus -- or effectiveness rate, I guess, of surgery versus antibiotics? Respondent: For prosthetic valve? Interviewer: Yeah. Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time.	futility, deservingness, priorities, medical model, reinfection
	1019	Great. So, for our first interview question, what are your first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Umm. My, uh, my first thought usually is a… is a clinical one, whether or not a valve replacement is indicated.	priorities, mechanical problem
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem
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		the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	
	1019	The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	tx compared to colleagues, risk evaluation, second chances, priorities, save lives
	1018	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um, my first reaction is sympathy. It's an addiction, it's not a crime. And um, most of the time, and um, I think your question specifically mentioned substance abuse, injection drugs, ok, yeah, it's sympathy. And looking forward to figuring out if there is a way to help this person.	priorities, empathy, save lives
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, risk evaluation, left vs right side

	1011	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? The first things are medical. Thinking about the guidelines if the patient needs an operation, what is the physiological state, by that I mean what are the anatomic findings, what are his echo findings, and just exactly what I would think about any other patient who has a mechanical valve lesion.	protocol, data, priorities
	1016	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? S: How sick they are, and their ability to withstand surgery, and what is their likelihood of, um, refraining from using drugs if I put a, um, prosthetic valve in.	perception of risk in PWID, priorities
	1016	: And how did you approach the case? S: Um, in that case, um, the patient was brought to the operating room and had, um, um, reconstruction of their root and valve. I did have an extensive preoperative conversation with the family members, um, and, um, the patient, regarding the risks of the surgery, um, and that the importance of refraining from drugs afterwards.	priorities, patient consent, discussing addiction
	1006	Interviewer: What are your first throughs you consider when you're asked to evaluate a person who injects drugs for a valve replacement? Interviewee: I'm sorry, what was the first thing I think about? Interviewer: Sure. What are the first thoughts you consider? Interviewee: Oh, need for immediate surgery versus ability to complete a course of antibiotics and psychosocial rehabilitation	priorities, pre-operation care, risk evaluation
	1006	Interviewer: How did you approach the case? Interviewee: Well, there have been a few of 'em, the ones that were operable I operated on, the ones that had somewhat worse problems, you can even describe everything. If they were in renal failure and had a stroke, I might not operate on them. Interviewer: Looking back is there anything you would change about your approach? Interviewee: There's some instances where I would have operated sooner, but if the person arrives in shock, since I started CV surgery,	pre-operation care, time between operations, futility, perception of risk in PWID, priorities

		unless there's a strong reason not to operate, you go ahead and repair the valve.	
	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1006	nterviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	commitment to recovery, data, futility, multiple surgeries, reinfection, deservingness, priorities, relapse

	1006	nterviewer: Okay. Would your approach change if you learned that when Katie presented with the prosthetic valve endocarditis she was pregnant? Interviewee: Oh, would it have any effect on that? Interviewer: Yeah, would it change your approach to the patient if she was pregnant? Interviewee: Well may lose the child if you do the operation, cardiopulmonary bypass, but if she presented in cardiogenic shock, I don't see that there's any alternative.	pregnancy, save lives, priorities, risk evaluation
	1002	Respondent: How would I approach? So, preoperative evaluation – you know, how serious the cardiogenic shock is, actually. You know, if the patient is in severe shock, it just depends on if it's hemodynamic shock, or even more hemodynamic and also metabolic shock, which means if the liver is dead and the kidneys are dead, then why do we need to do the surgery? So that's one thing we need to make sure, the surgical indication about the shock.	risk evaluation, pre-operation care, priorities, seriousness
	1002	Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result.	risk evaluation, priorities, patient consent, futility, liability of medical professionals, seriousness
	1002	Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the surgery? So yeah, those are the first things we come up with.	support for patient, risk evaluation, priorities, futility, patient story

	1002	So if you have a patient who comes in who uses drugs, how much knowledge do you feel you have about the treatments they can use for someone who is trying to get off of it? Respondent: I don't know. I don't have that much knowledge, except for the surgical part. Interviewer: Would you ever want more training on this? Respondent: What's the benefit of doing the training? I'm happy to do it, but the amount of time – what's the rush now of doing the training events?	time constraints, SUD treatment, lack of knowledge, priorities, training, mechanical problem
	1002	Interviewer: What do you think about the term drug rehab? Respondent: I don't know. [Laughs] I mean, I'm not so interested in those patient care – except for the surgical part. So I'm not so interested in those. Interviewer: Do you think that drug rehab is different than drug detox? Respondent: I don't know. No comment.	rehab v detox, lack of knowledge, priorities, mechanical problem, left vs right side
	1007	First thoughts? Speaker 1: Yeah. For your patients who injects drugs, and need a valve replacement. Speaker 2: Um, I suppose no different than any other patient. Speaker 1: Do they have different operative and post-operative mortality complications compared to other patients? Speaker 2: Yes. Speaker 1: Okay… Um, can you please tell me my about that? Speaker 2: So, I mean, every patient is individual, but there are trends. A lot of these patients tend to be younger, so in some ways a healthier, which is what we're trying to assess, is the risk of surgery benefit. On the other hand, some social issues make them higher risk. Speaker 1: Okay. Um, does that impact the type of valve you give, so your choice to give mechanical versus bio prosthetic valves? Speaker 2: It does impact it, yes	perception of risk in PWID, age, priorities, valve preference

	1007	PICC line and go home? PICC line and stay in the hospital and PICC line and go to the nursery facility. Speaker 2: What do I think in which way? Speaker 1: It's an open ended question. We just want to know your, your perspectives on them Speaker 2: I think the unwritten standard today is that most people stay in house because of fear of liability. Speaker 1: Okay Speaker 2: Whether that's justified or not, that is kind of the most popular answer. Speaker 1: Okay, so what's the safest option? What would you think is the safest option and what's the best for this patient. Speaker 2: To stay in house.	post-operation care, priorities, liability of medical professionals, PICC line risk, follow-up care
	1017	S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	priorities, left vs right side, medical model, risk evaluation
	1017	There is the case of BLANK BLANK. So BLANK BLANK was a 30-year-old heroin user from the streets of BLANK who basically had endocarditis. I find him a very charming guy, so I did one valve replacement. About, oh, I don't know, 6 months later, he comes back and he now has still been using, and he promised me he'd stop. So I reoperated on him and did a homograft root replacement on him. Did great, actually. Six month later, he comes back and he's been using again, and now he's developed a big pseudoaneusrym that is a rupture of, uh, where we reconstructed him, so there's this big aneurysm. And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding. Recovered, and literally six months later I got a call that he had now infected his homograft because he's still using. So, I said, we're not going to do anything. I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point. Um, so that's my, my case that I will never forget about recidivism in drug users.	multiple surgeries, contract, perception of risk in PWID, relapse, priorities, second chance, deservingness, patient consent

	1013	Um, so probably my first question that I ask is whether they are still using or not so the first thought is where are they in the, so I think of their drug use as the primary condition that we are managing and that the valve infection is a secondary consequence really of the what the underlying condition is. So, its where they are in the spectrum of that, So its just like when I'm asked to see a patient who has cancer who also has valve disease the first question I have in mind is do they have metastatic cancer with 6 months to live, do they have an indolent prostate cancer that can go for years and years and years, where are they with their primary condition.	priorities, discussing addiction
	1013	How did you think about that decision? So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	priorities, save lives, SUD treatment, time constraints
	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness.	frustration, futility, commitment to recovery, liability of medical professionals, priorities, relapse
	1013	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Oh, boy. Um, well, I suppose, well not that's getting really complicated and its going to	pregnancy, priorities, save lives

		depend how far along she is in her pregnancy. Cardiac surgery is very high risk for fetal loss but I suppose we would probably be more inclined to operate if she was pregnant given that there is another life involved and the chance that we might be successful	
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy
	1009	Interviewer: Mortality, is that something, or does it impact what type of valve you might give them? Surgeon: Mortality from the sense of the operation? Interviewer: Mm-hmm. Surgeon: It's something you think about. You always want to offer and operation where you think there's a mortality benefit, that they have a better chance of living with the operation than without. Sometimes, you know, questions of futility come into play but that comes into play later rather than the initial evaluation. Interviewer: Can you say more about the futility piece? Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if you fix the heart, they're never going to return to a quality of life. Other times there are complications that have	futility, post-operation care, priorities, risk evaluation

		arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	
	1011	How did you approach that case? Or how have you approached these types of cases? So, like I said the first thing is how do we care for these patients medically. Try to optimize them from there shock perspective and then you have got to figure out you know what operation they need and what is the optimum timing for that operation. So, no different than what would be anybody else with an aortic root abscess without IV drug use.	medical model, priorities
	1011	n the case of this vignette how should this patient's opioid use disorder be treated and when? I think form my perspective what she needs right away, or what she needs first is the treatment for her cardiogenic shock and the problem that she has that she will require some sort of a surgical operation based on whatever the imaging suggests and then after that there has to be attention to her acute pain needs because it is a surgical procedure she is going to have some pain but as she weans away from her operation I think that is where the transition needs to happen.	timing of SUD tx, priorities, pain management, follow-up care
	1017	I: Alright. What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	risk evaluation, priorities, left vs right side

	1013	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? What are my first thoughts? Um, so probably my first question that I ask is whether they are still using or not so the first thought is where are they in the, so I think of their drug use as the primary condition that we are managing and that the valve infection is a secondary consequence really of the what the underlying condition is. So, its where they are in the spectrum of that, So its just like when I'm asked to see a patient who has cancer who also has valve disease the first question I have in mind is do they have metastatic cancer with 6 months to live, do they have an indolent prostate cancer that can go for years and years and years, where are they with their primary condition.	priorities, discussing addiction
	1013	So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	priorities, SUD treatment, save lives, time constraints
	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness	frustration, priorities, futility, relapse, commitment to recovery, liability of medical professionals

	1013	So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	priorities, commitment to recovery, PICC line risk, collaboration with addiction medicine, timing of SUD tx, support for patient
	1013	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Oh, boy. Um, well, I suppose, well not that's getting really complicated and its going to depend how far along she is in her pregnancy. Cardiac surgery is very high risk for fetal loss but I suppose we would probably be more inclined to operate if she was pregnant given that there is another life involved and the chance that we might be successful.	pregnancy, save lives, priorities
	1001	will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of reinfection will be coming, and that would be even wors	commitment to recovery, accountability, discussing addiction, paternalism, reinfection, priorities, risk evaluation
	1001	Interviewer: All right, and what terms do you use to discuss addiction? Do you ever use opiate use disorder or other terms? Respondent: No, I don't. I just use 'drug use.' That clearly means the patient has been taking heroin or cocaine. I don't think there is a recommendation or anything clear at this point. I think it's nothing to do with the self – and then [identify the gender] is a separate issue. I simply just say you should stop using those drugs. I get to that point. Yeah, that's what I want to hear from the patient.	discussing addiction, priorities

	1004	R: It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	commitment to recovery, deservingness, discussing addiction, priorities, support for patient, risk evaluation
	1004	, imagine that you've been operating on Katie, she's done well, she's linked into a methadone maintenance program, and one year later she's back in the hospital; now she has prosthetic valve endocarditis. So, like, have you seen this in people who inject drugs? Like, do you have any specific cases that come to mind? R: Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	priorities, commitment to recovery, deservingness, frustration, futility, perception of risk in PWID, contract
	1005	She needs to be stabilized and obtain all of her preoperative studies and have negative blood cultures before we would operate on her.	pre-operation care, priorities
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance

		Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	
	1008	Interviewer: Okay. Cool. And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, accountability, commitment to recovery, futility, post-operation care, priorities
	1018	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um, my first reaction is sympathy. It's an addiction, it's not a crime. And um, most of the time, and um, I think your question specifically mentioned substance abuse, injection drugs, ok, yeah, it's sympathy. And looking forward to figuring out if there is a way to help this person.	empathy, medical model, save lives, priorities

	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, pre-operation care, risk evaluation, valve preference, left vs right side
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, time constraints, priorities, training
	1012	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um. I wonder what kind of patient I am going to meet. Because they come, they sort of come in different favors. There's the sort of one that you know is kind of devastated and feels really terrible about what has happened and wants to get better and then there's one that's had this before and treated through it and it's like a revolving door and there is sort of a, you know, a spectrum of personalities and I kind of wonder which sort of patient I am about to meet.	deservingness, priorities, second chance, stigma
	1012	How did you approach that case? I replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	protocol, priorities, support for patient, accountability, defensive

	1012	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think it is a reasonable example. Do you think they are similar? Well in the sense that you know have a life-threatening problem, you know, what's different is the people that are uh, well couple things are different- one thing that is different is that in order to transplant a liver someone who's diseased their liver with chronic alcohol use, you have to get that liver from a donor which is a much more scarce resource than a valve which we can just pick off the shelf. So, in that sense I don't think it is a great example. And usually the valve, you know the endocarditis patients, it's more of an immediate life-threatening problem, whereas the liver cirrhotic is more of a chronic disease that they have developed over time. And another difference is the, when, my understanding is when they transplant alcoholic cirrhotics, they usually have demonstrated abstinence for a period of time which is generally, I would think 6 months or longer or else they have some other reason to think that they are absolutely not going to do it again. Um, and we don't have that luxury with endocarditis. They come in, they have a life-threatening problem, we can't wait 6 months to get that valve replaced.	liver vs heart, desired changes, priorities, commitment to recovery, time constraints
	1012	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So PICC line and go home is never and option because that basically gives them a mainline to use drugs so that is never an option. And there is no nursing facility, nursing company, antibiotic business that I am aware of that will manage someone with you know a history of IVDA in an outpatient setting with a PICC line. So, I don't believe that that is an option anywhere. PICC line and nursing facility- yes if possible and if the organism is one that could be potentially treated non-operatively or at least for a while to help stabilize the situation and then often what we do because it is very difficult to find nursing facilities that will take these people also because they have this terrible group of friends that often will bring drugs in and all this other stuff that surrounds the patient, they don't want them either, so they often will get left in the hospital for antibiotics for a period of time before they get	PICC line risk, priorities, post-operation care, liability of medical professionals

		their valve surgery. So, of your PICC line and go home – no; PICC line and nursing facility- yes but rarely available, so PICC line and stay in the hospital is the usual default.	
	1018	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um, my first reaction is sympathy. It's an addiction, it's not a crime. And um, most of the time, and um, I think your question specifically mentioned substance abuse, injection drugs, ok, yeah, it's sympathy. And looking forward to figuring out if there is a way to help this person.	priorities, empathy, save lives
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, risk evaluation, left vs right side
	1005	She needs to be stabilized and obtain all of her preoperative studies and have negative blood cultures before we would operate on her.	pre-operation care, priorities
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1017	I: Alright. What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	risk evaluation, priorities, left vs right side

	1004	It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	commitment to recovery, deservingness, desired changes, discussing addiction, priorities
	1004	Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	commitment to recovery, frustration, futility, priorities, risk evaluation, deservingness
	1016	How sick they are, and their ability to withstand surgery, and what is their likelihood of, um, refraining from using drugs if I put a, um, prosthetic valve in.	priorities, perception of risk in PWID
	1016	Um, in that case, um, the patient was brought to the operating room and had, um, um, reconstruction of their root and valve. I did have an extensive preoperative conversation with the family members, um, and, um, the patient, regarding the risks of the surgery, um, and that the importance of refraining from drugs afterwards. I: Looking back, is there anything different that you would change about your approach? S: Uh, in that particular case, um, no. The outcome was good.	patient consent, discussing addiction, priorities
	1006	need for immediate surgery versus ability to complete a course of antibiotics and psychosocial rehabilitation.	pre-operation care, risk evaluation, priorities
	1006	Interviewer: How did you approach the case? Interviewee: Well, there have been a few of 'em, the ones that were operable I operated on, the ones that had somewhat worse problems, you can even describe everything. If they were in renal failure and had a stroke, I might not operate on them. Interviewer: Looking back is there anything you would change about your approach? Interviewee: There's some instances where I would have operated sooner, but if the person arrives in shock, since I started CV surgery, unless there's a strong reason not to operate, you go ahead and repair the valve.	futility, priorities, perception of risk in PWID

	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	discussing addiction, commitment to recovery, follow-up care, frustration, patient story, priorities, risk evaluation, societal issue, SUD treatment
	1006	Interviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	data, deservingness, commitment to recovery, priorities, relapse
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness

		have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	
	1012	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um. I wonder what kind of patient I am going to meet. Because they come, they sort of come in different favors. There's the sort of one that you know is kind of devastated and feels really terrible about what has happened and wants to get better and then there's one that's had this before and treated through it and it's like a revolving door and there is sort of a, you know, a spectrum of personalities and I kind of wonder which sort of patient I am about to meet.	priorities, second chance
	1012	replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	save lives, priorities, accountability
	1012	Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so	priorities

		there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	
	1012	Do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? I mean sometimes. Those things sometimes weigh into your decision, sometimes they have little kids and you know those things influence what you do, but in general no.	age, empathy, priorities, liability of medical professionals, futility
	1010	I would certainly not put a PICC line in someone then send them home. If they came back because of documented drug use, then I think that is a disservice to the patient. PICC line and hospital I would have no issue with that that is usually what we do. PICC line and facility, there are two facilities that come to mind that patient's themselves know that it is easier for them to get drugs there than get drugs at home. PICC line and [specific rehab] I would say yes. PICC line and uh what's the one ? [Specific facility] Yes [specific facility], no. Uh there is another one too ? [Specific facility] [Specific facility], no. You know uh, I think talking to the patient and see what they think because you know they are addicted but they are not, you know they could be bad, they could be good, they could be very smart, they could be dumb, they could be anything, but they're addicted. Just like you know it makes no sense when someone talks to a patient loud, they're not deaf, they just have coronary disease, it's the same thing as well.	protocol, PICC line risk, follow-up care, priorities
	1014	S: She's young. You gotta give her a shot. You can't waffle here, because right now her, to have a serious conversation with her at this point is out of question. She is in shock. The valve needs to be fixed. Mechanical problem that needs a mechanical solution. Unfortunately, you know, it is going to be a little bit more, uh, technically demanding and this is not a straightforward AVR, probably a root replacement, and to see what her outlook looks like on the, on the addiction, uh, on the addiction level is, is not, we don't have time to	priorities, time constraints, age, save lives

		talk to her. We just have to operate on her. She's too young, can't let her go.	
	1014	I: Gotcha. How knowledgeable do you feel about the available treatments for people who use drugs? S: To a certain extent. You know, I mean, I mean, what do you mean treatments? I: Um, like, how knowledgeable are you about, like, methadone programs and treatment programs? S: I can, I can, you know, a little bit, but I, for me, all I need to do is to be the bridge to connect them with the right people, but I can't, I can't just have a deep, deep discussion.	lack of knowledge, SUD treatment, priorities
	1011	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? The first things are medical. Thinking about the guidelines if the patient needs an operation, what is the physiological state, by that I mean what are the anatomic findings, what are his echo findings, and just exactly what I would think about any other patient who has a mechanical valve lesion.	protocol, data, priorities
	1005	She is in cardiogenic shock from severe aortic insufficiency, and there is a concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Interviewee: Yes. Interviewer: How did you approach that case, and how would you approach this case? Interviewee: She needs to be stabilized and obtain all of her preoperative studies and have negative blood cultures before we would operate on her.	pre-operation care, priorities
	1005	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: Yes. Interviewer: If so, what questions did you ask, what are some of the terms you use to discuss addiction? Interviewee: I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in	discussing addiction, SUD treatment, commitment to recovery, patient consent, priorities, risk evaluation

		rehabilitation. Interviewer: Have you heard of the term opioid use disorder or used it when talking with a patient? Interviewee: Yes, I've heard of that term, but I haven't used that term with a patient.	
	1014	She's young. You gotta give her a shot. You can't waffle here, because right now her, to have a serious conversation with her at this point is out of question. She is in shock. The valve needs to be fixed. Mechanical problem that needs a mechanical solution. Unfortunately, you know, it is going to be a little bit more, uh, technically demanding and this is not a straightforward AVR, probably a root replacement, and to see what her outlook looks like on the, on the addiction, uh, on the addiction level is, is not, we don't have time to talk to her. We just have to operate on her. She's too young, can't let her go.	age, time constraints, priorities, save lives
	1014	I: Gotcha. How knowledgeable do you feel about the available treatments for people who use drugs? S: To a certain extent. You know, I mean, I mean, what do you mean treatments? I: Um, like, how knowledgeable are you about, like, methadone programs and treatment programs? S: I can, I can, you know, a little bit, but I, for me, all I need to do is to be the bridge to connect them with the right people, but I can't, I can't just have a deep, deep discussion. I: Do you want to receive more training on that sort of thing? S: Why not? Yeah, absolutely.	SUD treatment, priorities, lack of knowledge
	1009	What are some of the first things that you think about when you're asked to evaluate someone who injects drugs for a valve replacement? Surgeon: What is the microorganism, what valve is infected? Is it on the right side of the heart? The left side of the heart? Do they have heart failure? Have they had thromboembolic complications?	priorities, protocol, pre-operation care, risk evaluation

	1009	Mortality, is that something, or does it impact what type of valve you might give them? Surgeon: Mortality from the sense of the operation? Interviewer: Mm-hmm. Surgeon: It's something you think about. You always want to offer and operation where you think there's a mortality benefit, that they have a better chance of living with the operation than without. Sometimes, you know, questions of futility come into play but that comes into play later rather than the initial evaluation.	priorities, risk evaluation, save lives
	1009	Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in cardiogenic shock with severe heart failure and a root abscess, they need an operation.	risk evaluation, deservingness, priorities, protocol, save lives
	1009	Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	administration, follow-up care, priorities, multidisciplinary group
	1009	Re: the treatment of their addiction: How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn	priorities, knowledge, time constraints, training, SUD treatment

		about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	
	1009	I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration with addiction medicine, priorities, follow-up care, changes over time, discussing addiction, frustration, futility
prioritization secondary			
	1012	I replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	prioritization (secondary)

	1012	The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem.	prioritization (secondary)
	1012	So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up,	prioritization (secondary)
	1012	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was 1) pregnant? Um, yes it probably would but it would depend on how pregnant she was. If it is early pregnancy than she probably is going to lose the, lose the baby, and if it is later pregnancy it going to certainly jeopardize the baby, so yeah that would complicate things, it would depend on what stage of pregnancy she was.	prioritization (secondary)
	1012	Tell me about the operative risks of reoperation verses the original operation. So reoperation for just a degenerating prosthetic valve probably carries a little bit extra risk but not too much, it's always a little harder because there is scar tissue and stuff, a reoperation in someone like this you know not only is there scar tissue, but then there is infection and inflammation and all that other stuff that can complicate the operation. So, it definitely will make the second operative riskier. You also have a patient who has already relapsed once and reinfected their valve and that certainly elevates the risk that that's going to happen a third time. So, I think the risks around the time of surgery go up and the risks afterwards go up a lot.	prioritization (secondary)
	1009	Interviewer: What are some of the first things that you think about when you're asked to evaluate someone who injects drugs for a valve replacement? Surgeon: What is the microorganism, what valve is infected? Is it on the right side of the heart? The left side of the heart? Do they have heart failure? Have they had thromboembolic complications?	prioritization (secondary)

	1009	Interviewer: Mortality, is that something, or does it impact what type of valve you might give them? Surgeon: Mortality from the sense of the operation? Interviewer: Mm-hmm. Surgeon: It's something you think about. You always want to offer and operation where you think there's a mortality benefit, that they have a better chance of living with the operation than without. Sometimes, you know, questions of futility come into play but that comes into play later rather than the initial evaluation. Interviewer: Can you say more about the futility piece? Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if you fix the heart, they're never going to return to a quality of life. Other times there are complications that have arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	prioritization (secondary), disassociation (secondary)
	1009	Interviewer: Do you ever worry about getting a viral infection like HIV or hep C? Surgeon: Sure. But we worry about that with any patient. I think it – by nature of the work that we do, we're dealing with sharp edges from bones, sharp instruments, needle sticks and things are common in the operating room and they're far more common than reported because to be honest, you know, most of the time when surgeons get stuck with something they just keep moving on. They don't go to occupational health. It's just – there's a lot of needles and things that are passed around. And so is it a concern, yes. But it's kind of a concern with any patient.	prioritization (secondary)

	1009	Interviewer: So now I'm going to introduce a clinical vignette so in this case, Katy, is a 35-year-old woman who uses heroin via injection. She has staph aureus, [spectoremia] and aortic valve endocarditis. She's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So have you had personal experience caring for a patient in a similar situation? How did you approach that case? How would you approach this kind of case? Surgeon: Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in cardiogenic shock with severe heart failure and a root abscess, they need an operation.	prioritization (secondary)
	1009	Interviewer: Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	prioritization (secondary), rationalization (secondary)

	1009	Interviewer: Can you tell me a little bit about the operative risks of re-operation versus the original operation? Surgeon: So the operative risk is higher the second time around because a lot of scar tissue forms in the mediastinum and so the risk of sternal reentry in terms of injuring the right ventricle or any other structures when you're trying to dissect them free are higher for any redo operation. Depending on what you did the first time, sometimes if you've done a complete aortic root replacement with a homograft, that redo operation is fraught with extraordinary risk. It's very, very hard. These things get calcified. It's very hard to get them out. And the risk of the redo can vary widely but it's a lot harder than the first time around.	prioritization (secondary)
	1006	need for immediate surgery versus ability to complete a course of antibiotics and psychosocial rehabilitation.	prioritization (secondary)
	1006	Interviewer: How did you approach the case? Interviewee: Well, there have been a few of 'em, the ones that were operable I operated on, the ones that had somewhat worse problems, you can even describe everything. If they were in renal failure and had a stroke, I might not operate on them. Interviewer: Looking back is there anything you would change about your approach? Interviewee: There's some instances where I would have operated sooner, but if the person arrives in shock, since I started CV surgery, unless there's a strong reason not to operate, you go ahead and repair the valve.	prioritization (secondary)
	1002	Does he need the valve operation or not – the indication for the surgery.	prioritization (secondary)

	1002	Respondent: How would I approach? So, preoperative evaluation – you know, how serious the cardiogenic shock is, actually. You know, if the patient is in severe shock, it just depends on if it's hemodynamic shock, or even more hemodynamic and also metabolic shock, which means if the liver is dead and the kidneys are dead, then why do we need to do the surgery? So that's one thing we need to make sure, the surgical indication about the shock. Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result. Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the surgery? So yeah, those are the first things we come up with.	prioritization (secondary), rationalization (secondary)
	1002	Interviewer: If a patient has 100-percent mortality without surgery but have a 50-percent mortality with operation, is it worth taking the patient to the OR? So if you know they will not survive without the surgery – Respondent: Yeah, it totally depends on the patient, you know? The age or whatever. Yeah, if the patient is 80 years old or something, then why do I need to take the patient?	prioritization (secondary)

	1011	Do people who inject drugs have different operative and post-operative mortality? Um, I don't know the data for that. The general sense is that it is not the operation that is difficult. I think match for match these patients may actually be healthier than some of the other infections that we do. Infections in and of themselves have a higher mortality than non-infectious operations. That means that an aortic root replacement that is done for aortic aneurysm has a much lower mortality than an aortic root replacement that is done for endocarditis. Aortic, prosthetic aortic valve infections, which is done, redo aortic valve replacement which is done because the aortic valve over time deteriorated- had structural deterioration- has a much better outcome than if the valve were to get infected. So the endocarditis part surely makes the outcomes much worse but if you are asking me the question that does endocarditis unrelated to IV drug use is that different from endocarditis related to drug abuse I don't know the answer to that question.	prioritization (secondary)
	1011	So, like I said the first thing is how do we care for these patients medically. Try to optimize them from there shock perspective and then you have got to figure out you know what operation they need and what is the optimum timing for that operation. So, no different than what would be anybody else with an aortic root abscess without IV drug use.	prioritization (secondary)
	1011	n our situation we don't make that an active hard stop for us because we are not limited by the amount of valves that we have or other things we have so we would like to give these patients a chance, we want to give them a chance we want to give them a shot at getting better so sometimes we do accept less than ideal situations.	prioritization (secondary)
	1011	if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse.	prioritization (secondary), redemption (secondary)
	1011	I would favor the PICC line and go to the nursing facility. Some of that is made out of pragmatism, being watchful, we end up canceling cases because we don't have enough ICU beds, or OR beds or hospital beds or whatever that is. You know one way we seem like we just want to do more cases, but we see that as those are real patients who need to be taken care of and if we keep someone in the	prioritization (secondary)

		hospital that doesn't need to be in the hospital then that is blocking someone else's care.	
	1011	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, I don't think so. I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one additional thing that I have to but not let that impact the decision making.	collaboration (secondary), prioritization (secondary)
	1011	Tell me about the operative risks of reoperation verses the original operation. There is data about that, there is data out there to compare risks of first operation verses redo operation and it is a little bit heterogenous data but I think most of us would feel that there is some extra technical complexity to a redo operation without the endocarditis but you could get nearly equivalent outcomes in the second operation as you were the first operation. In the setting of endocarditis there is clear data to show, multiple papers, that if you have to do an operation for endocarditis mortality goes up for the first operation, so first operation with and without endocarditis and second operation with and without endocarditis every time endocarditis and infection make the mortality go higher.	prioritization (secondary)
	1016	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? S: How sick they are, and their ability to withstand surgery, and what is their likelihood of, um, refraining from using drugs if I put a, um, prosthetic valve in.	prioritization (secondary), redemption (secondary)

	1016	I: Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: Um, from IV drug use or from endocarditis in general? I: Um, I think just endocarditis in general, like does age impact your decision to operate on valve infection? S: Uh, not so much. I, not necessarily 55 or 25, um, I think that it's more comorbidities, um, you know, factor in. If it's a 55-year-old that's end-stage-renal and, you know, can't walk and has all these other issues, um, you're more, you're definitely more likely to operate on the 25-year-old, but if it's an otherwise healthy 55-year-old it shouldn't… I think the interesting question is, what do you do if it is more than an 80-year-old, and, um, medical management tends to be more favored in those cases.	prioritization (secondary)
	1016	I: Ok. Does anything specific help you choose, like the patient's housing, insurance, job status, child care? S: Um, do you mean in terms of leaving with a PICC line or… I: Yeah, like if whether they stay in the hospital, whether they go home, whether they go to a long-term care facility? S: Truthfully, um, I would say, no. Um, and the reason being is, if you're sick, I'm going to give you the care that you need to get through your illness. I understand there's a lot of social factors that get involved, but to me, these are very high risk patients, um, and there's a chance for, again, a lot of misuse of PICC lines, um, and I think that, um, you know, as much as you empathize with the needs for child care and all these other things, um, I feel like I still have to deliver the appropriate level of medical care.	responsibility (secondary), rationalization (secondary), prioritization (secondary)
	1016	I: Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Um, that's a really hard question. Um, I think that when you see patients like that, you, you definitely have to have a multidisciplinary approach, and, um, you know, surgery depending on the trimester, um, can be, um, um, contraindicated, um, but, you know, IV drugs in pregnancy is, is never a good thing. Um, and so, I think there has to be really a team, a team approach on that, about what to do with the pregnancy, um, is, should the pregnancy be terminated, and should she have an open-heart surgery, and kind of what are the…it's, it's a very complex issue.	collaboration (secondary), prioritization (secondary)

	1003	Interviewer: Excellent. Thank you. So, what are some of the things that you consider when you're asked to evaluate a person who injects drugs for a valve replacement? Respondent: Well, first of all, is it medically indicated? Interviewer: Mm-hmm. Respondent: Based on their clinical presentation, the presence of fevers, the presence of [bacteremia]; and we look at the echo images of a particular valve that's infected, to determine how badly infected the valve is, whether or not medical therapy will be sufficient or, on the other extreme, the valve is so destroyed, the patient [that's] [unintelligible 0:00:53] compromised from the valve destruction that surgery clearly is indicated. Other times, it's not so clear, it's not a black and white issue. In some cases, we're – requires clinical judgement as to whether or not surgery is indeed indicated. And then the timing is also an important issue. We need to move ahead soon, or can we afford to wait a period of time to feed them antibiotics and see how they respond. So, a lot of clinical judgment goes into assessing these patients, and I rely on objective data based on the laboratory values; the presence perhaps of some fevers. But also, some of my previous experience managing these patients; I rely on my own personal experiences and knowing what seems to work and what doesn't work.	prioritization (secondary)
	1003	Yeah, we – as you probably know, we're involved in a study looking at that - Dr. Wurcel is the lead investigator on that – what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood	prioritization (secondary), rationalization (secondary)

		of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	
	1003	However, if someone is critically ill, and time is of the essence, then we will move ahead and do surgery regardless of whether or not I think they're going to be able to be successfully treated from the addiction standpoint. On the other hand, if a patient is not critically sick, and they're having a medical indication for surgery, however if they're not in a program, where I think they're going to be successful in avoiding use of drugs again, I may postpone surgery until they get into a rehab program. So, once we do the surgery, I know they'll be on the road to recovery. But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	redemption (secondary), prioritization (secondary)
	1003	Yeah. Well, they would undergo – we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive	prioritization (secondary), paternalism (secondary)
	1003	So then, you could have a live patient to have this discussion with. So, first and foremost, is to save the patient's life, so I'd recom – I would put the patient on a schedule, no matter what the social situation is, because I mean, we're here to help people and even you know, if she	prioritization (secondary), rationalization (secondary)

		doesn't have surgery, she's going to die. So, that would be my approach.	
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	rationalization (secondary), SUD (secondary), collaboration (secondary), prioritization (secondary)
	1003	Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously. If it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery.	redemption (secondary), prioritization (secondary), paternalism (secondary)
	1003	Interviewer: Okay. Okay. Okay. What about – so, would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? Respondent: No. Interviewer: Okay. Respondent: It's – you put someone on the lung machine, it puts the fetus at risk for fetal	responsibility (secondary), prioritization (secondary)

		demise. So, that's my concern. Whether or not to offer surgery, no, I mean, I'll - pregnant or not pregnant, if they need an operation, we'll do it. It's just, we're - what's going to happen to the fetus during the operation? That's my concern.	
	1003	Interviewer: No, I think in this example, we're assuming that she's like on methadone, and stable on it. Respondent: Well, she needs an op – if she needs an operation, we'll certainly do it.	prioritization (secondary)
	1003	Most of the time, someone comes back with a second valve operation, the existing valve they have is going to be infected. But in the rare circumstance not the case, we would offer them surgery, certainly. And again, operation does [unintelligible] more risk, because there is scar tissue on the heart and so forth. Interviewer: Mm-hmm. Or, what if it was like a mechanical valve that had been used the first time? Respondent: Yeah. We've seen that. Well, we'd take it out and put another valve in; probably another mechanical, unless they've shown that they can't tolerate Coumadin. But we'll put a mechanical in and if they can – they do tolerate Coumadin, yeah.	prioritization (secondary)
	1003	Interviewer: If the patient has 100 percent mortality without surgery, and like a 50 percent [operative] mortality, like would you say it's worth taking the patient to the operating room? Respondent: If they're young? Interviewer: Yeah. Respondent: Yes. Yes. Don't ask what I consider young, but - Interviewer: [Laughter] Respondent: It changes as - we all get older, so - Interviewer: Yeah, yeah.	prioritization (secondary)

		Respondent: - the threshold goes down. But anyhow, yeah, if they're young, I'll – yeah. [If it's the only chance] they have, sure.	
	1003	Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive. So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates. I just wish there was more – I just wish all the people involved in the care of these patients	responsibility (secondary), prioritization (secondary), collaboration (secondary)

		realize that there's certain times you've got to move ahead and intervene soon. So, it's part of my job, actually, to educate people. And it's been a struggle. Yeah.	
	1015	I: Does the patient's commitment to treatment impact your surgical decisions at all? S: No. I: Ok. And how come? S: Uh…because there's, uh, there's an identifiable, you know, problem, surgical problem, so that needs to be addressed and whether or not they are planning on quitting, it is not my place to hypothesize about that. It is just something that you would figure out after the fact.	prioritization (secondary)
	1015	I: Yeah. What…does it impact your decision to operate if their endocarditis is related to drug use? S: Um…sometimes. It really depends on how hard of a reoperation I think it's going to be. I: Gotcha. S: If I think I that, um, I'm going to cause more harm by reoperating and they continue to use IV drugs, then my decision is going to be, no I'm not going to reoperate. If there is something that is potentially related to past use and can be easily fixed, of course I would offer an operation. If they are active using and reinfected their valve, and they've got something that is easily fixable, then I'd consider doing it.	prioritization (secondary), redemption (secondary)

	1015	I: Ok. Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Ok. Does age at all impact your decision to operate on prosthetic valve infections? S: Um, only from a medical standpoint. I: Ok. S: The, you know, obviously the older they get the sicker they are, so yes it does in that respect, but not as a social determinant of whether I should operate. I: What about the different types of valves? Does age determine whether… S: No. I: Ok. So… S: Well, wait, yes it does actually. If, I mean, if you've got native valve endocarditis and you are a young person, you probably want to get a mechanical valve, so age does influence that decision. And likewise, if they are older, you probably want to put a bioprosthetic in	prioritization (secondary)
	1015	I: Yeah. Would your approach change, um, I think it is talking about operating on Katie, if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Yes. Well, the guidelines say that if you want to consider a mechanical valve in a pregnant woman, you are welcome to do so as long as they are stable on a low-dose of warfarin over a period of time. Obviously, that being said, a mechanical valve would not be my first choice.	prioritization (secondary)
	1015	I: Gotcha. Tell me about the operative risks of reoperation vs. the original operation. S: Um…bleeding, uh, damage to underlying, you know, intrapericardial structures. Uh, respiratory failure, I mean everything that you would say for an initial operation is higher. I: Ok. S: Um, and more rhythm disturbances, heart block, etc.	prioritization (secondary)
	1015	atient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Uh, yeah.	risk evaluation, prioritization (secondary)
	1011	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? The first things are medical. Thinking about the guidelines if the patient needs an operation, what is the physiological state, by that I mean what are the anatomic findings, what are his echo findings, and just exactly what I would think about any other patient who has a mechanical valve lesion	prioritization (secondary)

	1007	Speaker 1: Thank you. What was your, what are your first thoughts when you consider, what are the first thoughts you consider when you're asked to evaluate a patient who injects drugs for your valve replacement? Speaker 2: First thoughts? Speaker 1: Yeah. For your patients who injects drugs, and need a valve replacement. Speaker 2: Um, I suppose no different than any other patient.	prioritization (secondary)
	1007	Speaker 1: All right, thank you. Now I'm going to introduce a clinical vignette and then you would answer questions subsequently. Katie's a thirty four year old woman who uses heroin by injection drug use. She has staphylococcus Aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is there is concern for an aortic roots abscess. So have you had a personal experience caring for patients with a similar situation? Speaker 2: Yes. Speaker 1: And how did you approach this case? Speaker 2: Um, yes and we approach it like, like any other patient. Speaker 1: Okay Speaker 2: Come up with the best plan for, for that patient. Speaker 1: Okay. So if you were to address Katie's issue, how would you approach Katie from the vignette? Speaker 2: Approach it? I mean in which way? I mean we would receive the patient, evaluate the patient. Speaker1: Yeah Speaker 2: Um…If she needed surgery, she was a reasonable candidate, which so far it looks like she has an indication, then we'd do surgery.	prioritization (secondary)
	1007	Speaker 1: Okay. Thank you. So how should these patients with opioid use disorder, so Katie, how should she be treated and when do you think you would be appropriate for her to be treated? Speaker 2: Treated surgically or … Speaker 1: Treated surgically Speaker 2: So surgically. Um, she's toward the end of the spectrum that needs surgery very soon because of her aortic insufficiency, which is in the acute phase, its poorly tolerated. So she's somebody that would probably need surgery sooner than later, would need some medical optimization in an ICU setting. Um, probably would need some reformed social addiction medicine engagement early on. But	prioritization (secondary)

		it's, it's not going to do much at this point and it's more for the recovery and future.	
	1007	Speaker 1: Okay. Um, how about your experience with managing withdrawal in this population? Speaker 2: Um, I mean, we don't really manage with withdrawal. Speaker 1: Um, do withdrawal symptoms impact your ability to operate or manage the patient's pain? Speaker 2: Well, uh, uh, opioid withdrawal. Speaker 1: Yeah. Yeah, of course. Everything. The answer is yes to anything and everything.	responsibility (secondary), prioritization (secondary)
	1007	So you operate on Katie from the first vignette and she does well, she's linked to a Methadone maintenance program. About one year later, she's back to the hospital and she has prosthetic valve endocarditis. So have you seen prosthetic valve endocarditis in people who inject drugs? Speaker 2: Yes. Speaker 1: Okay. Any specific cases come to your mind? Speaker 2: Too many there. Speaker 1: Tell me your thoughts about management decisions for these relapse cases. Speaker 2: Well, I mean we manage them the same as any other patient. You um, you know, assessing the risk, the benefit, surgery, support system. Speaker 1: Okay. So does it impact your decision to operate if the endocarditis is related to drug use? Speaker 2: Yeah, everything impacts our decision to operate.	prioritization (secondary), disassociation (secondary)
	1007	Speaker 1: All right, thanks. Can you please tell me about the operative risk for reoperation versus your original operation? Speaker 2: Um, re operation is always, um, from a technical standpoint is always considered much harder. Um, and then there's all the other factors that need to be considered.	rationalization (secondary), prioritization (secondary)

	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	prioritization (secondary), redemption (secondary), blame (secondary)
	1008	Interviewer: Does it impact the kind of valve that you would give them the first time? Respondent: Well, people that inject drugs tend not to live as long as people that don't. So, I would tend to put more tissue valves in. I don't think there's a difference in, you know, re-infection. But I think I would put more tissue valves in these people, which is a reason they're going to be on Warfarin, anyway. Then I would put them in a mechanical valve if they're young.	prioritization (secondary)

	1008	Interviewer: Okay. Good to know. Okay. So, now I have a clinical vignette. So, in this situation, Katie is a 34-year-old woman who uses heroin via injection drug use and she has staph aureus bacteremia and aortic valve endocarditis. At this point, she's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So, first, like have you had experience caring for a patient in a similar situation? Respondent: Oh, yeah. Interviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	prioritization (secondary)

	1008	Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem.	collaboration (secondary), prioritization (secondary)
	1008	Interviewer: And then what about your experience to manage withdrawal in this population? Respondent: You know, we keep them on opioids. So, we don't see them withdrawal too much. We've not really had that experience a whole lot. Because they're on those kinds of basal level of opioids to keep the withdrawal symptoms, really, to a minimum. I really don't think they -- we have that much on our service, the withdrawal symptoms.	withdrawal management, prioritization (secondary)
	1008	Interviewer: Okay. Okay. And then what about like age? So, if a 25-year-old with prosthetic valve endocarditis, would you look at that person differently than someone who's 55 and had prosthetic valve endocarditis? Respondent: Unless they're really elderly, I don't think that would have much impact. Interviewer: Okay. And if they were elderly? Respondent: Well, we're talking about drug addicts or? Interviewer: Yeah, I think so, in this case. Respondent: Age doesn't matter. There aren't too many 80-year-old drug addicts. There's some 50-year-old but they usually die when they're 30, 40. Interviewer: Yeah. Does it impact -- does age impact your -- the type of valve you might give someone? Respondent: Yeah. If they're 20 or 30 or 40, I would put in a mechanical valve. If they're above the age of 50 and a drug addict, I would definitely put in a tissue valve.	prioritization (secondary), blame (secondary)

		Interviewer: Why? Respondent: Because there is risk of the valve clotting off if you don't take your Coumadin. And drug addicts tend to very unreliable people. On the other hand, you don't want the valve to wear out, a biological valve out. So, you have to do it again in 10 or 15 years. So, with the younger patients, I would put in a mechanical valve. Interviewer: They last longer? Respondent: Huh? Interviewer: They last longer? Respondent: Yes, they will. They tend to last forever. Unless you get them re-infected.	
	1008	Interviewer: Yeah. What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	rigidity (secondary), responsibility (secondary), prioritization (secondary)
	1008	Interviewer: And, so, would your approach change if you had learned -- like when Katie presented with prosthetic valve endocarditis, she was pregnant? Like what would your treatment look like for someone who's pregnant? Respondent: Well, I probably would be more apt to operate or -- like doing surgery on	prioritization (secondary)

		somebody who's pregnant is at a very high risk for, you know, having spontaneous abortion.	
	1008	Interviewer: Can you tell me a little bit about the operative risks of re-operation versus the original operation? Respondent: Yeah, it's a riskier operation. Interviewer: Yeah. Why? Respondent: Because it's all scarred in. You got to take the old valve out, putting a new valve in. There's increased risk of re-infection. Those are the reasons.	prioritization (secondary)
	1013	Do they have different complications? Uh, so they may have complications related to liver disease, so uh, its not infrequent for them also to have hepatitis C so they may have some element of cirrhosis associated with that, obviously, peri-operative pain management is more challenging but other than that I don't think so.	prioritization (secondary)
	1013	Do you worry about getting viral infections like Hep C and HIV? Sure. I worry about that with all the patients that I operate on	infection risk to surgeons, prioritization (secondary)
	1013	So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	prioritization (secondary), blame (secondary), responsibility (secondary)
	1013	Now if people want to say its related to, that the parallel has to do with behaviors then I would say a lot of diseases that we treat are related to our behaviors whether its obesity, diabetes which leads to coronary artery disease which we treat all the time, or smoking which leads to coronary artery disease which we treat all of the time I mean a lot of conditions that adults get there are behavioral factors that contribute, so I don't think that's a legitimate criticism.	SUD (secondary), prioritization (secondary)
	1013	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Oh, boy. Um, well, I suppose, well not that's getting really complicated and its going to depend how far along she is in her pregnancy.	redemption (secondary), rationalization (secondary), prioritization (secondary)

		Cardiac surgery is very high risk for fetal loss but I suppose we would probably be more inclined to operate if she was pregnant given that there is another life involved and the chance that we might be successful.	
	1013	Tell me about the operative risks of reoperation verses the original operation. So, um, in general terms, the operative risk of redo valve replacement the first time around is not hugely different from the operative risk from the first operation except in this scenario where you are talking about prosthetic valve endocarditis. So, if you are talking about a redo aortic valve replacement for structural valve deterioration of the valve, the valve just wore out, the operative risk is not too different between the first operation and the second operation; it's a little higher with the second operation. If you are talking about for infection though and prosthetic endocarditis the operative risk if 10-fold higher. So, its much higher risk and that is because of the complexity of getting out the old prosthesis, getting rid of all the infection and putting in, doing the reconstruction that is required to get the new valve in.	prioritization (secondary)
	1013	So, that's the way it usually gets presented to you by the medical student on the medicine service and I don't think about it that way. The way I think about it is the question of do I think that an operation is in the patient's best interest or not. So, lets imagine that the patient has, is an IV drug user, they've got prosthetic endocarditis, they've continually been using intravenous drugs, even in the hospital, and we see that, too right? Um, and then you presented that person to me and you say ok they have prosthetic valve endocarditis, its staph endocarditis, they've got an annular abscess they've got a mortality rate of 100% if you don't operate and they have been using drugs while they have been in the hospital, I don't think an operation is in their best interest. Could we potentially get then through the operation from a technical standpoint, yes, but do I think that we have a likelihood of restoring them to health, I would say no because their underlying condition is so severe. So, I think it is very seldom as simple a question as 100% without and 50% with. Have I adequately pivoted? And avoided answering that question? That's the way I think about it.	prioritization (secondary), rationalization (secondary)

	1014	S: It is not a single physician issue. It is a multi, it should be a multi-disciplinary approach, I mean it should be. I've been doing this for 14, 15 years now, and my understanding of those patients has dramatically changed with experience and data coming out. It is not surgery, more often than not, is not the solution, and what we do is, more often than not, um, is palliative to say the least. If, post-operatively, these patients are not managed, in one way or another by specialized people, experts, whether it comes infectious disease, psychiatry, drug addiction people, and so on and so forth, and social support, if we don't make that leap for that, honestly, we're running a vicious cycle.	prioritization (secondary), SUD (secondary), disassociation (secondary)
	1014	S: She's young. You gotta give her a shot. You can't waffle here, because right now her, to have a serious conversation with her at this point is out of question. She is in shock. The valve needs to be fixed. Mechanical problem that needs a mechanical solution. Unfortunately, you know, it is going to be a little bit more, uh, technically demanding and this is not a straightforward AVR, probably a root replacement, and to see what her outlook looks like on the, on the addiction, uh, on the addiction level is, is not, we don't have time to talk to her. We just have to operate on her. She's too young, can't let her go.	prioritization (secondary), disassociation (secondary), SUD (secondary)
	1014	S: Um, not really, I mean, not really, you have to, those are, so…maybe, we should talk about this a little bit earlier, but there is more than one valve that can get infected. The aortic valve clearly is a mechanical problem, and they could die, I mean, she has wide open AR, her ventricle is not tolerating that, and she needs to go. Mitral valve, sometimes is the same. Tricuspid, on the other hand, is a different ball game. The tricuspid valve, I rarely operate on those patients in the acute setting because they can tolerate, particularly younger people, they can tolerate severe tricuspid regurgitation, you know. Hemodynamics rarely, they're hemodynamically stable unless they are in septic shock, which is even more of a cause, of a reason not to operate on them, to get them through the antibiotics, if they embolize it goes to the lung so we can always treat it, even if they develop an abscess, so those patients we can see them in a nonacute setting and will take it from there. But, unfortunately, the left-sided valves, the mitral, the tricuspid (TRANSCRIPTION NOTE: ERROR? SUBJECT LIKELY MEANT AORTIC BASED ON EMPHASIS ON LEFT-SIDED VALVES REQUIRING	prioritization (secondary)

		MORE URGENT INTERVENTIONS.), they usually present, their presentation like this, and your hands, you have to operate on them.	
	1014	S: Here we go. I rely on the, again, on people helping us out with this, the critical care, the intensivist, because those, those withdrawal, they can get into trouble, especially if you just rush to an operation for one reason or another. And, um, not rush, but you didn't see that they're gonna go into the throe, and after the operation, they are in bad shape, at a minimum they can rip their breastbone apart, they don't wake up that quickly from the anesthetic, you know, they are still intubated, they're wiggling in bed, and they end up hurting themselves, and the mediastinum, if they tear open their breastbone, they can get infected and go from one thing to another. It is a medical problem more than anything.	prioritization (secondary), collaboration (secondary)
	1014	If the options were to have a PICC line and go home, have a PICC line and to a nursing facility, or have a PICC line and stay in the hospital, what do you think is the safest option for the patient? S: Hospital is, I don't know if it is safe, to be honest. We had, we had a patient that arrested on the floor, he was using in the bathroom after a valve operation. It was not my patient, it was one of my partners' patient. I walked in, and I saw them doing CPR, they found a needle, they found a syringe and needle in the bathroom. So, somebody, these things happen, you know. Probably safer, than home, you know. Maybe nursing home or a rehab facility, I don't know. I mean, again, it all depends on, on social, you know, insurance, and all these things. And, can you believe, you know, keeping somebody in the hospital for six weeks, getting antibiotics, occupying a bed? Nobody going to be happy, the hospital not going to be happy, the patient won't be happy, the third-party payer won't pay for it even if they have it, so, here we go.	prioritization (secondary)

	1001	mainly the cardiac perspective, but we have a standard protocol that you evaluate a patient that warrants surgery. That includes all the organ functions. On top of that, we typically screen the patient for hep C and HIV. I think that's also what [unintelligible 00:02:14] recommends. It's basically a piece of information that we would want to have before the patients are taken to the OR. Mainly the focus is about the cardiac function, the operating risk, and the prognosis if possible.	prioritization (secondary)
	1001	The valve surgery certainly carries the different level of risk. So each value has different technical difficulty or aspect. For example, mitral valve – the surgery would be more challenging than aortic valve surgery. The [redo] surgery will be more difficult than the first-time operation. So I would say everybody is different. Every patient is different. So we will not know the patient's individual risk for surgery until we complete their preop testing and evaluation.	disassociation (secondary), prioritization (secondary)
	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	prioritization (secondary), paternalism (secondary)
	1001	Yeah, because all the narcotics are associated with side effects, so there's a limit to use. So overuse causes problems, can delay their progress from recovery [overlapping noise] even affect the hemodynamics. Typically after a surgery, after three or four days the pain should be minimal. That is usually the time for patient to resume some degree of their activity at baseline, but our experience is the [possibility] of recover for the drug use patients is a little bit delayed. It's more or less related to the overuse of narcotics postop.	prioritization (secondary), blame (secondary)
	1001	I don't think so. I think it is only based on the medical need, yeah. We have to take into consideration the status of pregnancy, but the care should be centered around the endocarditis.	prioritization (secondary)

	1001	Yeah, because every time we've done something in the chest – and it's similar in other territory – there's always scar tissue formation. And going to the chest again to have the area exposed will be much more challenging, potentially given the history of infection. So the risk of injury, interoperative, will be high, and the operative mortality will be at least double, sometimes even higher depending on the complexity of the operation.	prioritization (secondary)
	1001	If it's 100 percent, [then it is now], but it's hard. Sometimes we think patients are inoperable. It doesn't mean that the patient cannot – that the operative mortality will be 100 percent. It's hard. To be honest, if somebody has multiple-organ failure, than the surgery will be contraindicated. They cannot even survive anesthesia. So it's a different story. But a lot of people are [deemed] inoperable, not just based on the operative mortality itself. You know, it's related to other issues. Sometimes we take into consideration even the social issues – you know, the lifestyle or the age, for example.	prioritization (secondary), rationalization (secondary)
	1010	In people who inject drugs, do they from your perspective have different operative mortality or post-op complications? They, uh, it's a difficult question to answer because they are younger than the average. So, I would say that their outcomes are better than the outcomes from the standard AV or the standard MV that we do. So, thinking out loud here, their operative outcomes are actually better than outcomes of the standard population.	prioritization (secondary)
	1010	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Multiple times. How did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather	patient story, protocol, second chance, prioritization (secondary)

		than later. Looking back to prior cases like this is there anything you would change about your approach in hindsight? No.	
	1010	The issue starts I think earlier. And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of their endocarditis that its really not indicated to operate on someone like them.	prioritization (secondary), rationalization (secondary)
	1010	Tell me about the operative risks of reoperation verses the original operation. Much higher. Uh, much more complicated an operation. Usually the problem with the reoperation for endocarditis, for example if you do a bypass on someone and then you have to do an aortic valve there is adhesions, there's open grafts, but where you are going to put the valve that is virgin territory. With endocarditis there is, you are operating in the same area, you are using second or third tier real estate because you used the first tier real estate the first time, and there is destruction from the process because usually these are Staph infections so there is destruction of the annulus, the mitral and aortic, so these operations are much much harder. A standard	prioritization (secondary)

		reoperation where you put a valve in and 15 years and the valve went bad, or even better someone had a mitral and now needs an aortic, much much harder.	
	1010	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacement? Not from a surgical standpoint. We treat them just like any other patient who has endocarditis. I don't if in the medical area there are.	prioritization (secondary)
	1001	mainly the cardiac perspective, but we have a standard protocol that you evaluate a patient that warrants surgery. That includes all the organ functions. On top of that, we typically screen the patient for hep C and HIV. I think that's also what [unintelligible 00:02:14] recommends. It's basically a piece of information that we would want to have before the patients are taken to the OR. Mainly the focus is about the cardiac function, the operating risk, and the prognosis if possible.	prioritization (secondary)
	1001	The valve surgery certainly carries the different level of risk. So each value has different technical difficulty or aspect. For example, mitral valve – the surgery would be more challenging than aortic valve surgery. The [redo] surgery will be more difficult than the first-time operation. So I would say everybody is different. Every patient is different. So we will not know the patient's individual risk for surgery until we complete their preop testing and evaluation.	risk evaluation, multiple surgeries, pre-operation care, prioritization (secondary)
	1001	No, not to my knowledge. No, I don't think in the Cardiac Surgery Society there would be a guideline regarding how to take care of a patient with active HIV and hep C – for example, the infection – or patients with a history of a drug use. I don't think there is such a guideline for us to follow. If you notice anything, I [would like to read, easily]. [Overlapping noise] if there's such a guideline.	lack of knowledge, lack of resources, protocol, prioritization (secondary)
	1001	I [don't]. Yeah, I mean, certainly in terms of their decision-making it's the same, but the operative approach may be a little bit different in anticipation of a different life expectancy regarding the valve choice and their social background. You know, everybody is different, so there will be a difference between taking care of each individual patient.	prioritization (secondary)

	1001	I don't think so. I think it is only based on the medical need, yeah. We have to take into consideration the status of pregnancy, but the care should be centered around the endocarditis.	prioritization (secondary)
	1001	Yeah, because every time we've done something in the chest – and it's similar in other territory – there's always scar tissue formation. And going to the chest again to have the area exposed will be much more challenging, potentially given the history of infection. So the risk of injury, interoperative, will be high, and the operative mortality will be at least double, sometimes even higher depending on the complexity of the operation.	prioritization (secondary)
	1001	If it's 100 percent, [then it is now], but it's hard. Sometimes we think patients are inoperable. It doesn't mean that the patient cannot – that the operative mortality will be 100 percent. It's hard. To be honest, if somebody has multiple-organ failure, than the surgery will be contraindicated. They cannot even survive anesthesia. So it's a different story. But a lot of people are [deemed] inoperable, not just based on the operative mortality itself. You know, it's related to other issues. Sometimes we take into consideration even the social issues – you know, the lifestyle or the age, for example.	prioritization (secondary)
protocol			
	1006	Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	deservingness, protocol, risk evaluation
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything.	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue

		Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	
	1006	Interviewer: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? Interviewee: Formal guidelines, not that I'm aware of. Interviewer: Okay. To close, is there anything I haven't asked you about today that you'd like to add? Interviewee: Well, if we have those guidelines, I'd like to know where they are, 'cause I'd be interested in reading them.	protocol
	1010	t is definitely crosses my mind. I think about, I get stuck once or twice a week in the operating room. Um. And I am not just saying take my glove off and you know having blood on my fingers, which happens probably every case or every other case, every day. but I am talking about ouch a real stick, let's just say once every two weeks. You always think that it is more often but when you think about with a clear mind, but it is definitely twice a month. Um so, two of these have been documented hepatitis C where I went through employee health, and um, get tested, then retested, then tested again, I forget at 6 months or 1 year, uh, and a it put my life at home on hold, I am sure you know what I mean and also once I remember I was walking with my son who was 3 or 4 at the time and I was holding his hand and he gave me a piece of some toy or something that had a piece of plastic and I didn't realize it had given me a papercut and then I had blood, and it was during the time I was being tested during the 6 months, and I went to hold his hand and I felt something wet and I realized it was my blood, and I saw blood on his hand too and I uh that hit home. I try to hold back when I describe the story, but that was hard. I am negative, I never converted, but I think I would be foolish if I didn't think about it operating.	infection risk to surgeons, screening for ID, protocol

	1010	ow did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later.	protocol, priorities, training, risk evaluation, save lives
	1010	ell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, pain management, collaboration with addiction medicine, accountability, liability of medical professionals, deservingness, follow-up care, protocol, risk evaluation
	1010	For a patient with prosthetic valve endocarditis. PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? I would certainly not put a PICC line in someone then send them home. If they came back because of documented drug use, then I think that is a disservice to the patient. PICC line and hospital I would have no issue with that that is usually what we do. PICC line and facility, there are two facilities that come to mind that patient's themselves know that it is easier for them to get drugs there than get drugs at home. PICC line and [specific rehab] I would say yes. PICC line and uh what's the one ? [Specific facility] Yes [specific facility], no. Uh there is another one too ? [Specific facility] [Specific facility], no. You know uh, I think talking to the patient and see what they think because you know they are addicted but they are not, you know they could be bad, they could be good, they could be very smart, they	PICC line risk, follow-up care, priorities, protocol

		could be dumb, they could be anything, but they're addicted. Just like you know it makes no sense when someone talks to a patient loud, they're not deaf, they just have coronary disease, it's the same thing as well.	
	1010	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacement? Not from a surgical standpoint. We treat them just like any other patient who has endocarditis. I don't if in the medical area there are.	protocol, training
	1019	Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would	pain management, support for patient, risk evaluation, protocol, post-operation care, empathy, lack of knowledge

		any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	
	1019	Are there any guidelines or standards of care you use at your hospital when assessing people who inject drugs for valve replacements? Not to… not to my knowledge. I treat them like any other patient that needs valve surgery. So… so, in other words, I don't think that there's anything special about them. We look at the guidelines. And, there are published guidelines for operating on patients with endocarditis that we know we should follow	protocol
	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care

		…the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	
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	1008	Interviewer: Okay. And then are there any like professional society guidelines for providing -- for doing the surgery in the population? Respondent: You mean for providing what kind of care during the surgery? Interviewer: Yeah. Respondent: No. There's recommendations for -- treatment of endocarditis, with the ACC and the HA probably have the best guidelines. The American Association of Thoracic Surgery has their own guidelines but they're basically the same. I don't think they're as high a quality as the ACC HA. But, yeah, they're all basically the same. Interviewer: Okay. Cool. Respondent: But there's no guidelines on	protocol, lack of resources, training, liability of medical professionals

		specifically how we treat patients with drug abuse.	
	1008	So, like are there any guidelines or standards of care used at the hospital when you assess people who inject drugs for valve replacement? Respondent: Mainly the things that we've been talking about. Interviewer: Okay. Respondent: That we assume that they're going to quit taking drugs after the surgery, and that's a big assumption. Interviewer: Yeah. Respondent: And if they re-infect while actively taking drugs, they don't get another procedure. That's pretty much the guidelines. Otherwise, they're treated just like everybody else.	futility, protocol
	1002	Just the usual guidelines, I think. Yeah.	protocol
	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care

		whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	
	1019	Are there any guidelines or standards of care you use at your hospital when assessing people who inject drugs for valve replacements? Not to… not to my knowledge. I treat them like any other patient that needs valve surgery. So… so, in other words, I don't think that there's anything special about them. We look at the guidelines. And, there are published guidelines for operating on patients with endocarditis that we know we should follow Right You know, so we follow them.	protocol
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons
	1011	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? The first things are medical. Thinking about the guidelines if the patient needs an operation,	protocol, data, priorities

		what is the physiological state, by that I mean what are the anatomic findings, what are his echo findings, and just exactly what I would think about any other patient who has a mechanical valve lesion.	
	1011	In the case of this vignette how should this patient's opioid use disorder be treated and when? I think form my perspective what she needs right away, or what she needs first is the treatment for her cardiogenic shock and the problem that she has that she will require some sort of a surgical operation based on whatever the imaging suggests and then after that there has to be attention to her acute pain needs because it is a surgical procedure she is going to have some pain but as she weans away from her operation I think that is where the transition needs to happen.	protocol
	1011	I believe you already answered this but are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? So, we have the team that we try to convene, so what we decide is that we will bring all these patients to the team. It is not always a decision-making tool because sometimes the decision is clear as to what needs to happen, but that has become a great resource. Even if it has already been decided, we still discuss those patients so that is guideline number one we are going to discuss all of these patients in a multidisciplinary fashion and beyond that I think all of us would generally follow what the endocarditis guidelines are.	protocol
	1016	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Um, we don't have any specific institutional protocols that I know of.	protocol
	1016	: Are there any professional society guidelines for this population? S: I'm not familiar with (inaudible)…	lack of knowledge, protocol
	1016	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Um, we don't have any specific institutional protocols that I know of.	protocol
	1003	Nor do I think there is nationally. At our societies - cardiac surgery – I'm not seeing anything published about when to offer – how to assess a patient with endocarditis who uses drugs. No, I'm not seeing anything in our literature.	protocol

	1006	Interviewer: Are there professional society guidelines? Interviewee: Oh, indications for surgery? Interviewer: Yeah, I think they mean with regards to IV drug users versus non-users. Interviewee: To be honest, I don't know There are guidelines if you're talking just about IV drug abuse or endocarditis indications and endocarditis more broadly. I don't think they draw distinctions in those indications between IV drug abusers and non IV drug abusers.	protocol, training, data, lack of resources
	1006	Interviewer: I think you're answering this question already, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	perception of risk in PWID, time between operations, commitment to recovery, deservingness, reinfection, protocol
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	societal issue, desired changes, lack of resources, SUD treatment, changes over time, prevalence of endocarditis, protocol
	1006	Interviewer: Okay. To close, is there anything I haven't asked you about today that you'd like to add? Interviewee: Well, if we have those guidelines, I'd like to know where they are, 'cause I'd be interested in reading them. My other comment is just to reinforce the statements on what a huge difference the addiction medicine	collaboration with addiction medicine, protocol, changes over time, support for patient

		service made—when I heard that talk, it was several years ago, probably five. I thought well halleluiah, now there's some hope, 'cause otherwise just either treating a patient for four to six weeks on your service, or sending 'em back into the world to get reinfected.	
	1002	Interviewer: Are there any professional guidelines that you use for working with these patients and evaluating for valve surgery? Respondent: Just the usual guidelines, I think. Yeah.	protocol
	1002	Interviewer: So based on someone's age, would you choose one valve over the other? Respondent: Yeah, if the patient is – yeah, I think there is a chance to choose the mechanical valve if the [patient is older]. I mean, why not bio? We don't have the clearcut age, but –	valve preference, protocol
	1002	Interviewer: Do you think treatment for endocarditis for people who inject drugs will change in the future? Respondent: The surgery? You said the management or the surgery? Interviewer: It could be both, either the management or the surgery. Respondent: Yeah. I think that will change, but I don't have anything up in my mind at this point.	protocol, desired changes
	1015	I: And are there any professional society guidelines…? S: Um…yes, but, um, they are not based on any evidence.	protocol
	1007	Okay. And are there any professional society guidelines that you also follow? Speaker 2: Um, we don't follow any particular we follow just universal precautions and try to be careful.	infection risk to surgeons, protocol
	1007	And how did you approach this case? Speaker 2: Um, yes and we approach it like, like any other patient. Speaker 1: Okay Speaker 2: Come up with the best plan for, for that patient. Speaker 1: Okay. So if you were to address Katie's issue, how would you approach Katie from the vignette? Speaker 2: Approach it? I mean in which way? I mean we would receive the patient, evaluate the patient.	protocol, perception of risk in PWID, pre-operation care, defensive

		Speaker1: Yeah Speaker 2: Um…If she needed surgery, she was a reasonable candidate, which so far it looks like she has an indication, then we'd do surgery.	
	1007	What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	support for patient, protocol, lack of resources, societal issue, tx compared to broader, perception of risk in PWID
	1007	Are there any guidelines or standards of care used in your hospital when assessing people who inject drugs for valve replacements? Just in your hospital. Speaker 2: There's no um, like written form that we work our way through. We can just assess every patient. And discuss every patient.	protocol
	1017	Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway.	discussing addiction, changes over time, commitment to recovery, patient consent, collaboration with addiction medicine, protocol, deservingness

	1017	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	protocol, lack of knowledge, lack of resources, data
	1013	Are there professional society guidelines on this issue? Uh- not really. There have been debates specifically published in the cardiothoracic surgical literature about some of the ethical issues related to treating people who inject drugs but I don't think there is a strong guideline	protocol
	1013	Are there any guidelines or standards of care used at your hospital when assessing these patients? Not any that are formalized but I think that we are developing an approach.	protocol
	1013	I think that one thing that will be interesting to you in this study, or that would be interesting to be in this, is one area that I have really changed, my thinking has really evolved a lot is in right sided endocarditis. So, 20 years ago if someone had tricuspid valve endocarditis and a great big vegetation and severe tricuspid valve regurgitation and they embolized to their lungs and they had lung abscesses and maybe an empyema I would operate on them. I don't anymore. Because I think that they are better off being treated with antibiotics and even if they need a chest tube for their empyema, treat the infection unless, you can sterilize the vegetation, if you can't sterilize the vegetation then you are kind of stuck, you have to operate. But I am much more reluctant to operate on right sided disease now and I think that, if we can assemble enough information around that I think that could contribute to guidelines – it gets a little bit to your guideline question- that I think would actually be useful. I don't think we will ever have guidelines for these really difficult ethical ones but I can imagine developing an approach where for example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	protocol, multiple surgeries, medical model, data, changes over time, desired changes, left vs right side

	1003	However, if someone is critically ill, and time is of the essence, then we will move ahead and do surgery regardless of whether or not I think they're going to be able to be successfully treated from the addiction standpoint. On the other hand, if a patient is not critically sick, and they're having a medical indication for surgery, however if they're not in a program, where I think they're going to be successful in avoiding use of drugs again, I may postpone surgery until they get into a rehab program. So, once we do the surgery, I know they'll be on the road to recovery. But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	relapse, risk evaluation, timing of SUD tx, commitment to recovery, paternalism, protocol
	1003	. And how knowledgeable do you yourself feel about like, available treatments for people who use drugs? You know, do you know of any – of the available treatments for opioid use disorder, is that something you'd be interested in getting more training on? Respondent: Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be interested in doing that, but it's you know, right now, not practical. For me.	SUD treatment, time constraints, training, follow-up care, protocol
	1003	what works to treat their pain? What hasn't worked? Respondent: Well, they all need some element of narcotics, so – and we find the intravenous medications work well in the ICU. Intravenous Fentanyl, intravenous Dilaudid. And then on the floor, the oral agents seem to work fairly well in addition. Once they get transitioned to IV and oral drugs, we use oral Dilaudid; also, Percocets. And then we'll add, often times, a non-steroidal inflammatory - anti-inflammatory agents, such as Toradol, people are using Toradol. And then - some patients, [it] actually works; hard to believe, but some	pain management, seriousness, protocol

		patients respond to Toradol. Or this patient population.	
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	post-operation care, PICC line risk, futility, frustration, follow-up care, perception of risk in PWID, desired changes, protocol, support for patient
	1003	Interviewer: Okay. Are there any guidelines or standards of care used at this hospital when assessing people who inject drugs for valve replacement? Respondent: [Laughter] No. There should be, but there's not. Interviewer: Okay. Interesting. Respondent: Nor do I think there is nationally. At our societies - cardiac surgery – I'm not	protocol, data, training

		seeing anything published about when to offer – how to assess a patient with endocarditis who uses drugs. No, I'm not seeing anything in our literature.	
	1003	There should be, but there's not, because we – there's a lot of things in cardiac surgery that are now – there's task forces and they establish guidelines, that you're supposed to adhere, too for various – when to operate on someone with a valve problem; when to operate on someone with a coronary problem. Aortic problem. Heart failure problem. But I'm not seeing this addressed in our literature – when to operate on someone with endocarditis who uses drugs. I'm not sure there's anything on when to operate on someone with endocarditis, period. I'm not aware of any consensus statements about that. There should be, but there's not.	protocol, data, frustration
	1009	Interviewer: What are some of the first things that you think about when you're asked to evaluate someone who injects drugs for a valve replacement? Surgeon: What is the microorganism, what valve is infected? Is it on the right side of the heart? The left side of the heart? Do they have heart failure? Have they had thromboembolic complications?	protocol, medical model, pre-operation care, risk evaluation
	1009	Interviewer: So now I'm going to introduce a clinical vignette so in this case, Katy, is a 35-year-old woman who uses heroin via injection. She has staph aureus, [spectoremia] and aortic valve endocarditis. She's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So have you had personal experience caring for a patient in a similar situation? How did you approach that case? How would you approach this kind of case? Surgeon: Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in cardiogenic shock with severe heart failure and a root abscess, they need an operation.	risk evaluation, protocol, save lives, second chance

	1009	Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around. Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I just say if you use any sort of, you know, if you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on him twice and it came out that he doesn't care	accountability, discussing addiction, protocol, futility, medical model, paternalism, patient story

		about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn't have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1009	Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	multidisciplinary group, collaboration with addiction medicine, protocol, risk evaluation
	1009	Interviewer: When talking to the patient, how does their commitment treatment sort of play into your surgical decisions, if it does? Surgeon: The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on	commitment to recovery, futility, protocol, tx compared to colleagues

		patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	
	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	futility, frustration, deservingness, protocol, tx compared to colleagues, reinfection, commitment to recovery

	1009	Interviewer: So for post-operative care, thinking about these options, if you'd give someone a pick line and send them home, give them a pick line and have them stay in the hospital, or give them a PICC line and send them to a nursing facility? Safest option, best for the patient? Surgeon: For us, it's not by choice. No visiting nurse group in the state will accept a patient with the history of intravenous drug abuse who has a PICC line. So we can't send them home with a PICC line. So it's either they go to a nursing home or they stay in the hospital. If they're totally stable, to me it doesn't matter where they go. As long as they complete their course of antibiotics. You know, it's frustrating when these patients, again, some of whom get the PICC line. I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	PICC line risk, protocol
	1009	If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	protocol, deservingness, futility, reinfection, relapse, risk evaluation
	1009	Interviewer: Are there any guidelines or standards of care used this hospital when you're assessing people who inject drugs for valve replacements? Surgeon: No. I mean, there's no guideline on what to do if someone who injects drugs. The guidelines are based on a patient's medical condition and in terms of whether you think they need an operation or not. Do they have an indication but the guidelines – no guideline will every say you have to operate because surgical guidelines always incorporate surgeon judgment. You can have someone that you think has an indication for surgery but that you feel is not indicated for X, Y or Z reasons, or is futile. And so there's nothing that ever says you have to in the surgical guidelines for endocarditis.	protocol, futility

	1011	And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little anticoagulation and the valve becomes thrombosed, that's a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure themselves then that has a problem as well. So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	risk evaluation, multiple surgeries, medical model, protocol, deservingness, paternalism, valve preference
	1011	Are there professional society guidelines? There are guidelines regarding endocarditis. There are, um, there are, I am not familiar with any society guidelines on our side regarding specific guidelines for patients using IV drugs.	protocol
	1011	It becomes trickier because at that point you are not relying on future projections, it's not what, like the conversation you had with the patient the first time around. Going back to your previous question about you know their commitment to quit injecting drugs at this point they have a track record so my first question would be, when Katie comes back is that was, she injecting drugs again since the time of her previous operation and I think that is the big question. Because patients can get endocarditis without injecting drugs, I mean that's not you know one population, so what I would say is that if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse.	protocol, deservingness, perception of risk in PWID, commitment to recovery, reinfection
	1011	They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	accountability, protocol

	1011	I believe you already answered this but are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? So, we have the team that we try to convene, so what we decide is that we will bring all these patients to the team. It is not always a decision-making tool because sometimes the decision is clear as to what needs to happen, but that has become a great resource. Even if it has already been decided, we still discuss those patients so that is guideline number one we are going to discuss all of these patients in a multidisciplinary fashion and beyond that I think all of us would generally follow what the endocarditis guidelines are.	protocol, multidisciplinary group
	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1017	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	data, protocol, lack of knowledge, lack of resources
	1013	Are there professional society guidelines on this issue? Uh- not really. There have been debates specifically published in the cardiothoracic surgical literature about some of the ethical issues related to treating people who inject drugs but I don't think there is a strong guideline	protocol

	1013	Are there any guidelines or standards of care used at your hospital when assessing these patients? Not any that are formalized but I think that we are developing an approach.	protocol
	1013	And to close, is there anything I haven't asked you about today that you would like to say? I think that one thing that will be interesting to you in this study, or that would be interesting to be in this, is one area that I have really changed, my thinking has really evolved a lot is in right sided endocarditis. So, 20 years ago if someone had tricuspid valve endocarditis and a great big vegetation and severe tricuspid valve regurgitation and they embolized to their lungs and they had lung abscesses and maybe an empyema I would operate on them. I don't anymore. Because I think that they are better off being treated with antibiotics and even if they need a chest tube for their empyema, treat the infection unless, you can sterilize the vegetation, if you can't sterilize the vegetation then you are kind of stuck, you have to operate. But I am much more reluctant to operate on right sided disease now and I think that, if we can assemble enough information around that I think that could contribute to guidelines – it gets a little bit to your guideline question- that I think would actually be useful. I don't think we will ever have guidelines for these really difficult ethical ones but I can imagine developing an approach where for example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	protocol, left vs right side, desired changes, multiple surgeries
	1015	I: And are there any professional society guidelines…? S: Um…yes, but, um, they are not based on any evidence.	protocol, data, lack of knowledge
	1015	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: No. I: Ok. S: Well, I mean, so we have guidelines, surgical societies have guidelines, and we all use that, but outside of that, no.	protocol, lack of resources
	1007	Speaker 1: Okay. And are there any professional society guidelines that you also follow? Speaker 2: Um, we don't follow any particular we follow just universal precautions and try to be careful.	protocol, infection risk to surgeons

	1007	Speaker 1: All right, thank you. Now I'm going to introduce a clinical vignette and then you would answer questions subsequently. Katie's a thirty four year old woman who uses heroin by injection drug use. She has staphylococcus Aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is there is concern for an aortic roots abscess. So have you had a personal experience caring for patients with a similar situation? Speaker 2: Yes. Speaker 1: And how did you approach this case? Speaker 2: Um, yes and we approach it like, like any other patient. Speaker 1: Okay Speaker 2: Come up with the best plan for, for that patient. Speaker 1: Okay. So if you were to address Katie's issue, how would you approach Katie from the vignette? Speaker 2: Approach it? I mean in which way? I mean we would receive the patient, evaluate the patient. Speaker1: Yeah Speaker 2: Um…If she needed surgery, she was a reasonable candidate, which so far it looks like she has an indication, then we'd do surgery.	deservingness, protocol, risk evaluation
	1007	Speaker 1: All right. Thank you. Are there any guidelines or standards of care used in your hospital when assessing people who inject drugs for valve replacements? Just in your hospital. Speaker 2: There's no um, like written form that we work our way through. We can just assess every patient. And discuss every patient.	protocol
	1001	Yeah, certainly we [overlapping noise] from mainly the cardiac perspective, but we have a standard protocol that you evaluate a patient that warrants surgery. That includes all the organ functions. On top of that, we typically screen the patient for hep C and HIV. I think that's also what [unintelligible 00:02:14] recommends. It's basically a piece of information that we would want to have before the patients are taken to the OR. Mainly the focus is about the cardiac function, the operating risk, and the prognosis if possible.	protocol, risk evaluation
	1001	On top of that, we typically screen the patient for hep C and HIV. I think that's also what [unintelligible 00:02:14] recommends. It's basically a piece of information that we would	screening for ID, protocol, risk evaluation

		want to have before the patients are taken to the OR.	
	1001	No, I don't think in the Cardiac Surgery Society there would be a guideline regarding how to take care of a patient with active HIV and hep C – for example, the infection – or patients with a history of a drug use. I don't think there is such a guideline for us to follow. If you notice anything, I [would like to read, easily]. [Overlapping noise] if there's such a guideline.	protocol, accountability, lack of resources, lack of knowledge
	1001	Respondent: We have [our OTNs] – you know, the [protocol] – but if we believe if somebody postoperative is in pain or (their) narcotics use is out of norm, then we would consult a specialist. But first we want to – you know, a medical reason – if that can be explained. If there's really no medical reason for excessive or intensive pain, then we would investigate.	pain management, protocol, post-operation care, multidisciplinary group
	1001	It's hard to say. To be honest, it's not exactly the same, but I understand. The mechanism is similar. I never use that example, liver transplant and relapse in alcohol use, as an example to my patients, but I think they are similar. To my knowledge, if a patient has no sign of quitting alcohol, the liver transplant will be contraindicated. That's based on my knowledge in my past in my training. But I think even though we have never made it clear in our practice to an endocarditis patient who has no plan of quitting the drug use – but I think eventually there will be an overall consensus, you know?	commitment to recovery, liver vs heart, protocol, disagreements (professional), contract
	1001	Respondent: So we're not talking about the surgery at this point? This is medical? Interviewer: The medical management, mm-hmm. So the options are we can give her a PICC line and she can go home, we can give her a PICC line and she can stay in the hospital, or we can give her a PICC line and she can go to a nursing facility? Respondent: I'd prefer the patient stayed in the hospital, if possible, but I just don't think if that would actually happen because of the financial issue. I still believe overall the hospital is the safest place for those patients – being medically managed and closely monitored. I personally don't think a patient with a recent history of active drug use should go home with a PICC line. I think it's prohibited. That's just a perfect setup for drug use again at home.	cost, relapse, PICC line risk, accountability, follow-up care, protocol

	1001	Interviewer: What's your sense about how you approach and treat patients who inject drugs in comparison to your colleagues? Respondent: I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	tx compared to colleagues, lack of resources, protocol, disagreements (professional), risk evaluation, save lives, tx compared to broader
	1001	Interviewer: Do you think that treatment for endocarditis for people who inject drugs will change in the future? Respondent: I don't know. I hope. Interviewer: What kind of changes would you like to see? Respondent: I hope there would be a guidelines. You know, how many times do we do surgery? If they go back to drug use, should we withhold the surgical intervention? Or what would be the process? You know, the medicine is becoming both standardized or individualized. So I think for an endocarditis patient, it should be the future. On one side, we should clearly have guidelines from different perspectives. On the other side, we have to mainly treat an endocarditis patient individually, based on their own needs.	desired changes, protocol, data, changes over time, training
	1001	Respondent: Yeah, I'm more interested in the protocols, the guidelines. I personally [ran] the guidelines for my own program. I think this is the way to make sure everybody is on the same page to avoid future conflicts if we have something to follow.	protocol, risk evaluation
	1004	: So, what are some of the first thoughts that you consider when you're asked to evaluate a person who injects drugs for a valve replacement? R: sad. Tough decisions. These people come in sick and don't take care of themselves. I do worry about getting viral infections like Hep C and HIV. There are no professional guidelines.	infection risk to surgeons, stigma , accountability, protocol, lack of resources, deservingness, commitment to recovery

	1004	R: DO you think treatment for endocarditis will change in the future? What changes would you want to see? I: No, I don't think that the treatment will change. This disease is one where prevention is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	desired changes, knowledge, changes over time, protocol, cost
	1005	I'm not aware of any strict guidelines for operating on people who use IV drugs.	lack of knowledge, lack of resources, protocol
	1005	I think it has changed, and that I think it's an epidemic and we see so much of it. I think it's changed in that we've I think tried to become a lot more aggressive in getting these patients into rehab. I also think it's changed in that the tolerance for doing multiple valve operations on patients is just not accepted amongst our specialty as much to do repetitive operations on people that continue to use.	prevalence of endocarditis, protocol, changes over time
	1005	Interviewer: Are there any guidelines or standards of care that are used at your hospital when assessing people who inject drugs for the valve replacements? Interviewee: No.	protocol
	1008	Interviewer: Okay. And then are there any like professional society guidelines for providing -- for doing the surgery in the population? Respondent: You mean for providing what kind of care during the surgery? Interviewer: Yeah. Respondent: No. There's recommendations for -- treatment of endocarditis, with the ACC and the HA probably have the best guidelines. The American Association of Thoracic Surgery has their own guidelines but they're basically the same. I don't think they're as high a quality as the ACC HA. But, yeah, they're all basically the same. Interviewer: Okay. Cool. Respondent: But there's no guidelines on specifically how we treat patients with drug abuse.	protocol, lack of resources, liability of medical professionals

	1008	Interviewer: Okay. I have another -- and, so, imagine -- back to Katie, that you've operated on her. She's doing well. She's linked to a methadone maintenance program. And then one year later, she's back in the hospital and she has prosthetic valve endocarditis. So, you've seen this before? Respondent: Yep. Interviewer: Yeah. What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	data, deservingness, follow-up care, protocol, commitment to recovery, relapse, reinfection
	1008	Interviewer: Okay. So, in a case where like if the patient was definitely going to die without the surgery, like 100 percent mortality and had maybe 50 percent operative mortality? Respondent: Wouldn't matter. I would follow the same algorithm that I had before. If they came in shooting up drugs, they're not getting another operation. Interviewer: Okay. Wait. What about for folks who weren't injecting drugs, like -- Respondent: In the past? That had quit? Interviewer: Yeah. Respondent: Yeah, we would operate.	commitment to recovery, deservingness, futility, protocol, risk evaluation

	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues
	1008	Interviewer: Cool. Thank you. Last question. So, like are there any guidelines or standards of care used at the hospital when you assess people who inject drugs for valve replacement? Respondent: Mainly the things that we've been talking about.	protocol
	1008	Respondent: That we assume that they're going to quit taking drugs after the surgery, and that's a big assumption. Interviewer: Yeah. Respondent: And if they re-infect while actively taking drugs, they don't get another procedure. That's pretty much the guidelines. Otherwise, they're treated just like everybody else.	futility, protocol
	1007	Speaker 1: All right. Thank you. Are there any guidelines or standards of care used in your hospital when assessing people who inject drugs for valve replacements? Just in your hospital. Speaker 2: There's no um, like written form that we work our way through. We can just assess every patient. And discuss every patient.	protocol, rigidity (secondary)

	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons
	1012	Are there professional society guidelines on this issue? Um. The ones that I am aware of are pretty wishy washy, they're not, you know, they don't guide us as to everybody gets one valve and after that no more, that's a personal and a programmatic decision on how aggressive to be with patients that continue to um use IV drugs and continue to get infection.	protocol, disagreements (professional), lack of resources, deservingness, reinfection, relapse
	1012	How did you approach that case? I replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	protocol, priorities, support for patient, accountability, defensive
	1012	The surgical guidelines are following the treatment of endocarditis and they are not focused on IV drug users they are when do you operate on endocarditis in general and that has to do with the type of organism, how big the lesion is, whether or not there has been a neurologic injury, there's a list of criteria and that is what we follow in general. We have not come down on hard and fast rules about who gets surgery and how many times. I think we have left that to the discretion of the individual surgeons.	protocol, lack of resources
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons

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	1005	I think it has changed, and that I think it's an epidemic and we see so much of it. I think it's changed in that we've I think tried to become a lot more aggressive in getting these patients into rehab. I also think it's changed in that the tolerance for doing multiple valve operations on patients is just not accepted amongst our specialty as much to do repetitive operations on people that continue to use.	prevalence of endocarditis, protocol, changes over time
	1005	Interviewer: Are there any guidelines or standards of care that are used at your hospital when assessing people who inject drugs for the valve replacements? Interviewee: No.	protocol
	1017	: Ok. Have you ever discussed drug use with a patient like this? S: Yes. I: And how did that conversation go? S: Um, it, complicated. Um, I think that in the, in the era before we had addiction psychiatrists, I think that it was much less nuanced and a little bit more, you know, dichotomous, I guess. Whereas, you know, this is sort of complicated because, there was a period of time when I was in BLANK when we had a resource where patients, if they agreed to go into treatment, um, from inpatient to inpatient, we would operate on them. And so it created this pathway that allowed us to say that this person has, um, you know, active drug user but has a willingness to get clean, so therefore, yes we are going to go that route. But if they didn't, it would send us to another pathway. I: Gotcha. Have you ever heard the term opioid use disorder or used it when talking with patients? S: No. Yes, I've heard about it, I have not used it when talking with patients.	discussing addiction, changes over time, commitment to recovery, deservingness, collaboration with addiction medicine, protocol, patient consent
	1017	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: Uh, no. I think that we do try to bring the best data of long-term prognosis possible. But there is very limited information on that front in the surgical world.	data, protocol, lack of knowledge, lack of resources
	1004	There are no professional guidelines.	protocol, lack of resources

	1004	No, I don't think that the treatment will change. This disease is one where prevention is the best approach. We don't have the manpower or the money to treat addiction. We'd need massive education programs for prevention, so that kids understand their risk of dying increases whenever they use drugs, like that Just Say No program.	protocol, changes over time, cost
	1006	Interviewer: Are there professional society guidelines? Interviewee: Oh, indications for surgery? Interviewer: Yeah, I think they mean with regards to IV drug users versus non-users. Interviewee: To be honest, I don't know There are guidelines if you're talking just about IV drug abuse or endocarditis indications and endocarditis more broadly. I don't think they draw distinctions in those indications between IV drug abusers and non IV drug abusers.	data, lack of resources, protocol
	1006	Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	deservingness, protocol, risk evaluation
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue

	1006	Interviewer: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? Interviewee: Formal guidelines, not that I'm aware of. Interviewer: Okay. To close, is there anything I haven't asked you about today that you'd like to add? Interviewee: Well, if we have those guidelines, I'd like to know where they are, 'cause I'd be interested in reading them.	protocol
	1012	Um. The ones that I am aware of are pretty wishy washy, they're not, you know, they don't guide us as to everybody gets one valve and after that no more, that's a personal and a programmatic decision on how aggressive to be with patients that continue to um use IV drugs and continue to get infection.	protocol
	1012	I believe you already answered this but are there any guidelines or standards of care used at your hospital when assessing these patients? The surgical guidelines are following the treatment of endocarditis and they are not focused on IV drug users they are when do you operate on endocarditis in general and that has to do with the type of organism, how big the lesion is, whether or not there has been a neurologic injury, there's a list of criteria and that is what we follow in general. We have not come down on hard and fast rules about who gets surgery and how many times. I think we have left that to the discretion of the individual surgeons.	protocol, medical model
	1008	Interviewer: Cool. Thank you. Last question. So, like are there any guidelines or standards of care used at the hospital when you assess people who inject drugs for valve replacement? Respondent: Mainly the things that we've been talking about.	protocol
	1015	I: And are there any professional society guidelines…? S: Um…yes, but, um, they are not based on any evidence.	protocol

	1015	I: Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: No. I: Ok. S: Well, I mean, so we have guidelines, surgical societies have guidelines, and we all use that, but outside of that, no.	protocol, medical model, lack of resources
	1010	Are there any professional society guidelines you refer to? It is definitely crosses my mind. I think about, I get stuck once or twice a week in the operating room. Um. And I am not just saying take my glove off and you know having blood on my fingers, which happens probably every case or every other case, every day. but I am talking about ouch a real stick, let's just say once every two weeks. You always think that it is more often but when you think about with a clear mind, but it is definitely twice a month. Um so, two of these have been documented hepatitis C where I went through employee health, and um, get tested, then retested, then tested again, I forget at 6 months or 1 year, uh, and a it put my life at home on hold, I am sure you know what I mean and also once I remember I was walking with my son who was 3 or 4 at the time and I was holding his hand and he gave me a piece of some toy or something that had a piece of plastic and I didn't realize it had given me a papercut and then I had blood, and it was during the time I was being tested during the 6 months, and I went to hold his hand and I felt something wet and I realized it was my blood, and I saw blood on his hand too and I uh that hit home. I try to hold back when I describe the story, but that was hard. I am negative, I never converted, but I think I would be foolish if I didn't think about it operating. And the other thing that I, sometimes I understand it might not be fair or not open minded or whatever it is, but you know when you do things, you ask me if I think about it, it is a multifactorial answer. The second thing that I think about is, if someone comes to your house to fix the telephone line you know they pull over with a van and go in your house and maybe they put up a ladder to go up but its not a big deal. I don't think that Verizon is asking that same person to climb the 300-foot cell tower to do the same thing. There are people that sign up for that, there are people that are willing to do it, there are people that I would assume get paid a lot of money to do it. We don't have that in medicine, you don't have the option to say I do	protocol, infection risk to surgeons, risk evaluation

		not feel comfortable exposing myself to this, I mean I am willing to take a chance when I don't know a patient has it, but if I have you know a drug addict with a high viral load I don't have the right in paper at least to say I do not feel comfortable operating. And maybe I shouldn't. I don't know. But it is something I think about. And the second thing that I think about is if you are a police officer and you get shot on the job, there is a huge mechanism to support you and your family, to support your family because you are gone, same if you are a firefighter and you are killed in fire. I think if something happened to me, my family would have a very hard time getting through. Because we as a profession lack the mechanisms to support each other. We actually do the opposite we don't treat each other well. So, because of these three reasons it does cross my mind a lot when I operate.	
	1010	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Multiple times. How did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later. Looking back to prior cases like this is there anything you would change about your approach in hindsight? No.	patient story, protocol, second chance, risk evaluation, save lives

	1010	Tell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, accountability, deservingness, follow-up care, protocol, risk evaluation
	1010	I would certainly not put a PICC line in someone then send them home. If they came back because of documented drug use, then I think that is a disservice to the patient. PICC line and hospital I would have no issue with that that is usually what we do. PICC line and facility, there are two facilities that come to mind that patient's themselves know that it is easier for them to get drugs there than get drugs at home. PICC line and [specific rehab] I would say yes. PICC line and uh what's the one ? [Specific facility] Yes [specific facility], no. Uh there is another one too ? [Specific facility] [Specific facility], no. You know uh, I think talking to the patient and see what they think because you know they are addicted but they are not, you know they could be bad, they could be good, they could be very smart, they could be dumb, they could be anything, but they're addicted. Just like you know it makes no sense when someone talks to a patient loud, they're not deaf, they just have coronary disease, it's the same thing as well.	protocol, PICC line risk, follow-up care, priorities
	1010	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacement? Not from a surgical standpoint. We treat them just like any other patient who has endocarditis. I don't if in the medical area there are.	protocol
	1013	Are there professional society guidelines on this issue? Uh- not really. There have been debates specifically published in the cardiothoracic	protocol, responsibility (secondary)

		surgical literature about some of the ethical issues related to treating people who inject drugs but I don't think there is a strong guideline	
	1014	I: And are there any professional society guidelines? S: For… I: For people who inject drugs getting a valve replacement? S: Not really. I've been, I've been, you know, I go across the country and give talks, and, you know, to, uh, different topics, but the subject always comes up. And, I was in Ohio, and even Ohio is epicenter of the opioid crisis. Even the guys over there haven't come up with a plan to manage these patients. I mean, it is institution dependent. And we haven't had, like, generalized guidelines, and even if we do, the little bit weird and varied for a reason.	protocol
	1014	I: Just a couple more questions. Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: So, no, we don't have guidelines. We tried to write them, there are no guidelines. There are some discrepancies, every now and then, between us, the infectious disease people, the, the, the psychiatrists, and the ethics department here, who, they are a little bit distant from what we, you know, we are not on the same page. Let, let me put it in a different way, we are, uh, we, we don't look at the problem the same way, and we need to sit down more and have a more elaborate discussions. Because writing notes on a patient's chart and quoting esoteric papers just doesn't help anybody.	protocol, multidisciplinary group
	1011	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? The first things are medical. Thinking about the guidelines if the patient needs an operation, what is the physiological state, by that I mean what are the anatomic findings, what are his echo findings, and just exactly what I would think about any other patient who has a mechanical valve lesion.	protocol, data, priorities

	1011	Does it impact what type of valve, for example mechanical or bioprosthetic valve? So, the data, um, there is no separate data on that, but it is a very interesting question that comes up every time. And personally, it does impact decision making. I do feel that these patients are in a very vulnerable situation, they have a lot of stresses going on in their life, and there is a lot that they have to figure out, especially someone who comes in who was actively using drugs at the time of their intervention, and the idea that they are going to go through this big operation, they are going to clean themselves up right away is sometimes too much to ask of them. It is not uncommon, I think for us to see some relapses before the patient eventually can fully quit. And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little anticoagulation and the valve becomes thrombosed, that's a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure themselves then that has a problem as well. So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	risk evaluation, data, societal issue, relapse, protocol
	1011	Are there professional society guidelines? There are guidelines regarding endocarditis. There are, um, there are, I am not familiar with any society guidelines on our side regarding specific guidelines for patients using IV drugs.	protocol, lack of resources
	1011	In the case of this vignette how should this patient's opioid use disorder be treated and when? I think form my perspective what she needs right away, or what she needs first is the treatment for her cardiogenic shock and the problem that she has that she will require some sort of a surgical operation based on whatever the imaging suggests and then after	protocol

		that there has to be attention to her acute pain needs because it is a surgical procedure she is going to have some pain but as she weans away from her operation I think that is where the transition needs to happen.	
	1011	You operate on Katie and she does well. She is linked into a methadone maintenance program. About 1 year later she is back in the hospital and she has prosthetic valve endocarditis. Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. Any specific cases come to mind? A patient very similar to her in age who had a tricuspid valve replacement and came back with tricuspid valve endocarditis. Tell me your thoughts about management decisions in these cases It becomes trickier because at that point you are not relying on future projections, it's not what, like the conversation you had with the patient the first time around. Going back to your previous question about you know their commitment to quit injecting drugs at this point they have a track record so my first question would be, when Katie comes back is that was, she injecting drugs again since the time of her previous operation and I think that is the big question. Because patients can get endocarditis without injecting drugs, I mean that's not you know one population, so what I would say is that if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse. And you treat her like you would. Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say	patient story, risk evaluation, commitment to recovery, protocol, deservingness

		one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	
	1011	I believe you already answered this but are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? So, we have the team that we try to convene, so what we decide is that we will bring all these patients to the team. It is not always a decision-making tool because sometimes the decision is clear as to what needs to happen, but that has become a great resource. Even if it has already been decided, we still discuss those patients so that is guideline number one we are going to discuss all of these patients in a multidisciplinary fashion and beyond that I think all of us would generally follow what the endocarditis guidelines are.	protocol
	1002	Just the usual guidelines, I think. Yeah.	protocol
	1002	Yeah, if the patient is – yeah, I think there is a chance to choose the mechanical valve if the [patient is older]. I mean, why not bio? We don't have the clearcut age	protocol
	1002	Yeah. I think that will change, but I don't have anything up in my mind at this point.	protocol

	1003	However, if someone is critically ill, and time is of the essence, then we will move ahead and do surgery regardless of whether or not I think they're going to be able to be successfully treated from the addiction standpoint. On the other hand, if a patient is not critically sick, and they're having a medical indication for surgery, however if they're not in a program, where I think they're going to be successful in avoiding use of drugs again, I may postpone surgery until they get into a rehab program. So, once we do the surgery, I know they'll be on the road to recovery. But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	protocol
	1003	Yeah. Well, they would undergo – we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive	SUD treatment, commitment to recovery, discussing addiction, follow-up care, multidisciplinary group, post-operation care, protocol
	1003	Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be interested in doing that, but it's you know, right now, not practical. For me.	SUD treatment, follow-up care, knowledge, protocol
	1003	Well, they all need some element of narcotics, so – and we find the intravenous medications work well in the ICU. Intravenous Fentanyl, intravenous Dilaudid. And then on the floor, the oral agents seem to work fairly well in addition. Once they get transitioned to IV and	pain management, protocol

		oral drugs, we use oral Dilaudid; also, Percocets. And then we'll add, often times, a non-steroidal inflammatory - anti-inflammatory agents, such as Toradol, people are using Toradol. And then - some patients, [it] actually works; hard to believe, but some patients respond to Toradol. Or this patient population.	
	1003	A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	protocol, liver vs heart, changes over time
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	PICC line risk, desired changes, medical model, protocol, support for patient, tx compared to broader
	1003	Nor do I think there is nationally. At our societies - cardiac surgery – I'm not seeing anything published about when to offer – how to assess a patient with endocarditis who uses	protocol

		drugs. No, I'm not seeing anything in our literature.	
	1003	There should be, but there's not, because we – there's a lot of things in cardiac surgery that are now – there's task forces and they establish guidelines, that you're supposed to adhere, too for various – when to operate on someone with a valve problem; when to operate on someone with a coronary problem. Aortic problem. Heart failure problem. But I'm not seeing this addressed in our literature – when to operate on someone with endocarditis who uses drugs. I'm not sure there's anything on when to operate on someone with endocarditis, period. I'm not aware of any consensus statements about that. There should be, but there's not.	protocol, lack of knowledge
	1014	I: Just a couple more questions. Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: So, no, we don't have guidelines. We tried to write them, there are no guidelines. There are some discrepancies, every now and then, between us, the infectious disease people, the, the, the psychiatrists, and the ethics department here, who, they are a little bit distant from what we, you know, we are not on the same page. Let, let me put it in a different way, we are, uh, we, we don't look at the problem the same way, and we need to sit down more and have a more elaborate discussions. Because writing notes on a patient's chart and quoting esoteric papers just doesn't help anybody.	protocol, multidisciplinary group
	1005	Interviewer: Are there professional society guidelines? Interviewee: I'm not aware of any strict guidelines for operating on people who use IV drugs.	protocol, training, lack of knowledge, lack of resources
	1005	nterviewer: Do you think that treatment for endocarditis in people who use—who inject drugs will change in the future? Interviewee: I think it has changed, and that I think it's an epidemic and we see so much of it. I think it's changed in that we've I think tried to become a lot more aggressive in getting these patients into rehab. I also think it's changed in that the tolerance for doing multiple valve operations on patients is just not accepted amongst our specialty as much to do repetitive operations on people that continue to use	changes over time, multiple surgeries, prevalence of endocarditis, protocol

	1005	nterviewer: Are there any changes that you would like to see with regards for treatment of endocarditis? Interviewee: I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	desired changes, multidisciplinary group, protocol, cost, insurance, tx compared to broader, frustration
	1005	Interviewer: Are there any guidelines or standards of care that are used at your hospital when assessing people who inject drugs for the valve replacements? Interviewee: No.	protocol
	1014	And are there any professional society guidelines? S: For… I: For people who inject drugs getting a valve replacement? S: Not really. I've been, I've been, you know, I go across the country and give talks, and, you know, to, uh, different topics, but the subject always comes up. And, I was in Ohio, and even Ohio is epicenter of the opioid crisis. Even the guys over there haven't come up with a plan to manage these patients. I mean, it is institution dependent. And we haven't had, like, generalized guidelines, and even if we do, the little bit weird and varied for a reason.	protocol
	1014	: Gotcha. Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Good question. The initial treatment, probably not. But afterwards, I hope it does. Because that would minimize recurrence. Again, recidivism is what kills them. I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data. I: How much time do you think is needed for these changes? S: I mean, we needed them five years ago.	desired changes, multidisciplinary group, protocol, time constraints, discussing addiction, societal issue

		I: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? S: On and off. I: Do you think it's helpful?	
	1014	I: Just a couple more questions. Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacements? S: So, no, we don't have guidelines. We tried to write them, there are no guidelines. There are some discrepancies, every now and then, between us, the infectious disease people, the, the, the psychiatrists, and the ethics department here, who, they are a little bit distant from what we, you know, we are not on the same page. Let, let me put it in a different way, we are, uh, we, we don't look at the problem the same way, and we need to sit down more and have a more elaborate discussions. Because writing notes on a patient's chart and quoting esoteric papers just doesn't help anybody.	protocol, multidisciplinary group
	1009	What are some of the first things that you think about when you're asked to evaluate someone who injects drugs for a valve replacement? Surgeon: What is the microorganism, what valve is infected? Is it on the right side of the heart? The left side of the heart? Do they have heart failure? Have they had thromboembolic complications?	priorities, protocol, pre-operation care, risk evaluation
	1009	Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in cardiogenic shock with severe heart failure and a root abscess, they need an operation.	risk evaluation, deservingness, priorities, protocol, save lives

	1009	How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it.	patient consent, discussing addiction, knowledge, pre-operation care, protocol
	1009	I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	tx compared to broader, multiple surgeries, futility, tx compared to colleagues, support for surgeons, reinfection, protocol, frustration, patient story

	1009	So for post-operative care, thinking about these options, if you'd give someone a pick line and send them home, give them a pick line and have them stay in the hospital, or give them a PICC line and send them to a nursing facility? Safest option, best for the patient? Surgeon: For us, it's not by choice. No visiting nurse group in the state will accept a patient with the history of intravenous drug abuse who has a PICC line. So we can't send them home with a PICC line. So it's either they go to a nursing home or they stay in the hospital. If they're totally stable, to me it doesn't matter where they go. As long as they complete their course of antibiotics. You know, it's frustrating when these patients, again, some of whom get the PICC line. I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	PICC line risk, frustration, follow-up care, lack of resources, protocol, patient story
	1009	Are there any guidelines or standards of care used this hospital when you're assessing people who inject drugs for valve replacements? Surgeon: No. I mean, there's no guideline on what to do if someone who injects drugs. The guidelines are based on a patient's medical condition and in terms of whether you think they need an operation or not. Do they have an indication but the guidelines – no guideline will every say you have to operate because surgical guidelines always incorporate surgeon judgment. You can have someone that you think has an indication for surgery but that you feel is not indicated for X, Y or Z reasons, or is futile. And so there's nothing that ever says you have to in the surgical guidelines for endocarditis	protocol, futility, lack of resources, training
	1010	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Multiple times. How did you approach those cases, how would you approach this case? I operate on them, or I treat them based on	patient story, protocol, second chance, prioritization (secondary)

		what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later. Looking back to prior cases like this is there anything you would change about your approach in hindsight? No.	
	1001	No, not to my knowledge. No, I don't think in the Cardiac Surgery Society there would be a guideline regarding how to take care of a patient with active HIV and hep C – for example, the infection – or patients with a history of a drug use. I don't think there is such a guideline for us to follow. If you notice anything, I [would like to read, easily]. [Overlapping noise] if there's such a guideline.	lack of knowledge, lack of resources, protocol, prioritization (secondary)
rationalization secondary			
	1012	What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	SUD (secondary), rationalization (secondary)
	1012	And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness	rationalization (secondary)

	1012	Do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? I mean sometimes. Those things sometimes weigh into your decision, sometimes they have little kids and you know those things influence what you do, but in general no.	rationalization (secondary)
	1012	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So PICC line and go home is never and option because that basically gives them a mainline to use drugs so that is never an option. And there is no nursing facility, nursing company, antibiotic business that I am aware of that will manage someone with you know a history of IVDA in an outpatient setting with a PICC line. So, I don't believe that that is an option anywhere. PICC line and nursing facility- yes if possible and if the organism is one that could be potentially treated non-operatively or at least for a while to help stabilize the situation and then often what we do because it is very difficult to find nursing facilities that will take these people also because they have this terrible group of friends that often will bring drugs in and all this other stuff that surrounds the patient, they don't want them either, so they often will get left in the hospital for antibiotics for a period of time before they get their valve surgery. So, of your PICC line and go home – no; PICC line and nursing facility- yes but rarely available, so PICC line and stay in the hospital is the usual default.	rationalization (secondary)

	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	blame (secondary), disassociation (secondary), responsibility (secondary), rationalization (secondary)

	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to	responsibility (secondary), rationalization (secondary), blame (secondary)

		do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	
	1009	Interviewer: Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that.	prioritization (secondary), rationalization (secondary)

		If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	
	1009	Interviewer: What about age? Would you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? Surgeon: No.	rationalization (secondary)
	1009	If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	rationalization (secondary), rigidity (secondary)
	1006	Interviewer: Do people who inject drugs have a different operative and postoperative mortality? Interviewee: Yes.	rationalization (secondary)
	1006	Interviewer: Does it impact what type of valve, bio prosthetic versus mechanical you use? Interviewee: Yes, especially with catheter based valve replacement options, it makes me lean a lot more towards bio-prosthesis, plus patient compliance.	rationalization (secondary)
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were	rationalization (secondary)

		a risk using intravenous heroin, what their plans were for rehabilitation.	
	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	rationalization (secondary)

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	SUD (secondary), rationalization (secondary), redemption (secondary), responsibility (secondary)
	1006	Interviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	disassociation (secondary), rationalization (secondary)
	1002	Interviewer: Do people who inject drugs have different operative and postoperative mortality and complications?	rationalization (secondary)

		Respondent: I think so.	
	1002	Respondent: How would I approach? So, preoperative evaluation – you know, how serious the cardiogenic shock is, actually. You know, if the patient is in severe shock, it just depends on if it's hemodynamic shock, or even more hemodynamic and also metabolic shock, which means if the liver is dead and the kidneys are dead, then why do we need to do the surgery? So that's one thing we need to make sure, the surgical indication about the shock. Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result. Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the surgery? So yeah, those are the first things we come up with.	prioritization (secondary), rationalization (secondary)
	1002	The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	blame (secondary), paternalism (secondary), rationalization (secondary)

	1002	Interviewer: Can you tell me about your experience managing pain in this population? How do you manage pain for your patients in this scenario? Respondent: No opioids for most of the time. Interviewer: Has there ever been anything that has not worked well for pain management? Respondent: With other – the young patients are more and more – those patients have more pain than the elderly patients. So sometimes it's tough, but yeah, you just need to – I don't like to use opioids for these patient populations. Interviewer: Do you ever consult other services for pain management? Respondent: Yes, pain control.	rationalization (secondary), rigidity (secondary)
	1002	Respondent: It depends on the patient. You know, the 55 and 22-year-old – it depends on how the patient is like for 55. So it's case by case. Interviewer: Does age usually impact your decision on deciding if you're going to operate on a prosthetic valve? Respondent: I think so.	rationalization (secondary)
	1002	Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	redemption (secondary), rationalization (secondary)
	1011	I do feel that these patients are in a very vulnerable situation, they have a lot of stresses going on in their life, and there is a lot that they have to figure out, especially someone who comes in who was actively using drugs at the time of their intervention, and the idea that they are going to go through this big operation, they are going to clean themselves up right away is sometimes too much to ask of them. It is not uncommon, I think for us to see some relapses before the patient eventually can fully quit.	rationalization (secondary), redemption (secondary)

	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now. What questions do you ask? Charlie, what drugs were you using? When was the last time you used it? Have you tried quitting in the past? And then I ask them what their social support system is because I think that is what is going to prevent them from using drugs again.	paternalism (secondary), rationalization (secondary)
	1011	Does the patient's commitment to treatment impact your surgical decisions? This is a hard one to answer. And that's because I think all these patients truly want to commit to treatment at the time they're having, they're facing the dilemma but it's going to be unclear if they are actually going to carry on with their promise. This may sound a little distrusting, I don't think they're actually trying to deceive or lie it's just the situation they're in. They're in a bad situation and they truly feel like they are not going to do drugs anymore once they get the operation. They really want to lead their life and get their act together but once the operation is done then they are back out on the street and they are not feeling as miserable as they were before the operation I think that that becomes a thing of the past and then the temptations of the problem that they are faced with come back again. So, it is really hard to make a judgement as to what is going to happen based on their commitment. The way it does impact it is that somebody who is up front about that they are not going to stop using drugs and they're going to continue to use drugs in that case you have to question the utility of intervening.	SUD (secondary), blame (secondary), redemption (secondary), rationalization (secondary)
	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you	redemption (secondary), blame (secondary), rationalization (secondary)

		have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation.	
	1011	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Well I guess one of the things that is easier is valve choice. The older they are the choice of putting the bioprosthetic valve rather than the mechanical becomes a little more justifiable from just a guideline perspective. It also, someone who has made it to 55, I don't know what the expected survival of folks who do drugs is, but I think, I would think that this is someone, the 25 year old would be in much worse shape than someone who is 55, because they have a long way to go if they can get there. It is going to be a much harder thing for them to clean up, I think, because I think you are in a different place in your life and different priorities and interactions and relationships that are different. I don't know what a definitive answer you are looking for, but I do think those two patients are going to be different.	rationalization (secondary), redemption (secondary)
	1011	And maybe that is where going back to your previous question, maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the time. It's not like these patients are going back to their families, their grandparents, or an aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own police I think is a little too much to ask of them.	rationalization (secondary)
	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have small kids and they're taking care of them or someone else is taking care of them- the	follow-up care, insurance, lack of resources, rationalization (secondary)

		whole family, partner situation is not always the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	
	1016	S: I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting substance abuse help. Um, and so I'm very up front with that in addition to the risks.	blame (secondary), paternalism (secondary), rationalization (secondary)
	1016	S: Um, pass. I mean I can say that, to get enrolled in a program, to support her so she doesn't return to using drugs, whether that's with methadone or, um, you know, other medications that may be available. Beyond the specifics of that… I: When do you think that would take place? S: Um, a plan should be in place as they are leaving the hospital, or, you know, instituted before they leave the hospital so there's no drop out in care. I: What is the role of medications in that? S: Um, my understanding is that, um, medications such as methadone can help prevent patients from going back to using IV drugs. Um, and is, I don't want to say a bridge, but to some degree, a nice, um, bridge medication. Um, my bias is that, um, while it prevents them from using illegal drugs, it is still a substance that they become dependent on in the long-term.	blame (secondary), rationalization (secondary)
	1016	I: Do any specific cases come to mind, and thoughts about managing that patient? S: Um, no, I think that the, the question is, how did this, um, how did this valve get infected? Is it because of recurrent drug use, or was she really doing well in a methadone clinic and she just happened to get a dental abscess, you know, something separate? I think that the condition under which the valve gets infected, um, is, is important. I: That actually goes right into my next questions. Does it impact your decision to operate if their endocarditis is related to drug use? S: For me, it does.	rationalization (secondary), redemption (secondary)

	1016	What about the different types of valves? Does age affect on what type of valve you use? S: Yes. Um, in general, um, I am of the school of thought that I prefer, um, biologic valves, um, when I can, so even in younger patients that are in their 60s, um, and I give all my patients the option and say, here are the valve choices, um, these are the pros and cons of each. Some people really just don't want to take anticoagulation. I think there's, um, some people just don't want to worry about their valve failing. Um, but, um, I tend to, to air on the side more of prosthetic valves, uh, especially in the 60 and plus range. When you get into younger patients, it really becomes more of a conundrum, um, and young girls that potentially may want to get pregnant. I think that in the IV drug use population, um, I still favor, um, biologic valves because, um, like I said there's so many negative consequences that can occur with anticoagulation and…and truthfully, if they're able to survive and get through this, get through an addiction recovery program, rehab themselves, and then their valve fails in 10 years, at that point they've proven that they're able to comply and, um, they're always a candidate for a, you know, a mechanical valve at that point.	rationalization (secondary), redemption (secondary), responsibility (secondary)
	1016	I: Ok. Does anything specific help you choose, like the patient's housing, insurance, job status, child care? S: Um, do you mean in terms of leaving with a PICC line or… I: Yeah, like if whether they stay in the hospital, whether they go home, whether they go to a long-term care facility? S: Truthfully, um, I would say, no. Um, and the reason being is, if you're sick, I'm going to give you the care that you need to get through your illness. I understand there's a lot of social factors that get involved, but to me, these are very high risk patients, um, and there's a chance for, again, a lot of misuse of PICC lines, um, and I think that, um, you know, as much as you empathize with the needs for child care and all these other things, um, I feel like I still have to deliver the appropriate level of medical care.	responsibility (secondary), rationalization (secondary), prioritization (secondary)

	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	rationalization (secondary), redemption (secondary)
	1016	Let them prove that they can enter recovery, and then, I think the other piece of the puzzle is we have them come back to our clinic in six weeks for echo follow-up and to plan surgery at that time. The majority of patients that I see in consultation in the hospital do not show up to that six-week appointment. Um, I have had one, actually. Um, and so they take up clinic time, and, um, it's kind of my little, in some degree, my little test, if you're really committed and you come back to see me in my office, then I'm willing to operate on you, but if you can't make the appointment, and you can't demonstrate some sort of, um, follow up, then, um, you know…	blame (secondary), rationalization (secondary)
	1003	Yeah, we – as you probably know, we're involved in a study looking at that - Dr. Wurcel is the lead investigator on that – what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however,	prioritization (secondary), rationalization (secondary)

		as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	SUD (secondary), rationalization (secondary)
	1003	So then, you could have a live patient to have this discussion with. So, first and foremost, is to save the patient's life, so I'd recom – I would put the patient on a schedule, no matter what the social situation is, because I mean, we're here to help people and even you know, if she doesn't have surgery, she's going to die. So, that would be my approach.	prioritization (secondary), rationalization (secondary)
	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where	SUD (secondary), rationalization (secondary), redemption (secondary), collaboration (secondary)

		they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards.	
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	rationalization (secondary), SUD (secondary), collaboration (secondary), prioritization (secondary)
	1003	Yes. I certainly would be more aggressive with the younger patient population. That's absolutely true. Either consciously or sub-consciously. It's just a fact of life. I would, yes.	rationalization (secondary)

	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	responsibility (secondary), rationalization (secondary)
	1004	It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	rationalization (secondary), redemption (secondary)
	1004	Zero: if the person is actively in withdrawal I will not operate, it's too risky	disassociation (secondary), rationalization (secondary), rigidity (secondary)
	1004	R: Tell me about the operative risks of re-operation versus the original operation? I: It doubles the risk, the surgery is much harder	risk evaluation, rationalization (secondary)
	1004	If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato. And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs	rationalization (secondary), disassociation (secondary)

		and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	
	1015	I: Any specific things help you choose, like housing, insurance, job status, or anything like that? S: No. Availability, that's it.	rationalization (secondary)
	1015	I: Ok. How do you think, um, your approach compares with other surgeons in the country or other countries in the world? S: I don't know about other countries, but I think that in this country, most groups have the same approach, recurrent active IV drug users typically do not get offered recurrent surgery.	rationalization (secondary)
	1015	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Um, it is hard to predict, but maybe, just like everything else in medicine. I: Are there any changes that you want to see? S: Uh, I think honestly the change is going to start not with, uh, the disease, it's going to start with the disease of IV drug use and opioid use. It's not going to, I don't think the change is going to come from people who have already been infected. I: Who do you think need to make the changes in the treatment for…? S: I think it is a public health problem. I don't, the change can come from doctors, but I think the changes need to come from the companies that, um, promote this kind of behavior. Or, not, I shouldn't say that, promote, easy, um, access to opioids. I: And how much time do you think is needed for these changes? S: Oh, at least, uh, one generation. At least one generation.	rationalization (secondary), SUD (secondary)
	1007	Speaker 1: Do they have different operative and post-operative mortality complications compared to other patients? Speaker 2: Yes. Speaker 1: Okay… Um, can you please tell me my about that? Speaker 2: So, I mean, every patient is individual, but there are trends. A lot of these patients tend to be younger, so in some ways a healthier, which is what we're trying to assess, is the risk of surgery benefit. On the other hand, some social issues make them higher risk.	rationalization (secondary)

	1007	Speaker 1: Do you sometimes worry about getting viral infections like HCV or HIV when handling these sort of patients? Speaker 2: Absolutely.	rationalization (secondary)
	1007	Speaker 1: Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	responsibility (secondary), rationalization (secondary)
	1007	Speaker 1: Yeah. Thank you. So is there someone you can call in the hospital with addiction medicine expertise? Speaker 2: Absolutely. I mean, at our hospital, very… probably the best in the city for addiction. So it's good to be working carefully with them. Speaker 1: Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect because it's not, it's not so much a surgical… Speaker 1: Okay. So I had asked you about suggestions for the hospital to improve. Speaker 2: Support? Speaker 1: Yea, support Speaker 2: What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We	collaboration (secondary), rationalization (secondary)

		may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	
	1007	Speaker 1: Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	collaboration (secondary), rationalization (secondary), responsibility (secondary)
	1007	Speaker 1: Okay. So how about her opioid use disorder, how should it be treated and when? Speaker 2: Well, um, I mean I'm not an expert in the field. We wouldn't, like I said, we'll work very closely with addiction medicine, so I would defer to them, but I think they should be engaged immediately.	collaboration (secondary), rationalization (secondary)

	1007	Speaker 1: Alright. Um, do you look at the 25 year old with prosthetic valve endocarditis, different from the 55 year old? Speaker 2: Of course. We look at everybody different. Speaker 1: Yeah. So it, it seems like age impacts your decision to operate Speaker 2: Everything impacts. Any question that says that asks us to evaluate. We evaluate it. I look at a 23 year old, different than a 24 year old. Speaker 1: Yeah. Speaker 2: Everything goes into the evaluation.	age, rationalization (secondary)
	1007	Speaker 1: All right, thanks. Can you please tell me about the operative risk for reoperation versus your original operation? Speaker 2: Um, re operation is always, um, from a technical standpoint is always considered much harder. Um, and then there's all the other factors that need to be considered.	rationalization (secondary), prioritization (secondary)
	1013	o people who inject drugs have different operative and post-operative mortality? So, their typically their perioperative mortality is actually lower than most inpatients we see and the reason for that is that they are very often younger so they have fewer comorbidities um and the investigations we have done here suggest that their long-term mortality may well be worse although the challenge always with people who inject drugs is getting adequate follow up so many get lost to follow up.	rationalization (secondary)
	1013	Uh, yes it does and in the scenario, that you've described probably less so – it's the first operation and um, they're in cardiogenic shock. If somebody comes back and they are not committed and they are not in shock but they have, there is a suspicion for a vegetation and so on and so forth then it is not uncommon for us to say ok let's see if we can manage this with antibiotics at least and see if you can try to demonstrate and ability to be sober. The problem is if they come back again in shock what do you do? I don't think we turn someone down for surgery just because this is their second episode so there are placed that will have a you get one shot kind of a rule but I don't believe in that, that's not right, you can imagine someone who gets a valve replacement then is sober then relapses which is pretty common, right, and with the relapse they get infected again but they were sober for two years until their mother died or something like that then they fell off the wagon, then it feels like you've got some hope if you can deal	blame (secondary), rationalization (secondary)

		with the valve infection then they can get sober again.	
	1013	So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	collaboration (secondary), rationalization (secondary), rigidity (secondary)
	1013	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Oh, boy. Um, well, I suppose, well not that's getting really complicated and its going to depend how far along she is in her pregnancy. Cardiac surgery is very high risk for fetal loss but I suppose we would probably be more inclined to operate if she was pregnant given that there is another life involved and the chance that we might be successful.	redemption (secondary), rationalization (secondary), prioritization (secondary)
	1013	So, that's the way it usually gets presented to you by the medical student on the medicine service and I don't think about it that way. The way I think about it is the question of do I think that an operation is in the patient's best interest or not. So, lets imagine that the patient has, is an IV drug user, they've got prosthetic endocarditis, they've continually been using intravenous drugs, even in the hospital, and we see that, too right? Um, and then you presented that person to me and you say ok they have prosthetic valve endocarditis, its staph endocarditis, they've got an annular abscess they've got a mortality rate of 100% if	prioritization (secondary), rationalization (secondary)

		you don't operate and they have been using drugs while they have been in the hospital, I don't think an operation is in their best interest. Could we potentially get then through the operation from a technical standpoint, yes, but do I think that we have a likelihood of restoring them to health, I would say no because their underlying condition is so severe. So, I think it is very seldom as simple a question as 100% without and 50% with. Have I adequately pivoted? And avoided answering that question? That's the way I think about it.	
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	support for surgeons, insurance, follow-up care, changes over time, responsibility (secondary), rationalization (secondary)
	1014	: Um, kind of going on that…Tell me about your experience with managing pain in this population. S: Here we go. So, pain and not just that, pain and, uh, let's say we go the nonoperative management, where we put a PICC line in them, and they have no where to go. I mean, you put a PICC line in them, you just give them an access like, access like unbelievable to inject. And do you trust them with sending them home with six weeks of antibiotics with a PICC line, I mean, that's, that's a recipe for disaster.	rationalization (secondary)

	1014	S: Yeah, I remember, I did not operate on them the first time around, one of, one of our my partners did. And, you know, and sometimes, those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her through a big operation and go back to square one down the road? When is enough? When enough is enough?	disassociation (secondary), rationalization (secondary), blame (secondary)
	1014	I: Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions. How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are	redemption (secondary), rationalization (secondary), disassociation (secondary)

		high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that. Am I confusing you?	
	1014	Those are real-life experiences that, that, you shake your head, and I'm like, really, Mr. Trust Fund, will operate on him twice or three times, and the guy coming from under the bridge doesn't deserve it? Maybe, this guy is more…you know...	SES, deservingness, rationalization (secondary)
	1001	I mean, if that is related to the infection itself, I think the postoperative – the infection and recurrence of the infection will be much higher. On the other side, there is always then noncompliance with those patients potentially that can increase the postoperative risk, as well. You know, with the potential noncompliance, their recovery can be prolonged and would increase difficulty in the care of those patients.	rationalization (secondary)
	1001	Yeah, because it's preventable. I think every surgeon's perspective will be different, but we're not just the surgeons [unintelligible 00:28:26] but we do care about their overall health, care, and the outcome in the long run. We wish to be able to identify the real cause of the underlying disease. For example, here if endocarditis is clearly drug related and there is evidence the patient has been relapsing back into drug use, their clinical suspicion for a reinfection will be very high and predicted. So this is a different scenario from endocarditis, from the routine dental procedure, or [undiagnosis] of the etiology. So this is completely two different scenarios. Even though the surgery itself is the same – the operative short-term outcome might be	redemption (secondary), rationalization (secondary)

		similar, but their prognosis is different. That affects the surgeon's perspective of the surgery itself.	
	1001	I'd prefer the patient stayed in the hospital, if possible, but I just don't think if that would actually happen because of the financial issue. I still believe overall the hospital is the safest place for those patients – being medically managed and closely monitored. I personally don't think a patient with a recent history of active drug use should go home with a PICC line. I think it's prohibited. That's just a perfect setup for drug use again at home.	rigidity (secondary), rationalization (secondary)
	1001	If it's 100 percent, [then it is now], but it's hard. Sometimes we think patients are inoperable. It doesn't mean that the patient cannot – that the operative mortality will be 100 percent. It's hard. To be honest, if somebody has multiple-organ failure, than the surgery will be contraindicated. They cannot even survive anesthesia. So it's a different story. But a lot of people are [deemed] inoperable, not just based on the operative mortality itself. You know, it's related to other issues. Sometimes we take into consideration even the social issues – you know, the lifestyle or the age, for example.	prioritization (secondary), rationalization (secondary)
	1001	I hope there would be a guidelines. You know, how many times do we do surgery? If they go back to drug use, should we withhold the surgical intervention? Or what would be the process? You know, the medicine is becoming both standardized or individualized. So I think for an endocarditis patient, it should be the future. On one side, we should clearly have guidelines from different perspectives. On the other side, we have to mainly treat an endocarditis patient individually, based on their own needs.	rigidity (secondary), responsibility (secondary), rationalization (secondary)
	1010	There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see how they ended up down that path.	rationalization (secondary), SUD (secondary), responsibility (secondary)

	1010	I think about, I get stuck once or twice a week in the operating room. Um. And I am not just saying take my glove off and you know having blood on my fingers, which happens probably every case or every other case, every day. but I am talking about ouch a real stick, let's just say once every two weeks. You always think that it is more often but when you think about with a clear mind, but it is definitely twice a month. Um so, two of these have been documented hepatitis C where I went through employee health, and um, get tested, then retested, then tested again, I forget at 6 months or 1 year, uh, and a it put my life at home on hold, I am sure you know what I mean and also once I remember I was walking with my son who was 3 or 4 at the time and I was holding his hand and he gave me a piece of some toy or something that had a piece of plastic and I didn't realize it had given me a papercut and then I had blood, and it was during the time I was being tested during the 6 months, and I went to hold his hand and I felt something wet and I realized it was my blood, and I saw blood on his hand too and I uh that hit home.	rationalization (secondary)
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	SUD (secondary), rationalization (secondary)
	1010	Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works	SUD (secondary), rationalization (secondary)

		or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar.	
	1010	The issue starts I think earlier. And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of their endocarditis that its really not indicated to operate on someone like them.	prioritization (secondary), rationalization (secondary)
	1001	I mean, if that is related to the infection itself, I think the postoperative – the infection and recurrence of the infection will be much higher. On the other side, there is always then noncompliance with those patients potentially that can increase the postoperative risk, as well. You know, with the potential noncompliance, their recovery can be prolonged and would increase difficulty in the care of those patients.	rationalization (secondary)
	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	medical model, risk evaluation, save lives, rationalization (secondary)

	1001	Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations. In this group of patients, if they continue the IV drug use, their lifestyle – the future reinfection will be very high.	perception of risk in PWID, rationalization (secondary)
	1001	The surgical risk is high enough, and [in this moment] the cardiac surgeon's performance is carefully monitored by this society. So we're very concerned about our operative outcome. So I think if there is a high likelihood the patient would be back on the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	rationalization (secondary), responsibility (secondary)
	1001	Respondent: I would say start it right away, because they should be evaluated even in preop. Then they can be carefully monitored. You know, theoretically I would want those patients to be closely monitored for the first few months after surgery, and that way there's no chance for them to get back into the drug use – because the risk for reinfection within the first few months is very, very high.	rationalization (secondary)
	1001	Yeah, because it's preventable. I think every surgeon's perspective will be different, but we're not just the surgeons [unintelligible 00:28:26] but we do care about their overall health, care, and the outcome in the long run. We wish to be able to identify the real cause of the underlying disease. For example, here if endocarditis is clearly drug related and there is evidence the patient has been relapsing back into drug use, their clinical suspicion for a reinfection will be very high and predicted. So this is a different scenario from endocarditis, from the routine dental procedure, or [undiagnosis] of the etiology. So this is completely two different scenarios. Even though the surgery itself is the same – the operative short-term outcome might be similar, but their prognosis is different. That affects the surgeon's perspective of the surgery itself.	rationalization (secondary)
redemption secondary			

	1012	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um. I wonder what kind of patient I am going to meet. Because they come, they sort of come in different favors. There's the sort of one that you know is kind of devastated and feels really terrible about what has happened and wants to get better and then there's one that's had this before and treated through it and it's like a revolving door and there is sort of a, you know, a spectrum of personalities and I kind of wonder which sort of patient I am about to meet.	redemption (secondary)
	1012	Um, I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, futility, frustration, deservingness, redemption (secondary)
	1012	Finally, if it was 5 years since she last used drugs? Yeah so if it was 5 years since she last used, the suspicion would be that that is not true,	redemption (secondary)

		but you know people can get valve infections from other routes, dental and other things, so yeah I would be more enthusiastic about operating on her in that last situation but as I said I would probably offer her a second operation no matter what the circumstance was.	
	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	redemption (secondary), rigidity (secondary), disassociation (secondary)

	1009	Interviewer: You've talked about this a little bit but like what – does it impact your decision if the endocarditis is related to drug use? How do you feel about operating on someone who used to use drugs, you know, 10 years ago and then gets prosthetic valve endocarditis from a dental procedure or something? Surgeon: I would operate on them.	redemption (secondary)
	1009	Interviewer: So for post-operative care, thinking about these options, if you'd give someone a pick line and send them home, give them a pick line and have them stay in the hospital, or give them a PICC line and send them to a nursing facility? Safest option, best for the patient? Surgeon: For us, it's not by choice. No visiting nurse group in the state will accept a patient with the history of intravenous drug abuse who has a PICC line. So we can't send them home with a PICC line. So it's either they go to a nursing home or they stay in the hospital. If they're totally stable, to me it doesn't matter where they go. As long as they complete their course of antibiotics. You know, it's frustrating when these patients, again, some of whom get the PICC line. I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	redemption (secondary), rigidity (secondary)
	1009	I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	patient story, redemption (secondary)
	1009	nterviewer: I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they –	collaboration (secondary), redemption (secondary), responsibility (secondary), paternalism (secondary)

		Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	
	1006	Interviewer: What complications do you worry about? Interviewee: Recidivism.	redemption (secondary)
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	SUD (secondary), rationalization (secondary), redemption (secondary), responsibility (secondary)

	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration (secondary), paternalism (secondary), redemption (secondary)
	1002	Interviewer: So if someone did not want to stop using drugs or get treatment – Respondent: Oh, you mean – okay. Yeah, I think that will change it, kind of. Interviewer: How much do you consider it? Imagine if someone is not interested at all in stopping drug use. Does that make you less likely to perform surgery? Respondent: Yes.	redemption (secondary)
	1002	Respondent: Yeah, if the patient is not willing to stop, then why do we need to do the surgery?	redemption (secondary), blame (secondary)
	1002	Respondent: Yeah, what's the cause of that endocarditis? That's the important question. Interviewer: Would it impact your decision if it was because of drug use? Respondent: I think so. Interviewer: How so? Respondent: How so? Well, it depends. I think it depends on the [overlapping noise] scenario. Interviewer: How do you feel about operating on someone who used to use drugs ten years ago, and then they get prosthetic valve endocarditis after a dental procedure? Respondent: I mean, why not operate?	redemption (secondary), rigidity (secondary)
	1002	Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	redemption (secondary), rationalization (secondary)
	1011	I do feel that these patients are in a very vulnerable situation, they have a lot of stresses going on in their life, and there is a lot that they have to figure out, especially someone who comes in who was actively using drugs at the time of their intervention, and the idea that they are going to go through this big	rationalization (secondary), redemption (secondary)

		operation, they are going to clean themselves up right away is sometimes too much to ask of them. It is not uncommon, I think for us to see some relapses before the patient eventually can fully quit.	
	1011	So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	blame (secondary), redemption (secondary), rigidity (secondary)
	1011	Does the patient's commitment to treatment impact your surgical decisions? This is a hard one to answer. And that's because I think all these patients truly want to commit to treatment at the time they're having, they're facing the dilemma but it's going to be unclear if they are actually going to carry on with their promise. This may sound a little distrusting, I don't think they're actually trying to deceive or lie it's just the situation they're in. They're in a bad situation and they truly feel like they are not going to do drugs anymore once they get the operation. They really want to lead their life and get their act together but once the operation is done then they are back out on the street and they are not feeling as miserable as they were before the operation I think that that becomes a thing of the past and then the temptations of the problem that they are faced with come back again. So, it is really hard to make a judgement as to what is going to happen based on their commitment. The way it does impact it is that somebody who is up front about that they are not going to stop using drugs and they're going to continue to use drugs in that case you have to question the utility of intervening.	SUD (secondary), blame (secondary), redemption (secondary), rationalization (secondary)
	1011	if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse.	prioritization (secondary), redemption (secondary)
	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting	redemption (secondary), blame (secondary), rationalization (secondary)

		drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation.	
	1011	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Well I guess one of the things that is easier is valve choice. The older they are the choice of putting the bioprosthetic valve rather than the mechanical becomes a little more justifiable from just a guideline perspective. It also, someone who has made it to 55, I don't know what the expected survival of folks who do drugs is, but I think, I would think that this is someone, the 25 year old would be in much worse shape than someone who is 55, because they have a long way to go if they can get there. It is going to be a much harder thing for them to clean up, I think, because I think you are in a different place in your life and different priorities and interactions and relationships that are different. I don't know what a definitive answer you are looking for, but I do think those two patients are going to be different.	rationalization (secondary), redemption (secondary)
	1011	Would your approach change if it was 5 years since she last used drugs? Yes.	redemption (secondary)
	1016	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? S: How sick they are, and their ability to withstand surgery, and what is their likelihood of, um, refraining from using drugs if I put a, um, prosthetic valve in.	prioritization (secondary), redemption (secondary)
	1016	: Does it impact what type of valve you use, mechanical vs. bioprosthetic? S: I always generally use, um, bioprosthetic valves. I'm concerned with compliance and there is a lot of additional risk with, um, mechanical valves.	redemption (secondary)

	1016	I: Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	blame (secondary), redemption (secondary), responsibility (secondary)
	1016	I: Do any specific cases come to mind, and thoughts about managing that patient? S: Um, no, I think that the, the question is, how did this, um, how did this valve get infected? Is it because of recurrent drug use, or was she really doing well in a methadone clinic and she just happened to get a dental abscess, you know, something separate? I think that the condition under which the valve gets infected, um, is, is important. I: That actually goes right into my next questions. Does it impact your decision to operate if their endocarditis is related to drug use? S: For me, it does.	rationalization (secondary), redemption (secondary)
	1016	how would you feel about operating on someone who used to use drugs 10 years ago, gets prosthetic valve endocarditis after a dental procedure? S: I think that's a very different clinical situation. And, um, I think that that patient, you know, um, it's still risky in the sense that you're still undergoing the same challenges, and then you're still introducing narcotics again postoperatively for pain management, so	redemption (secondary), collaboration (secondary)

		I think that the counseling at the other, at the postoperative period is just as important in that second patient with the dental abscess. But it certainly makes my decision to replace the valve, um, a lot more straightforward.	
	1016	What about the different types of valves? Does age affect on what type of valve you use? S: Yes. Um, in general, um, I am of the school of thought that I prefer, um, biologic valves, um, when I can, so even in younger patients that are in their 60s, um, and I give all my patients the option and say, here are the valve choices, um, these are the pros and cons of each. Some people really just don't want to take anticoagulation. I think there's, um, some people just don't want to worry about their valve failing. Um, but, um, I tend to, to air on the side more of prosthetic valves, uh, especially in the 60 and plus range. When you get into younger patients, it really becomes more of a conundrum, um, and young girls that potentially may want to get pregnant. I think that in the IV drug use population, um, I still favor, um, biologic valves because, um, like I said there's so many negative consequences that can occur with anticoagulation and…and truthfully, if they're able to survive and get through this, get through an addiction recovery program, rehab themselves, and then their valve fails in 10 years, at that point they've proven that they're able to comply and, um, they're always a candidate for a, you know, a mechanical valve at that point.	rationalization (secondary), redemption (secondary), responsibility (secondary)
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	rationalization (secondary), redemption (secondary)

	1003	However, if someone is critically ill, and time is of the essence, then we will move ahead and do surgery regardless of whether or not I think they're going to be able to be successfully treated from the addiction standpoint. On the other hand, if a patient is not critically sick, and they're having a medical indication for surgery, however if they're not in a program, where I think they're going to be successful in avoiding use of drugs again, I may postpone surgery until they get into a rehab program. So, once we do the surgery, I know they'll be on the road to recovery. But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	redemption (secondary), prioritization (secondary)
	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care,	SUD (secondary), rationalization (secondary), redemption (secondary), collaboration (secondary)

		while they're in the hospital and perhaps afterwards.	
	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone.	paternalism (secondary), redemption (secondary)
	1003	Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously. If it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using	redemption (secondary), prioritization (secondary), paternalism (secondary)

		drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery.	
	1003	So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	paternalism (secondary), redemption (secondary), blame (secondary)
	1003	Most patients I've found have gone on and been clean for a x number of months, sometimes years, and then gone back using drugs again. Chances are I'll offer them a second operation. If I get a sense they're going to try once more to fight the disease, and hopefully overcome it. So, it's - I know – I don't have a set answer; it depends on the set of circumstances, but I have to say, more often than that, we will offer them a second operation. Provided it get - I know that they tried in the past, and I think the capacity to try again.	SUD (secondary), redemption (secondary)
	1004	It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	rationalization (secondary), redemption (secondary)
	1004	Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	rigidity (secondary), redemption (secondary)
	1004	No, though a younger person gets more of a chance. It's sad, because the younger person is destroyed.	blame (secondary), redemption (secondary)
	1004	Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting	paternalism (secondary), blame (secondary), redemption (secondary)

		cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation.	
	1015	I: Yeah. What…does it impact your decision to operate if their endocarditis is related to drug use? S: Um…sometimes. It really depends on how hard of a reoperation I think it's going to be. I: Gotcha. S: If I think I that, um, I'm going to cause more harm by reoperating and they continue to use IV drugs, then my decision is going to be, no I'm not going to reoperate. If there is something that is potentially related to past use and can be easily fixed, of course I would offer an operation. If they are active using and reinfected their valve, and they've got something that is easily fixable, then I'd consider doing it.	prioritization (secondary), redemption (secondary)
	1007	Speaker 1: Okay. Thank you. Speaker 1: So does this patient's commitment to treatments, so treatment for opioid use disorder, does it impact your surgical decisions to operate on her? Speaker 2: Huh? In which way? Speaker 1: So does her commitments to treatments for opioid use disorders? Say she has, she goes through drug rehabilitation or detox. Does that impact your decision? Speaker 2: Yeah, It's a positive thing. Speaker 1: Okay. So why does it impact your decision to treat her, your decision to operate on her? Speaker 2: Well, in that case, in a particular Vignette, it doesn't, Speaker 1: It doesn't. Okay. Speaker 2: Because you're just, I mean, a lot of times these are not even that interactive patients.	redemption (secondary)
	1007	Speaker 1: So do you feel comfortable about operating on someone who used to use drugs 10 years ago, then gets a prosthetic valve endocarditis after it dental procedure? So they used to use drugs and then gets um, a prosthetic valve endocarditis after a dental procedure? Speaker 2: Yeah.	redemption (secondary)

	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	prioritization (secondary), redemption (secondary), blame (secondary)
	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	blame (secondary), redemption (secondary)
	1008	nterviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance.	redemption (secondary), SUD (secondary)
	1008	Interviewer: Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of	blame (secondary), redemption (secondary)

		thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	
	1008	Interviewer: Okay. I have another -- and, so, imagine -- back to Katie, that you've operated on her. She's doing well. She's linked to a methadone maintenance program. And then one year later, she's back in the hospital and she has prosthetic valve endocarditis. So, you've seen this before? Respondent: Yep. Interviewer: Yeah. What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	blame (secondary), redemption (secondary)
	1008	Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time. Interviewer: Okay. And, so, would it impact you, and you've sort of spoken to this. But like, so, if endocarditis related to drug use, that impacts your decision to operate? Respondent: The second time around? Absolutely. Yes.	blame (secondary), redemption (secondary), rigidity (secondary)

	1008	Interviewer: Okay. So, in a case where like if the patient was definitely going to die without the surgery, like 100 percent mortality and had maybe 50 percent operative mortality? Respondent: Wouldn't matter. I would follow the same algorithm that I had before. If they came in shooting up drugs, they're not getting another operation. Interviewer: Okay. Wait. What about for folks who weren't injecting drugs, like -- Respondent: In the past? That had quit? Interviewer: Yeah. Respondent: Yeah, we would operate.	redemption (secondary), rigidity (secondary)
	1013	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? What are my first thoughts? Um, so probably my first question that I ask is whether they are still using or not so the first thought is where are they in the, so I think of their drug use as the primary condition that we are managing and that the valve infection is a secondary consequence really of the what the underlying condition is. So, its where they are in the spectrum of that, So its just like when I'm asked to see a patient who has cancer who also has valve disease the first question I have in mind is do they have metastatic cancer with 6 months to live, do they have an indolent prostate cancer that can go for years and years and years, where are they with their primary condition.	redemption (secondary), responsibility (secondary)
	1013	Does it impact what type of valve you use- mechanical or bioprosthetic? It does to the extent of where they seem to be in their recovery. So, I have certainly have had patients who are in recovery and have been abstinent for a good period of time and they want a mechanical valve and they believe that they can be good about taking coumadin and consistent about taking their coumadin then they get a mechanical valve. If somebody is early on and we are worried about their ability to be compliant with anticoagulation, then we are more inclined to put in a tissue valve. So, I would say broadly speaking we tend to put tissue valves in them for that reason specifically compliance with coumadin.	redemption (secondary), responsibility (secondary)
	1013	So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then	collaboration (secondary), paternalism (secondary), redemption (secondary)

		you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge.	
	1013	But then there are other people who you do the valve replacement on and they get discharged and the next day they are using again. It's pretty hard to take that person back and re-operate on them. So in some way I wouldn't say it's a black and white rule, in some way their ability to demonstrate an ability to recover from the primary problem is important just like if you have someone with colon cancer who had you know mets to their liver and you addressed the liver mets but you didn't address the colon cancer and they had more mets to the liver you wouldn't go back and take out the liver mets you have to deal with the primary problem and I like to think of it as, I like to rephrase it or reframe it as source control; do you have source control for the infection and if its an undrained, intraabdominal abscess then you don't have good source control and if its continued IV drug use then you don't have source control. It doesn't make sense to keep putting prostheses into people where you don't have good course control. And in my heart, I feel like putting it that way as a matter of source control helps to separate it a little bit from any kind of moral decision making around is this a behavior that they can control and all that kind of messiness	disassociation (secondary), blame (secondary), redemption (secondary)
	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	redemption (secondary), rigidity (secondary)
	1013	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Oh, boy. Um, well, I suppose, well not that's getting really complicated and its going to depend how far along she is in her pregnancy. Cardiac surgery is very high risk for fetal loss	redemption (secondary), rationalization (secondary), prioritization (secondary)

		but I suppose we would probably be more inclined to operate if she was pregnant given that there is another life involved and the chance that we might be successful.	
	1014	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes and no. I mean, the blatant refusal is, it gives me pause. If a patient is saying, "Nope, I won't stop," and if they are in a mental, you know, state, where they're absolutely, you know, saying, "You operate on me and I know I'm going to use again," you know, those are far and few in between. Those are rare, but sometimes you see them. And, and, you, kind of, wonder, what am I doing here? This is where, you know, the support, the hospital support, with psychiatrists and all the disciplines, it becomes a multidisciplinary approach, and I've tried to involve other, some of my partners, like, you know, this guy is a recurrent offender, and he intends on, on, so what are we doing? So, that's, that's the epitome of futility in my eyes.	blame (secondary), redemption (secondary)
	1014	I: Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions. How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're	redemption (secondary), rationalization (secondary), disassociation (secondary)

		wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that. Am I confusing you?	
	1001	The surgical risk is high enough, and [in this moment] the cardiac surgeon's performance is carefully monitored by this society. So we're very concerned about our operative outcome. So I think if there is a high likelihood the patient would be back on the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	redemption (secondary), paternalism (secondary)
	1001	I will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of reinfection will be coming, and that would be even worse.	blame (secondary), redemption (secondary)
	1001	We have [our OTNs] – you know, the [protocol] – but if we believe if somebody postoperative is in pain or (their) narcotics use is out of norm, then we would consult a specialist. But first we want to – you know, a medical reason – if that can be explained. If there's really no medical reason for excessive or intensive pain, then we would investigate.	collaboration (secondary), redemption (secondary)
	1001	To be honest, it's not exactly the same, but I understand. The mechanism is similar. I never use that example, liver transplant and relapse in alcohol use, as an example to my patients, but I think they are similar. To my knowledge, if a patient has no sign of quitting alcohol, the liver transplant will be contraindicated. That's	redemption (secondary), rigidity (secondary)

		based on my knowledge in my past in my training. But I think even though we have never made it clear in our practice to an endocarditis patient who has no plan of quitting the drug use – but I think eventually there will be an overall consensus, you know?	
	1001	I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	redemption (secondary), rigidity (secondary), blame (secondary)
	1001	Yeah, because it's preventable. I think every surgeon's perspective will be different, but we're not just the surgeons [unintelligible 00:28:26] but we do care about their overall health, care, and the outcome in the long run. We wish to be able to identify the real cause of the underlying disease. For example, here if endocarditis is clearly drug related and there is evidence the patient has been relapsing back into drug use, their clinical suspicion for a reinfection will be very high and predicted. So this is a different scenario from endocarditis, from the routine dental procedure, or [undiagnosis] of the etiology. So this is completely two different scenarios. Even though the surgery itself is the same – the operative short-term outcome might be similar, but their prognosis is different. That affects the surgeon's perspective of the surgery itself.	redemption (secondary), rationalization (secondary)
	1010	Does a history of injecting drugs impact what type of valve you would choose? It does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to	responsibility (secondary), redemption (secondary)

		them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	
	1010	But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service. And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	redemption (secondary), responsibility (secondary), blame (secondary)
	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	blame (secondary), redemption (secondary)
	1010	So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by	blame (secondary), redemption (secondary)

		definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal.	
	1010	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes. For example, how would you feel about operating on someone who used to use drugs 10 years ago gets prosthetic valve endocarditis after a dental procedure? I wouldn't think twice about it. I would offer them an operation.	redemption (secondary)
	1010	And what if when she presented with prosthetic valve endocarditis it was 5 years since she last used drugs? And then she relapsed? Yes. I would see that more favorably because I would think that she has shown that she can stay off drugs. Who am I to say what happened you know if she did it right after going home than if she did it 5 years later? Now what is the magic timeline? I don't know but to me that says that is someone who probably has a predilection to doing this and they fought hard for 5 years and uh, I would see it the same way as someone who had coronary artery disease and quit smoking for 5 years and then they smoked again after 5 years. Its uh, I am not going to pass judgement. So, it would make a difference, 5 years verses a day.	redemption (secondary), SUD (secondary)
	1001	I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	redemption (secondary)
regional differences			

	1003	And what do you think about like, drug rehab? Do you think it's different – is it different than drug detox? Do you think it's - Respondent: Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	stigma , societal issue, timing of SUD tx, multidisciplinary group, medical model, regional differences, follow-up care, changes over time, support for patient
	1004	R: What is your sense of how like your approach to treating patients who inject drugs with infective endocarditis, compared to like, other people, other surgeons here at Tufts, or other surgeons around the country? I: I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	tx compared to broader, tx compared to colleagues, disagreements (professional), collaboration with addiction medicine, regional differences
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So,	regional differences, tx compared to broader, lack of resources, stigma

		we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	
	1014	S: No, I'm glad somebody…I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that. We don't, we don't.	societal issue, insurance, follow-up care, regional differences, multidisciplinary group
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach	regional differences, tx compared to broader, lack of resources, stigma

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	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So, we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	tx compared to broader, lack of resources, stigma , regional differences
	1014	I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this	multidisciplinary group, follow-up care, regional differences, seriousness, insurance, lack of resources

		is something that we do, we just cannot afford, we don't, we don't provide that.	
rehab vs detox			
	1019	Um, what do you think about drug rehab? Um, I… I think that it works sometimes, and sometimes it doesn't. Is this- I… I support it. OK. Is this any different than drug detox, in your opinion? I think so, yes. Drug detox is kind of a more of an acute thing, um, where drug rehab is a… is a program designed to change, you know, physical and psychological and emotional needs.	rehab v detox
	1019	OK. Is this any different than drug detox, in your opinion? I think so, yes. Drug detox is kind of a more of an acute thing, um, where drug rehab is a… is a program designed to change, you know, physical and psychological and emotional needs.	rehab v detox
	1019	OK. Is this any different than drug detox, in your opinion? I think so, yes. Drug detox is kind of a more of an acute thing, um, where drug rehab is a… is a program designed to change, you know, physical and psychological and emotional needs.	rehab v detox
	1016	I: What do you think about drug rehab and is it different than drug detox? S: Um, truthfully, I don't know the exact difference between the two.	rehab v detox, lack of knowledge

	1002	Interviewer: What do you think about the term drug rehab? Respondent: I don't know. [Laughs] I mean, I'm not so interested in those patient care – except for the surgical part. So I'm not so interested in those. Interviewer: Do you think that drug rehab is different than drug detox? Respondent: I don't know. No comment.	rehab v detox, lack of knowledge, priorities, mechanical problem, left vs right side
	1007	All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox. Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	rehab v detox, support for patient, collaboration with addiction medicine, defensive
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it. I: Do you think drug rehab is different than drug detox? S: Yes. In my mind, and that's…what my perception is, is that drug detox is more about the medical management of someone that is, um, coming off of, of, of these drugs, dealing with, um, withdrawal and other side effects of,	rehab v detox

		um, removing these, whereas drug rehab, to me, is about long term abstinence and or, you know, addressing some of the other issues that led to their substance abuse.	
	1011	What do you think about drug rehab? I'm not sure what that completely entails but if that means that you know once the patients are beyond their acute phase, they can then go into chronic maintenance phase of whatever detox, addiction medications they're going to be on is what I understand it to be.	rehab v detox, commitment to recovery
	1017	I: Do you think drug rehab is different than drug detox? S: Yes. In my mind, and that's…what my perception is, is that drug detox is more about the medical management of someone that is, um, coming off of, of, of these drugs, dealing with, um, withdrawal and other side effects of, um, removing these, whereas drug rehab, to me, is about long term abstinence and or, you know, addressing some of the other issues that led to their substance abuse.	rehab v detox, withdrawal management, medical model
	1015	I: What do you think about drug rehab and is it different from drug detox? S: Um…the more and more I treat this disease, I feel it is a chronic disease and can be suppressed but not fully treated. So, yeah, I think that drug rehab has a place, but I don't know that, you know, once you, once you are a drug user you are pretty much always a drug user. The same way you would think of alcohol, you know.	rehab v detox, stigma , futility, liver vs heart
	1004	I: What do you think about drug rehab? Compared to Detox? R: well rehab is social and group support, and detox is just withdrawing	rehab v detox, withdrawal management
	1005	Interviewer: What do you think about drug rehab? Interviewee: I think it's excellent. Interviewer: Is it different than drug detox? Interviewee: Yes, but rehab can incorporate some aspects of detox, depending on the center.	SUD treatment, rehab v detox

	1012	What do you think about drug rehab? Uh, I think it's, I think it's necessary for most patients to get over this problem, intense rehab, drug rehabilitation, I think it's necessary. And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	rehab v detox, follow-up care, support for patient, timing of SUD tx
	1005	Interviewer: What do you think about drug rehab? Interviewee: I think it's excellent. Interviewer: Is it different than drug detox? Interviewee: Yes, but rehab can incorporate some aspects of detox, depending on the center.	SUD treatment, rehab v detox
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	1004	well rehab is social and group support, and detox is just withdrawing	rehab v detox, withdrawal management
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	1015	I: What do you think about drug rehab and is it different from drug detox? S: Um…the more and more I treat this disease, I feel it is a chronic disease and can be suppressed but not fully treated. So, yeah, I think that drug rehab has a place, but I don't know that, you know, once you, once you are a drug user you are pretty much always a drug user. The same way you would think of alcohol, you know.	stigma , liver vs heart, futility, rehab v detox
	1014	I: You kind of mentioned this before, what do you think about drug rehab, and how do you think it is different from drug detox? S: I would think so. Uh, here goes, I thought	rehab v detox

		they were the same, but maybe one is longer-term than the other, you know. It's, it's, uh, I thought they were synonymous, somewhat, to a certain extent.	
	1002	Interviewer: What do you think about the term drug rehab? Respondent: I don't know. [Laughs] I mean, I'm not so interested in those patient care – except for the surgical part. So I'm not so interested in those. Interviewer: Do you think that drug rehab is different than drug detox? Respondent: I don't know. No comment.	rehab v detox
	1005	Interviewer: Do you want to receive more training on this? Interviewee: No. Interviewer: What do you think about drug rehab? Interviewee: I think it's excellent. Interviewer: Is it different than drug detox? Interviewee: Yes, but rehab can incorporate some aspects of detox, depending on the center.	rehab v detox, desired changes, SUD treatment
	1014	I: You kind of mentioned this before, what do you think about drug rehab, and how do you think it is different from drug detox? S: I would think so. Uh, here goes, I thought they were the same, but maybe one is longer-term than the other, you know. It's, it's, uh, I thought they were synonymous, somewhat, to a certain extent.	SUD treatment, rehab v detox
	1001	Interviewer: Do you consider drug rehab different or the same as drug detox? Respondent: I don't know.	rehab v detox
reinfection			
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation

		If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	
	1006	Interviewer: Tell me about the operative risks of reoperation versus that original operation? Interviewee: Well, that's a secondary, sternotomy, you have to cut out the infected prosthetic valve, removing all of the prosthetic valve material is a challenge and it could retain infection. It's a much higher risk procedure, or is a higher risk procedure, I shouldn't say much, that's quantitative.	perception of risk in PWID, multiple surgeries, reinfection, relapse
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation

	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	multiple surgeries, deservingness, lack of resources, commitment to recovery, frustration, futility, reinfection, relapse
	1010	I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	liver vs heart, deservingness, stigma , reinfection, lack of resources, risk evaluation
	1010	For example, how would you feel about operating on someone who used to use drugs 10 years ago gets prosthetic valve endocarditis after a dental procedure?	perception of risk in PWID, commitment to recovery, reinfection, time between operations

		I wouldn't think twice about it. I would offer them an operation.	
	1010	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Does age impact your decision to operate? If it is caused by drugs? No	age, deservingness, reinfection
	1010	And what if when she presented with prosthetic valve endocarditis it was 5 years since she last used drugs? And then she relapsed? Yes. I would see that more favorably because I would think that she has shown that she can stay off drugs. Who am I to say what happened you know if she did it right after going home than if she did it 5 years later? Now what is the magic timeline? I don't know but to me that says that is someone who probably has a predilection to doing this and they fought hard for 5 years and uh, I would see it the same way as someone who had coronary artery disease and quit smoking for 5 years and then they smoked again after 5 years. Its uh, I am not going to pass judgement. So, it would make a difference, 5 years verses a day.	perception of risk in PWID, relapse, commitment to recovery, deservingness, reinfection
	1008	what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	risk evaluation, deservingness, multiple surgeries, post-operation care, relapse, reinfection, commitment to recovery, follow-up care, frustration, futility

	1008	: Does it impact the kind of valve that you would give them the first time? Respondent: Well, people that inject drugs tend not to live as long as people that don't. So, I would tend to put more tissue valves in. I don't think there's a difference in, you know, re-infection. But I think I would put more tissue valves in these people, which is a reason they're going to be on Warfarin, anyway. Then I would put them in a mechanical valve if they're young.	age, perception of risk in PWID, reinfection, post-operation care, relapse, valve preference
	1008	Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	liver vs heart, cost, deservingness, medical model, relapse, frustration, paternalism, reinfection
	1008	What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	priorities, medical model, deservingness, commitment to recovery, reinfection

	1008	like how -- what's the success rate of surgery versus -- or effectiveness rate, I guess, of surgery versus antibiotics? Respondent: For prosthetic valve? Interviewer: Yeah. Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time.	futility, deservingness, priorities, medical model, reinfection
	1008	So, what if in like a case where someone who used to use drugs, you know, 10 years ago, got prosthetic valve endocarditis after a dental procedure or something? Respondent: We would treat them with antibiotics. Interviewer: Okay. Respondent: And if that -- if we can't cure them with that. Late endocarditis, about 50 percent of the time, you can treat just with antibiotics. But if they -- if we can't, if they have an abscess, we would operate.	perception of risk in PWID, time between operations, medical model, reinfection
	1008	So, with the younger patients, I would put in a mechanical valve. Interviewer: They last longer? Respondent: Huh? Interviewer: They last longer? Respondent: Yes, they will. They tend to last forever. Unless you get them re-infected.	stigma , perception of risk in PWID, age, reinfection
	1008	And if it had been five years since she had last used drugs? Respondent: Yeah. I would be more prone to operate.	time between operations, deservingness, commitment to recovery, reinfection
	1008	Can you tell me a little bit about the operative risks of re-operation versus the original operation? Respondent: Yeah, it's a riskier operation. Interviewer: Yeah. Why? Respondent: Because it's all scarred in. You got to take the old valve out, putting a new valve in. There's increased risk of re-infection. Those are the reasons.	risk evaluation, multiple surgeries, reinfection

	1016	I: Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	reinfection, commitment to recovery, liability of medical professionals, risk evaluation, multiple surgeries
	1016	I: You didn't do the initial one, so they're coming back to you and you're seeing them for the first time… S: Yeah, because they, I don't want to say turned or refused from that hospital that they went to, or they're like, I've already been at this hospital, I'm going to go to a different hospital. I: How often does that happen? S: A lot.	reinfection, frustration, transient, second chance
	1016	I: Do any specific cases come to mind, and thoughts about managing that patient? S: Um, no, I think that the, the question is, how did this, um, how did this valve get infected? Is it because of recurrent drug use, or was she really doing well in a methadone clinic and she just happened to get a dental abscess, you know, something separate? I think that the condition under which the valve gets infected, um, is, is important. I: That actually goes right into my next questions. Does it impact your decision to operate if their endocarditis is related to drug use? S: For me, it does.	reinfection, perception of risk in PWID

	1006	nterviewer: Do people who inject drugs have a different operative and postoperative mortality? Interviewee: Yes. Interviewer: What complications do you worry about? Interviewee: Recidivism.	perception of risk in PWID, relapse, reinfection, post-operation care
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID
	1006	nterviewer: All right. Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Not much, unless they're multiple recurrence patients. Interviewer: Can you say a little bit more about why or why not, what do you think— Interviewee: The existing data. The data, it's	commitment to recovery, data, futility, multiple surgeries, reinfection, deservingness, priorities, relapse

		the same thing for suicides, people make serious suicide attempts, the chances they'll make another one are high. By the time you get into—if they survive two of 'em, their projected mortality is terrible, and it's the same as IV drug abuse.	
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	liver vs heart, deservingness, frustration, reinfection, relapse, commitment to recovery
	1006	Interviewee: Yeah, we see them. Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	deservingness, second chance, medical model, reinfection, commitment to recovery, data, futility, relapse
	1006	Interviewer: I think you're answering this question already, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	perception of risk in PWID, time between operations, commitment to recovery, deservingness, reinfection, protocol
	1006	Interviewer: What if it was five years since she last used drugs? Interviewee: Well you feel if it's a prosthetic	time between operations, commitment to recovery, second chance, deservingness, reinfection

		valve infection, a little more inclined to give her a second chance	
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail	time between operations, futility, stigma , deservingness, reinfection, commitment to recovery
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	relapse, perception of risk in PWID, commitment to recovery, futility, reinfection, deservingness
	1002	so you mean she is still doing the drug use? Interviewer: Yeah, and now she's come back with prosthetic valve endocarditis. Respondent: Yeah, what's the cause of that endocarditis? That's the important question. Interviewer: Would it impact your decision if it was because of drug use? Respondent: I think so. Interviewer: How so? Respondent: How so? Well, it depends. I think it depends on the [overlapping noise] scenario.	deservingness, multiple surgeries, relapse, perception of risk in PWID, reinfection
	1002	Interviewer: How do you feel about operating on someone who used to use drugs ten years ago, and then they get prosthetic valve endocarditis after a dental procedure? Respondent: I mean, why not operate?	time between operations, reinfection

	1002	All right, and do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old with prosthetic valve endocarditis? Respondent: It depends on the patient. You know, the 55 and 22-year-old – it depends on how the patient is like for 55. So it's case by case. Interviewer: Does age usually impact your decision on deciding if you're going to operate on a prosthetic valve? Respondent: I think so.	age, reinfection, deservingness
	1002	Interviewer: What is your sense about how you approach these patients in this population compared to your colleagues? Do you think it's similar? Different? Respondent: Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	tx compared to colleagues, second chance, reinfection, relapse, deservingness, commitment to recovery, frustration, futility, perception of risk in PWID
	1002	nterviewer: You mentioned earlier how once you think about it, the second time think about it, but the third time might be kind of a limit for you. Respondent: Yeah, second time or third time.	multiple surgeries, reinfection
	1007	Tell me your thoughts about management decisions for these relapse cases. Speaker 2: Well, I mean we manage them the same as any other patient. You um, you know, assessing the risk, the benefit, surgery, support system. Speaker 1: Okay. So does it impact your decision to operate if the endocarditis is related to drug use? Speaker 2: Yeah, everything impacts our decision to operate.	multiple surgeries, risk evaluation, reinfection, defensive
	1007	Speaker 1: So do you feel comfortable about operating on someone who used to use drugs 10 years ago, then gets a prosthetic valve endocarditis after it dental procedure? So they used to use drugs and then gets um, a prosthetic valve endocarditis after a dental procedure? Speaker 2: Yeah.	time between operations, reinfection
	1007	m, does the time period between endocarditis episodes change whether you would operate or not? Speaker 2: Meaning like a prosthetic valve infection? I don't know the question you were saying. Speaker 1: So it's just a follow up on the	time between operations, reinfection

		previous question. And it says, does the time period between endocarditis episodes change whether you would do the operation? Maybe shorter time period versus longer. Speaker 2: Everything affects it. If somebody gets infected, um, two months later, it's a very difficult operative situation versus two years later. So everything affects it.	
	1013	Tell me about the operative risks of reoperation verses the original operation. So, um, in general terms, the operative risk of redo valve replacement the first time around is not hugely different from the operative risk from the first operation except in this scenario where you are talking about prosthetic valve endocarditis. So, if you are talking about a redo aortic valve replacement for structural valve deterioration of the valve, the valve just wore out, the operative risk is not too different between the first operation and the second operation; it's a little higher with the second operation. If you are talking about for infection though and prosthetic endocarditis the operative risk if 10-fold higher. So, its much higher risk and that is because of the complexity of getting out the old prosthesis, getting rid of all the infection and putting in, doing the reconstruction that is required to get the new valve in.	knowledge, second chance, multiple surgeries, risk evaluation, reinfection
	1003	what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	relapse, risk evaluation, data, reinfection, age, follow-up care, post-operation care

	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	futility, frustration, deservingness, protocol, tx compared to colleagues, reinfection, commitment to recovery
	1009	If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I	protocol, deservingness, futility, reinfection, relapse, risk evaluation

		don't feel comfortable doing it, acknowledging that, yes, the patient will die.	
	1011	It becomes trickier because at that point you are not relying on future projections, it's not what, like the conversation you had with the patient the first time around. Going back to your previous question about you know their commitment to quit injecting drugs at this point they have a track record so my first question would be, when Katie comes back is that was, she injecting drugs again since the time of her previous operation and I think that is the big question. Because patients can get endocarditis without injecting drugs, I mean that's not you know one population, so what I would say is that if we can be reasonably sure that she has been clean and she hasn't done any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse.	protocol, deservingness, perception of risk in PWID, commitment to recovery, reinfection
	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	deservingness, follow-up care, relapse, futility, frustration, tx compared to colleagues, reinfection, defensive
	1011	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? I think I just answered that question. If it is not related to drug use, then the decision is much more straight forward, I think. If it is related to	perception of risk in PWID, reinfection

		drug use, then all these other factors come into play.	
	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	deservingness, reinfection, multiple surgeries, time between operations, futility, liability of medical professionals
	1013	Tell me about the operative risks of reoperation verses the original operation. So, um, in general terms, the operative risk of redo valve replacement the first time around is not hugely different from the operative risk from the first operation except in this scenario where you are talking about prosthetic valve endocarditis. So, if you are talking about a redo aortic valve replacement for structural valve deterioration of the valve, the valve just wore out, the operative risk is not too different between the first operation and the second operation; it's a little higher with the second operation. If you are talking about for infection though and prosthetic endocarditis the operative risk if 10-fold higher. So, its much higher risk and that is because of the complexity of getting out the old prosthesis, getting rid of all the infection and putting in, doing the reconstruction that is required to get the new valve in.	multiple surgeries, risk evaluation, reinfection, knowledge, second chance
	1015	I mean there are a number of them, yeah. I: Yeah. What…does it impact your decision to operate if their endocarditis is related to drug use? S: Um…sometimes. It really depends on how hard of a reoperation I think it's going to be. I: Gotcha. S: If I think I that, um, I'm going to cause more harm by reoperating and they continue to use IV drugs, then my decision is going to be, no I'm not going to reoperate. If there is something that is potentially related to past use and can be easily fixed, of course I would offer an operation. If they are active using and reinfected their valve, and they've got	mechanical problem, seriousness, multiple surgeries, commitment to recovery, reinfection, relapse

		something that is easily fixable, then I'd consider doing it.	
	1001	In this group of patients, if they continue the IV drug use, their lifestyle – the future reinfection will be very high. The surgical risk is high enough, and [in this moment] the cardiac surgeon's performance is carefully monitored by this society. So we're very concerned about our operative outcome. So I think if there is a high likelihood the patient would be back on the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	perception of risk in PWID, liability of medical professionals, discussing addiction, reinfection, relapse, administration
	1001	will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of reinfection will be coming, and that would be even wors	commitment to recovery, accountability, discussing addiction, paternalism, reinfection, priorities, risk evaluation
	1001	I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	multiple surgeries, patient consent, deservingness, relapse, multidisciplinary group, reinfection, follow-up care
	1001	Interviewer: How would you feel about working with someone you used to use ten years ago, and then they get a prosthetic valve endocarditis because of a dental procedure? Would that make you feel differently than Katy's situation? Respondent: Yeah, because it's preventable. I think every surgeon's perspective will be different, but we're not just the surgeons [unintelligible 00:28:26] but we do care about their overall health, care, and the outcome in the long run. We wish to be able to identify	commitment to recovery, perception of risk in PWID, accountability, deservingness, reinfection, follow-up care

		the real cause of the underlying disease. For example, here if endocarditis is clearly drug related and there is evidence the patient has been relapsing back into drug use, their clinical suspicion for a reinfection will be very high and predicted. So this is a different scenario from endocarditis, from the routine dental procedure, or [undiagnosis] of the etiology. So this is completely two different scenarios. Even though the surgery itself is the same – the operative short-term outcome might be similar, but their prognosis is different. That affects the surgeon's perspective of the surgery itself.	
	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	commitment to recovery, deservingness, follow-up care, frustration, futility, post-operation care, reinfection, relapse, risk evaluation
	1008	Interviewer: Does it impact the kind of valve that you would give them the first time? Respondent: Well, people that inject drugs tend not to live as long as people that don't. So, I would tend to put more tissue valves in. I don't think there's a difference in, you know, re-infection. But I think I would put more tissue valves in these people, which is a reason they're going to be on Warfarin, anyway. Then I would put them in a mechanical valve if they're young.	follow-up care, multiple surgeries, post-operation care, reinfection, relapse, risk evaluation

	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance
	1008	Interviewer: Okay. I have another -- and, so, imagine -- back to Katie, that you've operated on her. She's doing well. She's linked to a methadone maintenance program. And then one year later, she's back in the hospital and she has prosthetic valve endocarditis. So, you've seen this before? Respondent: Yep. Interviewer: Yeah. What are some of your management decisions regarding these cases? Respondent: We check. Do a tox screen of the -- we can document they have kept using drugs, which I would say is 95 percent of the time. If they present with prosthetic valve endocarditis, we give them antibiotics. I mean in some cases, we would re-operate but it's generally our policy the second time around, if they keep using drugs, we don't re-operate.	data, deservingness, follow-up care, protocol, commitment to recovery, relapse, reinfection

	1008	Interviewer: Can you tell me a little bit about the operative risks of re-operation versus the original operation? Respondent: Yeah, it's a riskier operation. Interviewer: Yeah. Why? Respondent: Because it's all scarred in. You got to take the old valve out, putting a new valve in. There's increased risk of re-infection. Those are the reasons.	risk evaluation, reinfection, relapse
	1008	Interviewer: Yeah. What about your sense -- like your sense of your approach compared to like other people in the US? Respondent: I think it's -- ours is pretty much in the middle. A lot of people do what we do. Where everybody gets -- the first valve. But if they re-infect it, a lot of places do not operate. There's other places that they can get five valves. There aren't too many of those. But there are some people that do that.	tx compared to broader, reinfection, multiple surgeries
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	commitment to recovery, deservingness, second chance, liability of medical professionals, contract, futility, reinfection, multiple surgeries
	1012	Are there professional society guidelines on this issue? Um. The ones that I am aware of are pretty wishy washy, they're not, you know, they don't guide us as to everybody gets one valve and after that no more, that's a personal and a programmatic decision on how aggressive to be with patients that continue to um use IV drugs and continue to get infection.	protocol, disagreements (professional), lack of resources, deservingness, reinfection, relapse
	1012	you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me	stigma , seriousness, relapse, reinfection, accountability, deservingness, follow-up care, multiple surgeries, futility, lack of resources

		that time and time again it does not. And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness. And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? I	
	1016	Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	commitment to recovery, liability of medical professionals, reinfection, risk evaluation, multiple surgeries
	1016	You didn't do the initial one, so they're coming back to you and you're seeing them for the first time… S: Yeah, because they, I don't want to say turned or refused from that hospital that they went to, or they're like, I've already been at this hospital, I'm going to go to a different hospital. I: How often does that happen? S: A lot. I: Really? S: I think it depends, too, on, you know, BLANK has a lot of hospitals all in one area. But we do get a lot of doctor shopping and, um, transfers.	frustration, reinfection, second chance, transient

	1016	I think that the, the question is, how did this, um, how did this valve get infected? Is it because of recurrent drug use, or was she really doing well in a methadone clinic and she just happened to get a dental abscess, you know, something separate? I think that the condition under which the valve gets infected, um, is, is important. I: That actually goes right into my next questions. Does it impact your decision to operate if their endocarditis is related to drug use? S: For me, it does.	reinfection, perception of risk in PWID
	1006	Interviewer: What complications do you worry about? Interviewee: Recidivism.	relapse, reinfection, risk evaluation
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1006	Interviewer: Tell me about the operative risks of reoperation versus that original operation? Interviewee: Well, that's a secondary, sternotomy, you have to cut out the infected prosthetic valve, removing all of the prosthetic valve material is a challenge and it could retain infection. It's a much higher risk procedure, or is a higher risk procedure, I shouldn't say much, that's quantitative.	perception of risk in PWID, multiple surgeries, reinfection, relapse

	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation
	1008	Interviewer: Yeah. What about your sense -- like your sense of your approach compared to like other people in the US? Respondent: I think it's -- ours is pretty much in the middle. A lot of people do what we do. Where everybody gets -- the first valve. But if they re-infect it, a lot of places do not operate. There's other places that they can get five valves. There aren't too many of those. But there are some people that do that.	tx compared to broader, reinfection, multiple surgeries, rigidity (secondary), responsibility (secondary)

	1015	I: Yeah. What…does it impact your decision to operate if their endocarditis is related to drug use? S: Um…sometimes. It really depends on how hard of a reoperation I think it's going to be. I: Gotcha. S: If I think I that, um, I'm going to cause more harm by reoperating and they continue to use IV drugs, then my decision is going to be, no I'm not going to reoperate. If there is something that is potentially related to past use and can be easily fixed, of course I would offer an operation. If they are active using and reinfected their valve, and they've got something that is easily fixable, then I'd consider doing it.	reinfection, relapse, commitment to recovery, multiple surgeries
	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	commitment to recovery, deservingness, second chance, frustration, futility, reinfection, relapse, risk evaluation
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case,	data, changes over time, reinfection, stigma

		because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely. It could happen. Yeah. I: Interesting. How recent was that? S: Five years ago, six years ago. I could send it to you.	
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely. It could happen. Yeah. I: Interesting. How recent was that? S: Five years ago, six years ago. I could send it to you.	data, changes over time, reinfection, stigma

	1005	Interviewee: Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary. Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes.	multiple surgeries, pre-operation care, deservingness, reinfection, relapse, accountability, commitment to recovery, frustration
	1005	Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: That patient would not be an active drug user and would be treated like any non drug user.	perception of risk in PWID, deservingness, reinfection, stigma
	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not the heart, it is one of their problems, it is not their main problem. That's their problem.	contract, reinfection, second chance, empathy, patient story, patient consent
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it	data, reinfection, medical model, stigma , changes over time

		to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely.	
	1009	I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around.	discussing addiction, patient consent, accountability, deservingness, multiple surgeries, paternalism, reinfection, futility
	1009	What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back.	frustration, support for patient, SUD treatment, follow-up care, reinfection, support for surgeons, administration, desired changes
	1009	Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the	tx compared to colleagues, reinfection, tx compared to broader

		operation for recurrent drug abuse if they infect the new valve from that.	
	1009	I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	tx compared to broader, multiple surgeries, futility, tx compared to colleagues, support for surgeons, reinfection, protocol, frustration, patient story
	1009	You've talked about this a little bit but like what – does it impact your decision if the endocarditis is related to drug use? How do you feel about operating on someone who used to use drugs, you know, 10 years ago and then gets prosthetic valve endocarditis from a dental procedure or something? Surgeon: I would operate on them.	time between operations, reinfection, risk evaluation

	1009	In a case where if a patient had 100 percent mortality without the surgery, definitely going to die but had maybe 50 percent operative mortality, would it be worth taking the patient to the OR? What's your risk calculation on that? Surgeon: What's the reason we're going? Is it recurrent endocarditis from injection drug abuse or is it just any patient? Interviewer: Let's say any patient for now. Surgeon: If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	risk evaluation, perception of risk in PWID, multiple surgeries, stigma , save lives, reinfection, futility, relapse
responsibility secondary			
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	responsibility (secondary), paternalism (secondary), collaboration (secondary)
	1012	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Uh. I do a little bit less of it because of, because my practice is different. I don't get as many of the inpatient consults. So, I don't do much of the endocarditis here. My prior job I did a ton of endocarditis. I would say I am a little more aggressive in offering surgery than some. There are some surgeons that give people one chance and that's it, there is a lot that do that, and there are even some that	responsibility (secondary)

		don't give them any chances. Um and I am not making a judgement; my Catholic guilt will usually push me to operate a little bit more than some of the others.	
	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we	blame (secondary), disassociation (secondary), responsibility (secondary), rationalization (secondary)

		feel supported for caring for these patients? One hundred percent, no.	
	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be	responsibility (secondary), rationalization (secondary), blame (secondary)

		managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	

	1009	Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	responsibility (secondary), disassociation (secondary)

		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1009	nterviewer: I want to follow up on the Addiction Medicine piece a little bit. At what point do you call them for a consult? What is the process of working with them? Surgeon: Every time I'm asked to see a patient with endocarditis I try to figure out why they have endocarditis and if it's possibly related to intravenous injection I – at the time of my consult, in my recommendation I write "Should be seen by the substance abuse service," just right off the bat. Whether we're going to operate or not, I have the team engage those patients. Interviewer: And then you've expressed some frustration with how they – Surgeon: Yeah, now, there's probably more. You know, to be honest, before it wasn't a high priority for the hospital to have enough people to do these things. It's great in the hospital, you know, if there's someone employed by the hospital they come around and they have these conversations and kind of talk about this. That's great. But it's what happens when they leave the hospital.	collaboration (secondary), redemption (secondary), responsibility (secondary), paternalism (secondary)

	1006	Interviewer: Okay. How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: At best, moderate. Interviewer: What are some of the available treatments for opioid use disorder? Interviewee: Well, I think psychotherapy, suboxone, methadone. I don't even know that much about suboxone, I think it's a combination drugs, buprenorphine with something else, social services, that's about all I know.	responsibility (secondary)
	1006	Interviewer: Do you want to receive more training on this? Interviewee: If it's concise.	responsibility (secondary)
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	SUD (secondary), rationalization (secondary), redemption (secondary), responsibility (secondary)

	1011	So, when we see a patient with injection drug abuse, we screen them, but I would be worried about getting hepatitis C in the same way that I would for a drug abuse patient than I would be for someone else who has hepatitis C for an unrelated reason. I think that is something that we ask the staff to be careful about as well because these are sharps that we are going to be handling, we are going to be dealing with bodily fluids, not only operating but perioperatively in the ICUs and floors pre and after the operation.	responsibility (secondary), infection risk to surgeons
	1011	think it's a reasonable comparison if you were to think about it in terms of disease and the treatment in the sense that uh, that the disease is not valve failure, that is the symptom of the problem that the patient is facing, the real problem is their drug abuse thing. If you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant.	blame (secondary), SUD (secondary), responsibility (secondary)
	1011	some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	responsibility (secondary), rigidity (secondary)
	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons in the country or in the world? I think everybody struggles with this and whatever we see in our division, there is a spectrum of folks who are more sympathetic verses less sympathetic to these patients and I think that would be an index what the world is going to be. This is a microcosm, and the rest of the country probably falls somewhere along the spectrum.	tx compared to broader, responsibility (secondary)

	1016	I: Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	blame (secondary), redemption (secondary), responsibility (secondary)
	1016	What about the different types of valves? Does age affect on what type of valve you use? S: Yes. Um, in general, um, I am of the school of thought that I prefer, um, biologic valves, um, when I can, so even in younger patients that are in their 60s, um, and I give all my patients the option and say, here are the valve choices, um, these are the pros and cons of each. Some people really just don't want to take anticoagulation. I think there's, um, some people just don't want to worry about their valve failing. Um, but, um, I tend to, to air on the side more of prosthetic valves, uh, especially in the 60 and plus range. When you get into younger patients, it really becomes more of a conundrum, um, and young girls that potentially may want to get pregnant. I think that in the IV drug use population, um, I still favor, um, biologic valves because, um, like I said there's so many negative consequences that can occur with anticoagulation and…and truthfully, if they're able to survive and get through this, get through an addiction recovery program, rehab themselves, and then their valve fails in 10 years, at that point	rationalization (secondary), redemption (secondary), responsibility (secondary)

		they've proven that they're able to comply and, um, they're always a candidate for a, you know, a mechanical valve at that point.	
	1016	What do you think about these options… PICC line and go home, PICC line and stay in the hospital, or a PICC line and go to a nursing facility? S: I do, I've seen a lot of misuse of PICC lines, um, so I don't ever send anybody home with a PICC line. Um, I think that PICC line and going to a nursing facility is what we have mostly done. At some point, you do want to get patients out of the hospital, um, and keeping them here just for antibiotics is not an appropriate use of an acute level center, so I think a nursing home is, is a good, um, intermediate.	PICC line risk, rigidity (secondary), responsibility (secondary)
	1016	I: Ok. Does anything specific help you choose, like the patient's housing, insurance, job status, child care? S: Um, do you mean in terms of leaving with a PICC line or… I: Yeah, like if whether they stay in the hospital, whether they go home, whether they go to a long-term care facility? S: Truthfully, um, I would say, no. Um, and the reason being is, if you're sick, I'm going to give you the care that you need to get through your illness. I understand there's a lot of social factors that get involved, but to me, these are very high risk patients, um, and there's a chance for, again, a lot of misuse of PICC lines, um, and I think that, um, you know, as much as you empathize with the needs for child care and all these other things, um, I feel like I still have to deliver the appropriate level of medical care.	responsibility (secondary), rationalization (secondary), prioritization (secondary)
	1016	(Repeat of question above). So how does your approach, when you see patients who inject drugs, you decide whether to operate or not, how does that differ from your colleagues? S: Yeah, uh, there are surgeons that are very reluctant to operate on endocarditis. I'm pretty reluctant to operate on endocarditis. Um, I'm not, I don't refuse patients if they have endocarditis, but, um, it's not something I	responsibility (secondary)

		seek out, or, I don't get excited when I get the consults, because they're very difficult cases. Um, there are some surgeons that are more aggressive, and just say let's put the valve in and do it, um, and will even offer that repeat operation and, um, to me, I really draw the line at you get one chance and, you know, I don't approve of doctor shopping and, um, here's your chance, I've been up front with you.	
	1016	S: Um, it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their recovery, and, and help when we have a team approach.	collaboration (secondary), responsibility (secondary)
	1003	Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be interested in doing that, but it's you know, right now, not practical. For me.	responsibility (secondary)
	1003	ell, while they're in the hospital, obviously, they're being – well, we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction	collaboration (secondary), responsibility (secondary)

		medicine obviously involved, too, about Suboxone therapy.	
	1003	You know, all surgeons have been instructed these days to limit the amount of narcotics we send our patients home on. So, we're certainly, fairly, stringent about how much Percocet or Oxycodone our patients go home on. That's also true for this patient population. But, we're not - we make sure they're getting adequate pain relief, because of - they're also on the chronic therapy. So, again, I – in terms of the pain management, as I mentioned, the pain team see them immediately full stop, and then they get transitioned to the long-term medications and they'll let Dr. Patil's team manage that.	responsibility (secondary), collaboration (secondary)
	1003	Well, they all need some element of narcotics, so – and we find the intravenous medications work well in the ICU. Intravenous Fentanyl, intravenous Dilaudid. And then on the floor, the oral agents seem to work fairly well in addition. Once they get transitioned to IV and oral drugs, we use oral Dilaudid; also, Percocets. And then we'll add, often times, a non-steroidal inflammatory - anti-inflammatory agents, such as Toradol, people are using Toradol. And then - some patients, [it] actually works; hard to believe, but some patients respond to Toradol. Or this patient population.	responsibility (secondary)
	1003	Interviewer: Yeah. Do you start with an NSAID, or…? Respondent: No. Interviewer: Okay. Respondent: Well, that's a good question. Do we start with it? No, but we could [unintelligible 0:18:05] it, if necessary. So probably half our patients are on Toradol. And then, I don't know – NSAIDs and narcotics: I don't have much expertise with other - those other medications out there for pain. Ultram, and Tramadol – those kind of things. I don't have a lot of experience with those.	responsibility (secondary)

	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	responsibility (secondary), rationalization (secondary)
	1003	Respondent: I think unless a parent is there 24/seven, they're liable to have people come to the house and - Interviewer: Mm-hmm. Respondent: - friends, and potentially use drugs to their PICC line.	responsibility (secondary)
	1003	Interviewer: Okay. Okay. Okay. What about – so, would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? Respondent: No. Interviewer: Okay. Respondent: It's – you put someone on the	responsibility (secondary), prioritization (secondary)

		lung machine, it puts the fetus at risk for fetal demise. So, that's my concern. Whether or not to offer surgery, no, I mean, I'll - pregnant or not pregnant, if they need an operation, we'll do it. It's just, we're - what's going to happen to the fetus during the operation? That's my concern.	
	1003	Respondent: I think I'm more aggressive. Interviewer: Okay. Respondent: I'm more willing to do it. The first, time, second time, sometimes third time. That's just - my overall philosophy is different than my colleagues. But, yeah. Interviewer: Okay. And patients – and - Respondent: Around the country? Interviewer: Yeah. Respondent: I still think people like myself are a minority. Unfortunately,	responsibility (secondary)
	1003	Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive. So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is	responsibility (secondary), prioritization (secondary), collaboration (secondary)

		infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates. I just wish there was more – I just wish all the people involved in the care of these patients realize that there's certain times you've got to move ahead and intervene soon. So, it's part of my job, actually, to educate people. And it's been a struggle. Yeah.	
	1004	R: If the patient has 100 percent mortality without surgery, and like a 50 percent [operative] mortality, like would you say it's worth taking the patient to the operating room? I: That patient sounds inoperable, their mortality is too high, it's too high a risk	responsibility (secondary)
	1004	I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	responsibility (secondary)
	1015	I: How should this patient's opioid use disorder be treated and when? This is going back to Katie. S: Um…I don't think there is a time. I think it needs to be treated throughout the whole hospital stay and post-op. I don't think you say, ok now we've done surgery, now you start treatment. The treatment needs to start the minute they step in the door or become identified as drug users.	SUD (secondary), responsibility (secondary)
	1015	To close, is there anything I haven't asked you about that you would like to say? S: Uh…I think that, um, people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and	responsibility (secondary), collaboration (secondary)

		physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	
	1007	Speaker 1: Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	responsibility (secondary), rationalization (secondary)
	1007	Speaker 1: Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	collaboration (secondary), rationalization (secondary), responsibility (secondary)
	1007	Speaker 1: Okay. Would you like to receive more training on, you know, medications used to treat opioid use disorder or do you think you're, would you like to receive it? Speaker 2: Sure! We could always learn	responsibility (secondary)

	1007	Speaker 1: All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox. Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	collaboration (secondary), responsibility (secondary)
	1007	Speaker 2: Um, again, we work with addiction medicine and have them consult before the surgery, but we would acknowledge them same as anyone else with additional methadone or whatever.	collaboration (secondary), responsibility (secondary)
	1007	Speaker 1: Okay. Um, how about your experience with managing withdrawal in this population? Speaker 2: Um, I mean, we don't really manage with withdrawal. Speaker 1: Um, do withdrawal symptoms impact your ability to operate or manage the patient's pain? Speaker 2: Well, uh, uh, opioid withdrawal. Speaker 1: Yeah. Yeah, of course. Everything. The answer is yes to anything and everything.	responsibility (secondary), prioritization (secondary)
	1007	Speaker 1: Okay. Thank you. Um, do you think the treatment for endocarditis in people who inject drugs will change in the future? Speaker 2: Yes. Speaker 1: Are there any changes you would like to see? Speaker 2: More social support. That's where the need is.	changes over time, societal issue, responsibility (secondary), SUD (secondary)
	1007	Speaker 1: Who do you think needs to make these changes on how much time is needed for these changes? Speaker 2: The administration at the hospitals needs to have more commitment to it, if, if that's what they're gonna do. The time	collaboration (secondary), SUD (secondary), responsibility (secondary)

		depends how well they're up there and executing it.	
	1008	Interviewer: Yeah. What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	rigidity (secondary), responsibility (secondary), prioritization (secondary)
	1008	Interviewer: Yeah. What about your sense -- like your sense of your approach compared to like other people in the US? Respondent: I think it's -- ours is pretty much in the middle. A lot of people do what we do. Where everybody gets -- the first valve. But if they re-infect it, a lot of places do not operate. There's other places that they can get five valves. There aren't too many of those. But there are some people that do that.	tx compared to broader, reinfection, multiple surgeries, rigidity (secondary), responsibility (secondary)
	1013	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? What are my first thoughts? Um, so probably my first question that I ask is whether they are still using or not so the first thought is where are they in the, so I think of their drug use as the primary condition that we are managing and that the valve infection is a secondary consequence really of the what the underlying condition is. So, its where they are in the spectrum of that, So its just like when I'm asked to see a patient who has cancer who also has valve disease the first question I have in mind is do they have metastatic cancer with 6 months to live, do they have an indolent prostate cancer that can go for years and years and years, where are they with their primary condition.	redemption (secondary), responsibility (secondary)
	1013	Does it impact what type of valve you use- mechanical or bioprosthetic? It does to the extent of where they seem to be in their recovery. So, I have certainly have had patients who are in recovery and have been abstinent for a good period of time and they want a mechanical valve and they believe that they can be good about taking coumadin and	redemption (secondary), responsibility (secondary)

		consistent about taking their coumadin then they get a mechanical valve. If somebody is early on and we are worried about their ability to be compliant with anticoagulation, then we are more inclined to put in a tissue valve. So, I would say broadly speaking we tend to put tissue valves in them for that reason specifically compliance with coumadin.	
	1013	Are there professional society guidelines on this issue? Uh- not really. There have been debates specifically published in the cardiothoracic surgical literature about some of the ethical issues related to treating people who inject drugs but I don't think there is a strong guideline	protocol, responsibility (secondary)
	1013	So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	prioritization (secondary), blame (secondary), responsibility (secondary)
	1013	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Yeah, I think it is quite variable. Surgeons here, and we have certainly not mandated one approach. I think that there are a number of people who feel the way I do, there are some who are much more reluctant to operate.	responsibility (secondary), disassociation (secondary)
	1013	What is your sense about how your approach to treat patients compares to other surgeons in the country or the world? Uh I suspect that I am more willing to operate than others are.	tx compared to broader, responsibility (secondary)
	1014	I: And are there any professional society guidelines? S: For… I: For people who inject drugs getting a valve replacement? S: Not really. I've been, I've been, you know, I go across the country and give talks, and, you know, to, uh, different topics, but the subject always comes up. And, I was in Ohio, and even Ohio is epicenter of the opioid crisis. Even the guys over there haven't come up with a plan to manage these patients. I mean, it is institution dependent. And we haven't had, like, generalized guidelines, and even if we do, the little bit weird and varied for a reason.	responsibility (secondary)

	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	support for surgeons, insurance, follow-up care, changes over time, responsibility (secondary), rationalization (secondary)
	1001	Yeah, and I think most of my colleagues share the same perspective. You know, there is really no conflict among us. We have our own standards, and if we need help – that's usually the case from the effects of the disease – you know, ethic committees. So they're around. They are available.	responsibility (secondary), collaboration (secondary)
	1001	Interviewer: Are you interested in receiving more training on this? Respondent: Yeah, if my schedule allows.	responsibility (secondary)
	1001	It's tough. It's difficult. I think there is no exception for those patients who require more narcotics or complain – you know, more pain than a regular patient. That's just our [experience]. Certainly it is difficult to take care of those patients, postoperative.	responsibility (secondary)
	1001	Given the circumstances now, endocarditis is just pandemic, affecting the financial conditions and socioeconomics. It's difficult. I think that society cannot afford having this patient again and again, multiple times – and whether [unintelligible 00:24:55]. To me, even though we would [choose to save people's lives], there are certain limits to something we can do. But again, that requires a discussion between the healthcare professionals, not just the surgeons. It should be based on the studies or a recommendation from the society and/or the medical society, not just the surgical society.	responsibility (secondary), rigidity (secondary)

	1001	I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	responsibility (secondary), rigidity (secondary)
	1001	I hope there would be a guidelines. You know, how many times do we do surgery? If they go back to drug use, should we withhold the surgical intervention? Or what would be the process? You know, the medicine is becoming both standardized or individualized. So I think for an endocarditis patient, it should be the future. On one side, we should clearly have guidelines from different perspectives. On the other side, we have to mainly treat an endocarditis patient individually, based on their own needs.	rigidity (secondary), responsibility (secondary), rationalization (secondary)
	1010	There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see how they ended up down that path.	rationalization (secondary), SUD (secondary), responsibility (secondary)
	1010	Does a history of injecting drugs impact what type of valve you would choose? It does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in	responsibility (secondary), redemption (secondary)

		quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	
	1010	ou don't have the option to say I do not feel comfortable exposing myself to this, I mean I am willing to take a chance when I don't know a patient has it, but if I have you know a drug addict with a high viral load I don't have the right in paper at least to say I do not feel comfortable operating. And maybe I shouldn't. I don't know. But it is something I think about.	collaboration (secondary), responsibility (secondary)
	1010	Do you feel supported in your care of people who inject drugs? Supported by whom? Potentially that service? I can't say I have sought their support. We have the multidisciplinary meeting where I hear their views, you know listen to what they have to say. I have sought their medical advice and I think they are always available to give medical advice, but that is just one piece of the puzzle that you need to put together to decide what is the best course. Do you think the hospital could do more to support you in the care of these patients? No, I feel supported by the hospital.	collaboration (secondary), responsibility (secondary)
	1010	know that things have changed in the past years and there is medications being given, suboxone, you know uh psychological help. But I can't say I am an expert for what works for a specific condition. Do you want to receive more training on this? I don't think it would change what I do for the patients.	responsibility (secondary)
	1010	But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service. And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	redemption (secondary), responsibility (secondary), blame (secondary)

	1010	I would certainly not put a PICC line in someone then send them home. If they came back because of documented drug use, then I think that is a disservice to the patient. PICC line and hospital I would have no issue with that that is usually what we do. PICC line and facility, there are two facilities that come to mind that patient's themselves know that it is easier for them to get drugs there than get drugs at home. PICC line and [specific rehab] I would say yes. PICC line and uh what's the one ? [Specific facility] Yes [specific facility], no. Uh there is another one too ? [Specific facility] [Specific facility], no. You know uh, I think talking to the patient and see what they think because you know they are addicted but they are not, you know they could be bad, they could be good, they could be very smart, they could be dumb, they could be anything, but they're addicted. Just like you know it makes no sense when someone talks to a patient loud, they're not deaf, they just have coronary disease, it's the same thing as well.	responsibility (secondary)
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	SUD (secondary), collaboration (secondary), responsibility (secondary)
	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more people to operations that in other countries, even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany	responsibility (secondary)

		some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	
	1001	The surgical risk is high enough, and [in this moment] the cardiac surgeon's performance is carefully monitored by this society. So we're very concerned about our operative outcome. So I think if there is a high likelihood the patient would be back on the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	rationalization (secondary), responsibility (secondary)
	1001	We've been waiting to take on the [tough] cases, the patients who are not covered. Certainly this is not just our problem; this is society's issue. It's going to be the focus. I don't think there's anything that could be done better so far.	responsibility (secondary)
	1001	Interviewer: Are you interested in receiving more training on this? Respondent: Yeah, if my schedule allows.	responsibility (secondary)
	1001	Given the circumstances now, endocarditis is just pandemic, affecting the financial conditions and socioeconomics. It's difficult. I think that society cannot afford having this patient again and again, multiple times – and whether [unintelligible 00:24:55]. To me, even though we would [choose to save people's lives], there are certain limits to something we can do. But again, that requires a discussion between the healthcare professionals, not just the surgeons. It should be based on the studies or a recommendation from the society and/or the medical society, not just the surgical society.	responsibility (secondary)
	1001	I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative	disassociation (secondary), responsibility (secondary)

		decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	
rigidity secondary			
	1012	Does it impact what type of valve you chose? Yes. How so? Because generally they tend to be younger patients and younger patients if they have a valve lesion that's congenital or infectious from some other unfortune, unfortunate happenstance then you would probably advise them on a mechanical heart valve, mechanical heart valves require coumadin, and um, if you have a mechanical heart valve and you don't take your coumadin it's very very dangerous. So, most surgeons, I think do not put mechanical heart valves in people who are known drug users, unless they've been known to, you know, abstain for a long period of time, so you know, and we have all been burned by making exceptions to that rule.	blame (secondary), rigidity (secondary)

		Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around. Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I just say if you use any sort of, you know, if you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on	
	1009	him twice and it came out that he doesn't care	paternalism (secondary), blame (secondary), rigidity (secondary)

		about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn't have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1009	Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	disassociation (secondary), rigidity (secondary)

	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	redemption (secondary), rigidity (secondary), disassociation (secondary)

	1009	Interviewer: So for post-operative care, thinking about these options, if you'd give someone a pick line and send them home, give them a pick line and have them stay in the hospital, or give them a PICC line and send them to a nursing facility? Safest option, best for the patient? Surgeon: For us, it's not by choice. No visiting nurse group in the state will accept a patient with the history of intravenous drug abuse who has a PICC line. So we can't send them home with a PICC line. So it's either they go to a nursing home or they stay in the hospital. If they're totally stable, to me it doesn't matter where they go. As long as they complete their course of antibiotics. You know, it's frustrating when these patients, again, some of whom get the PICC line. I've had patients that have been 24 hours out from their operation having drugs brought into them in the intensive care unit so they can inject them in the central lines that were placed for the surgery. And that's happened I think at least two times that I can recall.	redemption (secondary), rigidity (secondary)
	1009	If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	rationalization (secondary), rigidity (secondary)
	1009	Interviewer: Are there any guidelines or standards of care used this hospital when you're assessing people who inject drugs for valve replacements? Surgeon: No. I mean, there's no guideline on what to do if someone who injects drugs. The guidelines are based on a patient's medical condition and in terms of whether you think they need an operation or not. Do they have an indication but the guidelines – no guideline will every say you have to operate because surgical guidelines always incorporate surgeon judgment. You can have someone that you think has an indication for surgery but that you feel is not indicated for X, Y or Z reasons, or is futile. And so there's nothing that ever says you have to in the surgical guidelines for endocarditis.	rigidity (secondary), disassociation (secondary)

	1006	Interviewer: Are there professional society guidelines? Interviewee: Oh, indications for surgery? Interviewer: Yeah, I think they mean with regards to IV drug users versus non-users. Interviewee: To be honest, I don't know There are guidelines if you're talking just about IV drug abuse or endocarditis indications and endocarditis more broadly. I don't think they draw distinctions in those indications between IV drug abusers and non IV drug abusers.	rigidity (secondary)
	1002	Interviewer: Can you tell me about your experience managing pain in this population? How do you manage pain for your patients in this scenario? Respondent: No opioids for most of the time. Interviewer: Has there ever been anything that has not worked well for pain management? Respondent: With other – the young patients are more and more – those patients have more pain than the elderly patients. So sometimes it's tough, but yeah, you just need to – I don't like to use opioids for these patient populations. Interviewer: Do you ever consult other services for pain management? Respondent: Yes, pain control.	rationalization (secondary), rigidity (secondary)
	1002	Respondent: Yeah, what's the cause of that endocarditis? That's the important question. Interviewer: Would it impact your decision if it was because of drug use? Respondent: I think so. Interviewer: How so? Respondent: How so? Well, it depends. I think it depends on the [overlapping noise] scenario. Interviewer: How do you feel about operating on someone who used to use drugs ten years ago, and then they get prosthetic valve endocarditis after a dental procedure? Respondent: I mean, why not operate?	redemption (secondary), rigidity (secondary)

	1011	So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	blame (secondary), redemption (secondary), rigidity (secondary)
	1011	Are there professional society guidelines? There are guidelines regarding endocarditis. There are, um, there are, I am not familiar with any society guidelines on our side regarding specific guidelines for patients using IV drugs.	rigidity (secondary)
	1011	some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	responsibility (secondary), rigidity (secondary)
	1016	What do you think about these options… PICC line and go home, PICC line and stay in the hospital, or a PICC line and go to a nursing facility? S: I do, I've seen a lot of misuse of PICC lines, um, so I don't ever send anybody home with a PICC line. Um, I think that PICC line and going to a nursing facility is what we have mostly done. At some point, you do want to get patients out of the hospital, um, and keeping them here just for antibiotics is not an appropriate use of an acute level center, so I think a nursing home is, is a good, um, intermediate.	PICC line risk, rigidity (secondary), responsibility (secondary)
	1003	A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	rigidity (secondary)
	1003	There should be, but there's not, because we – there's a lot of things in cardiac surgery that are now – there's task forces and they establish guidelines, that you're supposed to adhere, too for various – when to operate on someone with a valve problem; when to operate on someone with a coronary problem.	rigidity (secondary)

		Aortic problem. Heart failure problem. But I'm not seeing this addressed in our literature – when to operate on someone with endocarditis who uses drugs. I'm not sure there's anything on when to operate on someone with endocarditis, period. I'm not aware of any consensus statements about that. There should be, but there's not.	
	1004	sad. Tough decisions. These people come in sick and don't take care of themselves. I do worry about getting viral infections like Hep C and HIV. There are no professional guidelines.	blame (secondary), rigidity (secondary)
	1004	R: Are you willing to stop using? Promise me that you'll stop using, that you'll do rehab. And if they come back, I wouldn't do it. That's pretty much what I say to patients around their addiction.	paternalism (secondary), rigidity (secondary)
	1004	No idea, if she has the operation, she's agreed to the contract to enter treatment. I don't know anything about medications or psychotherapy.	disassociation (secondary), rigidity (secondary)
	1004	Zero: if the person is actively in withdrawal I will not operate, it's too risky	disassociation (secondary), rationalization (secondary), rigidity (secondary)
	1004	Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	rigidity (secondary), redemption (secondary)
	1007	Speaker 1: All right. So what do you think, um, about these options? PICC line and go home? PICC line and stay in the hospital and PICC line and go to the nursery facility. Speaker 2: What do I think in which way? Speaker 1: It's an open ended question. We just want to know your, your perspectives on them Speaker 2: I think the unwritten standard today is that most people stay in house because of fear of liability. Speaker 1: Okay Speaker 2: Whether that's justified or not, that is kind of the most popular answer. Speaker 1: Okay, so what's the safest option? What would you think is the safest option and what's the best for this patient. Speaker 2: To stay in house.	rigidity (secondary)
	1007	Speaker 1: All right. Thank you. Are there any guidelines or standards of care used in your hospital when assessing people who inject drugs for valve replacements? Just in your hospital. Speaker 2: There's no um, like written form that we work our way through. We can just	protocol, rigidity (secondary)

		assess every patient. And discuss every patient.	
	1008	Interviewer: Okay. And then are there any like professional society guidelines for providing -- for doing the surgery in the population? Respondent: You mean for providing what kind of care during the surgery? Interviewer: Yeah. Respondent: No. There's recommendations for -- treatment of endocarditis, with the ACC and the HA probably have the best guidelines. The American Association of Thoracic Surgery has their own guidelines but they're basically the same. I don't think they're as high a quality as the ACC HA. But, yeah, they're all basically the same. Interviewer: Okay. Cool. Respondent: But there's no guidelines on specifically how we treat patients with drug abuse.	rigidity (secondary)
	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly.	rigidity (secondary), blame (secondary)

		Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	
	1008	Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time. Interviewer: Okay. And, so, would it impact you, and you've sort of spoken to this. But like, so, if endocarditis related to drug use, that impacts your decision to operate? Respondent: The second time around? Absolutely. Yes.	blame (secondary), redemption (secondary), rigidity (secondary)
	1008	nterviewer: So, what if in like a case where someone who used to use drugs, you know, 10 years ago, got prosthetic valve endocarditis after a dental procedure or something? Respondent: We would treat them with antibiotics. Interviewer: Okay. Respondent: And if that -- if we can't cure them with that. Late endocarditis, about 50 percent of the time, you can treat just with antibiotics. But if they -- if we can't, if they have an abscess, we would operate.	rigidity (secondary)

	1008	Interviewer: Okay. Cool. And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	disassociation (secondary), rigidity (secondary)
	1008	Interviewer: Yeah. What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	rigidity (secondary), responsibility (secondary), prioritization (secondary)
	1008	Interviewer: Okay. So, in a case where like if the patient was definitely going to die without the surgery, like 100 percent mortality and had maybe 50 percent operative mortality? Respondent: Wouldn't matter. I would follow the same algorithm that I had before. If they came in shooting up drugs, they're not getting another operation. Interviewer: Okay. Wait. What about for folks who weren't injecting drugs, like -- Respondent: In the past? That had quit? Interviewer: Yeah. Respondent: Yeah, we would operate.	redemption (secondary), rigidity (secondary)
	1008	Interviewer: Yeah. What about your sense -- like your sense of your approach compared to like other people in the US? Respondent: I think it's -- ours is pretty much	tx compared to broader, reinfection, multiple surgeries, rigidity (secondary), responsibility (secondary)

		in the middle. A lot of people do what we do. Where everybody gets -- the first valve. But if they re-infect it, a lot of places do not operate. There's other places that they can get five valves. There aren't too many of those. But there are some people that do that.	
	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	rigidity (secondary), disassociation (secondary)
	1008	Interviewer: Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school. Interviewer: So, who like -- I don't know. Who would need to make changes then? Everyone? Respondent: Everybody.	blame (secondary), rigidity (secondary), disassociation (secondary)

		Interviewer: Yeah. Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	
	1008	Respondent: That we assume that they're going to quit taking drugs after the surgery, and that's a big assumption. Interviewer: Yeah. Respondent: And if they re-infect while actively taking drugs, they don't get another procedure. That's pretty much the guidelines. Otherwise, they're treated just like everybody else.	rigidity (secondary), paternalism (secondary)
	1013	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes, to the extent that again that it has to do with source control. So, for example if Katie got sober and we were convinced that she had gotten sober for a while and then fell off the wagon and got reinfected is a very different scenario from she had her valve replaced but then continued to use for a year and it just took that long for the valve to get reinfected. And I am more, without being rigid one way or the other, I am more reluctant to re-operate if she has never demonstrated any capacity for sobriety because I just feel like it is futile therapy.	redemption (secondary), rigidity (secondary)

	1013	So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	collaboration (secondary), rationalization (secondary), rigidity (secondary)
	1013	Are there any guidelines or standards of care used at your hospital when assessing these patients? Not any that are formalized but I think that we are developing an approach.	rigidity (secondary)
	1013	I don't think we will ever have guidelines for these really difficult ethical ones but I can imagine developing an approach where for example with right sided disease there is more uniform agreement to not operate unless you absolutely have to because once you put in a valve then you are really stuck. Because if that prosthesis gets infected you don't have another option, you've got to take it out.	rigidity (secondary)
	1001	No, not to my knowledge. No, I don't think in the Cardiac Surgery Society there would be a guideline regarding how to take care of a patient with active HIV and hep C – for example, the infection – or patients with a history of a drug use. I don't think there is such a guideline for us to follow. If you notice anything, I [would like to read, easily]. [Overlapping noise] if there's such a guideline.	rigidity (secondary)
	1001	Interviewer: All right, and what do you think about the term 'drug rehab?' Respondent: I don't know the detail. I heard about the name. To me it is very difficult. I think theoretically there will be successful stories, but I see it clinically it happened a lot. People tended to relapse back into the drug use [in getting the effects again and again]. I think it's hard for people, and I think they all deserve to be placed in drug rehab, if possible, to have kind of their program that we help	collaboration (secondary), rigidity (secondary)

		them get over the drug addiction, if possible. I personally think it should be mandatory for them to join this program, but I don't think it's going to be the case – but I would recommend that every patient who has been on drugs to be evaluated by the specialist. If they request those patients to go to rehab, I would support it.	
	1001	Respondent: I would say start it right away, because they should be evaluated even in preop. Then they can be carefully monitored. You know, theoretically I would want those patients to be closely monitored for the first few months after surgery, and that way there's no chance for them to get back into the drug use – because the risk for reinfection within the first few months is very, very high.	rigidity (secondary)
	1001	To be honest, it's not exactly the same, but I understand. The mechanism is similar. I never use that example, liver transplant and relapse in alcohol use, as an example to my patients, but I think they are similar. To my knowledge, if a patient has no sign of quitting alcohol, the liver transplant will be contraindicated. That's based on my knowledge in my past in my training. But I think even though we have never made it clear in our practice to an endocarditis patient who has no plan of quitting the drug use – but I think eventually there will be an overall consensus, you know?	redemption (secondary), rigidity (secondary)
	1001	Given the circumstances now, endocarditis is just pandemic, affecting the financial conditions and socioeconomics. It's difficult. I think that society cannot afford having this patient again and again, multiple times – and whether [unintelligible 00:24:55]. To me, even though we would [choose to save people's lives], there are certain limits to something we can do. But again, that requires a discussion between the healthcare professionals, not just the surgeons. It should be based on the studies or a recommendation from the society and/or the medical society, not just the surgical society.	responsibility (secondary), rigidity (secondary)
	1001	I think the approach to the patient should be individualized. It all depends on if a patient only has truly [been back at] the drug use. If there is clear evidence, a witness, or is documented, then it becomes a question. Certainly in order to make it – before I make a decision, those patients should be seen by a psychiatrist to make sure the patient is compliant and also can make a decision, but it	redemption (secondary), rigidity (secondary), blame (secondary)

		will be very difficult to pursue the surgery. It's going to be a difficult decision at this point.	
	1001	I'd prefer the patient stayed in the hospital, if possible, but I just don't think if that would actually happen because of the financial issue. I still believe overall the hospital is the safest place for those patients – being medically managed and closely monitored. I personally don't think a patient with a recent history of active drug use should go home with a PICC line. I think it's prohibited. That's just a perfect setup for drug use again at home.	rigidity (secondary), rationalization (secondary)
	1001	I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	responsibility (secondary), rigidity (secondary)
	1001	I hope there would be a guidelines. You know, how many times do we do surgery? If they go back to drug use, should we withhold the surgical intervention? Or what would be the process? You know, the medicine is becoming both standardized or individualized. So I think for an endocarditis patient, it should be the future. On one side, we should clearly have guidelines from different perspectives. On the other side, we have to mainly treat an endocarditis patient individually, based on their own needs.	rigidity (secondary), responsibility (secondary), rationalization (secondary)
	1001	Yeah, I'm more interested in the protocols, the guidelines. I personally [ran] the guidelines for my own program. I think this is the way to make sure everybody is on the same page to avoid future conflicts if we have something to follow.	rigidity (secondary)
	1010	Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an	rigidity (secondary)

		issue of source control and less of punitive behavior.	
	1010	Tell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	collaboration (secondary), disassociation (secondary), rigidity (secondary)
	1001	So I think if there is a high likelihood the patient would be back on the drug use, and given the current situation's mortality – and even though there is no contraindication for surgical intervention, there will be a discussion to prevent such a mishap in the future.	discussing addiction, rigidity (secondary)
	1001	Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, discussing addiction, knowledge, risk evaluation, rigidity (secondary)
	1001	To be honest, it's not exactly the same, but I understand. The mechanism is similar. I never use that example, liver transplant and relapse in alcohol use, as an example to my patients, but I think they are similar. To my knowledge, if a patient has no sign of quitting alcohol, the liver transplant will be contraindicated. That's based on my knowledge in my past in my training. But I think even though we have never made it clear in our practice to an endocarditis patient who has no plan of quitting the drug use – but I think eventually there will be an overall consensus, you know?	rigidity (secondary)

	1001	I'd prefer the patient stayed in the hospital, if possible, but I just don't think if that would actually happen because of the financial issue. I still believe overall the hospital is the safest place for those patients – being medically managed and closely monitored. I personally don't think a patient with a recent history of active drug use should go home with a PICC line. I think it's prohibited. That's just a perfect setup for drug use again at home.	rigidity (secondary)
	1001	It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to broader, tx compared to colleagues, second chance, rigidity (secondary)
	1001	I hope there would be a guidelines. You know, how many times do we do surgery? If they go back to drug use, should we withhold the surgical intervention? Or what would be the process? You know, the medicine is becoming both standardized or individualized. So I think for an endocarditis patient, it should be the future. On one side, we should clearly have guidelines from different perspectives. On the other side, we have to mainly treat an endocarditis patient individually, based on their own needs.	rigidity (secondary)
	1001	Yeah, I'm more interested in the protocols, the guidelines. I personally [ran] the guidelines for my own program. I think this is the way to make sure everybody is on the same page to avoid future conflicts if we have something to follow.	rigidity (secondary)
risk evaluation			
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness

		precious donor organ in somebody that hasn't proven their ability to stay off of the substance that caused the problem in the first place.	
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1006	Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	deservingness, protocol, risk evaluation
	1006	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis than a 55-year-old? Interviewee: Not really, unless they have—the 55-year-old has stopped and started, stopped and started. Interviewer: Does age impact your decision to operate on a prosthetic valve infection? Interviewee: Well if they're really old, yeah, but other than that, no. Interviewer: Okay. What about type of valve? Interviewee: No.	risk evaluation
	1006	Interviewer: Okay. Would your approach change if you learned that when Katie presented with the prosthetic valve endocarditis she was pregnant? Interviewee: Oh, would it have any effect on that? Interviewer: Yeah, would it change your approach to the patient if she was pregnant? Interviewee: Well may lose the child if you do	pregnancy, risk evaluation

		the operation, cardiopulmonary bypass, but if she presented in cardiogenic shock, I don't see that there's any alternative.	
	1006	Interviewer: What about if she injected cocaine but did not inject heroin? Interviewee: I'd treat 'em about the same, heroin has more addiction potentially, but it's not the only thing that goes into the equation. Interviewer: What if it was five years since she last used drugs? Interviewee: Well you feel if it's a prosthetic valve infection, a little more inclined to give her a second chance. Interviewer: Okay. How does different types of drug use influence your decision to operate for endocarditis? Interviewee: Define different kinds of drug use, it's all IV? Interviewer: I think they mean IV, different things that can be injected, or even including pills, does that play any role? Interviewee: Well it's the only people that can get endocarditis are the ones that inject. In terms of the different types of drugs, it doesn't really play that much of a role. I'm not sure that people really know what they're injecting anyway, just taking your dealer's word for it.	deservingness, risk evaluation
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives

	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID

		two opinions, they respect the opinion and they'll go along with it.	
	1010	ow did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later.	protocol, priorities, training, risk evaluation, save lives
	1010	ell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, pain management, collaboration with addiction medicine, accountability, liability of medical professionals, deservingness, follow-up care, protocol, risk evaluation
	1010	I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one	liver vs heart, deservingness, stigma , reinfection, lack of resources, risk evaluation

		because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	
	1010	And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of their endocarditis that its really not indicated to operate on someone like them.	relapse, multiple surgeries, futility, risk evaluation, pre-operation care, deservingness
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	pregnancy, multidisciplinary group, risk evaluation, stigma , frustration, deservingness

	1010	Tell me about the operative risks of reoperation verses the original operation. Much higher. Uh, much more complicated an operation. Usually the problem with the reoperation for endocarditis, for example if you do a bypass on someone and then you have to do an aortic valve there is adhesions, there's open grafts, but where you are going to put the valve that is virgin territory. With endocarditis there is, you are operating in the same area, you are using second or third tier real estate because you used the first tier real estate the first time, and there is destruction from the process because usually these are Staph infections so there is destruction of the annulus, the mitral and aortic, so these operations are much much harder. A standard reoperation where you put a valve in and 15 years and the valve went bad, or even better someone had a mitral and now needs an aortic, much much harder.	multiple surgeries, risk evaluation
	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things.	timing of SUD tx, lack of knowledge, risk evaluation, perception of risk in PWID, follow-up care, post-operation care

	1019	Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	pain management, support for patient, risk evaluation, protocol, post-operation care, empathy, lack of knowledge
	1019	Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. OK. Tell me your thoughts about management decisions regarding these cases. If a patient… Uh, if a patient is a candidate for surgery and the operation is feasible, operate. Okay Period. Okay Point blank.	second chance, risk evaluation, priorities, multiple surgeries

	1019	You know. Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	PICC line risk, support for patient, risk evaluation, SES, cost, insurance
	1019	And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient. The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	risk evaluation, tx compared to colleagues, priorities, save lives, second chance
	1019	OK. Tell me your thoughts about management decisions regarding these cases. If a patient… Uh, if a patient is a candidate for surgery and the operation is feasible, operate. Okay Period. Okay Point blank. Does it… so it does not, does No. …it impact your decision to operate if the endocarditis is related to drug use No. Ok. Again, that's not my job. My job is to take care of patients with heart problems.	multiple surgeries, second chances, risk evaluation, deservingness, save lives

	1019	The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	tx compared to colleagues, risk evaluation, second chances, priorities, save lives
	1019	Um, tell me about the oper-risks of the reoperation versus the original operation. You know, redo sternotomy. So, uh, that always imparts some risks… risks of getting into the heart and so forth. Um, xplanting the heart-…explanting the valve. This is for prosthetic valve endocarditis, right? So explanting the valve [COUGHING] usually what happens is when you take… So, by the time you get to these patients, uh, the heart's partially dehisced from the infection and the infection is grown into the annulus. And, so, when you take the… when you take the valve out, a variable portion of the annulus is destroyed and maybe even some of the myocardium. And, so, uh, it's usually, uh, not feasible just to do a re-replacement, you've got to do more. Whether it be carefully debride the whole area, patch the defects and then do a replacement on top of it… Or just proceed with a homograft root… They're difficult operations. The visibility's often bad. You know, they're challenging. They're challenging for sure.	risk evaluation, multiple surgeries

	1008	what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	risk evaluation, deservingness, multiple surgeries, post-operation care, relapse, reinfection, commitment to recovery, follow-up care, frustration, futility
	1008	nterviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay.	priorities, risk evaluation, pre-operation care, save lives, time constraints, patient story

		Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	
	1008	What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay.	commitment to recovery, multiple surgeries, risk evaluation, stigma , frustration, futility, paternalism

		Respondent: Especially if we find them shooting up in the hospital.	
	1008	Can you tell me a little bit about the operative risks of re-operation versus the original operation? Respondent: Yeah, it's a riskier operation. Interviewer: Yeah. Why? Respondent: Because it's all scarred in. You got to take the old valve out, putting a new valve in. There's increased risk of re-infection. Those are the reasons.	risk evaluation, multiple surgeries, reinfection
	1019	OK. Tell me your thoughts about management decisions regarding these cases. If a patient… Uh, if a patient is a candidate for surgery and the operation is feasible, operate. Okay Period. Okay Point blank. Does it… so it does not, does No. …it impact your decision to operate if the endocarditis is related to drug use No. Ok. Again, that's not my job. My job is to take care of patients with heart problems.	multiple surgeries, second chances, risk evaluation, deservingness, save lives

	1019	The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	tx compared to colleagues, risk evaluation, second chances, priorities, save lives
	1019	Um, tell me about the oper-risks of the reoperation versus the original operation. You know, redo sternotomy. So, uh, that always imparts some risks… risks of getting into the heart and so forth. Um, xplanting the heart-…explanting the valve. This is for prosthetic valve endocarditis, right? So explanting the valve [COUGHING] usually what happens is when you take… So, by the time you get to these patients, uh, the heart's partially dehisced from the infection and the infection is grown into the annulus. And, so, when you take the… when you take the valve out, a variable portion of the annulus is destroyed and maybe even some of the myocardium. And, so, uh, it's usually, uh, not feasible just to do a re-replacement, you've got to do more. Whether it be carefully debride the whole area, patch the defects and then do a replacement on top of it… Or just proceed with a homograft root… They're difficult operations. The visibility's often bad. You know, they're challenging. They're challenging for sure.	risk evaluation, multiple surgeries
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that	priorities, mechanical problem, risk evaluation, left vs right side

		that is the best substitute valve particularly in this population.	
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, risk evaluation, societal issue
	1018	Do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? No. Does age impact your decision at all to operate? Yes in the extremes. You know a 90-year-old with terrible ventricular function, coronary disease, stroke, no I wouldn't but it's not really because of the cause of the endocarditis, it's just an assessment of all risk factors.	risk evaluation, age
	1018	Tell me about the operative risks of reoperation verses the original operation. Well in general they are low. Unless you are up around the 4th or 5th sternotomy, 1st, 2nd 3rd are very comparable, it's really not worth talking about. So, it's a consideration but it's not a major one.	multiple surgeries, risk evaluation
	1016	I: Have you ever discussed drug use with a patient like this? You kind of mentioned that, yeah. You have. If so, what questions do you ask when talking about that? S: I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting substance abuse help. Um, and so I'm very up front with that in addition to the risks. This particular case, I'm not sure you will get to this in the interview, is in the aortic valve position. I think that, um, we look at things a little bit different if it is on the left or the right side of the heart, in terms of when we go to surgery and how aggressive we are. I: Have you ever heard the term opioid use disorder or used it when talking with patients?	discussing addiction, deservingness, risk evaluation, left vs right side

		S: Um, I've seen it documented in the chart, I don't, I've never specifically used that terminology.	
	1016	I: Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	reinfection, commitment to recovery, liability of medical professionals, risk evaluation, multiple surgeries
	1016	I: Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Um, that's a really hard question. Um, I think that when you see patients like that, you, you definitely have to have a multidisciplinary approach, and, um, you know, surgery depending on the trimester, um, can be, um, um, contraindicated, um, but, you know, IV drugs in pregnancy is, is never a good thing. Um, and so, I think there has to be really a team, a team approach on that, about what to do with the pregnancy, um, is, should the	multidisciplinary group, pregnancy, risk evaluation

		pregnancy be terminated, and should she have an open-heart surgery, and kind of what are the…it's, it's a very complex issue.	
	1016	I: Tell me about the operative risks of reoperation vs. the original operation. S: Um, so the operative risks are, um, this is presuming you're doing a sternotomy for the first operation, um, the second operation there's a lot more scar tissue, the reentry is more dangerous because you can saw into the heart, the heart can be stuck to weird things so you're a lot more likely to injure the lungs, the heart, the vessels, the coronaries, um, and, um, the operation is much longer, uh, there's more bleeding, uh, so, um, hemostasis, uh, can be an issue afterwards. The need for blood transfusions. I will say, getting outside of the box a little bit, depending on which side of the heart, if you're doing the right side, some of the surgeons are employing more minimally invasive techniques. Um, and in some sense, doing kind of a mini and sternotomy or vice versa, sternotomy and then a mini, depending on which valve is involved, doesn't always work, but, um, is, um, can reduce the risk or alter the risk to some degree. Um, there's a, kind of, um, I don't want to say, ethical argument, but, um, to some degree, it doesn't, some people take up issue with doing a mini procedure, um, on somebody that's done this to themselves, and giving them a very cosmetic incision and, um, treating it like it's not a big deal, that it's really easy for us to just go in through these really small incisions and fix this, and not relaying the, the, um, you know, the point that this is really serious. Um, sometimes, a mini approach can leave the patients feeling like it's not as big of a deal as a full sternotomy.	risk evaluation, multiple surgeries, mechanical problem, left vs right side
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give	save lives, commitment to recovery, risk evaluation, deservingness, liability of medical professionals

		them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	
	1003	The operation's more difficult, because you have scar tissue on the heart, and then the scar tissue on the valve.	risk evaluation
	1006	Interviewer: What are your first throughs you consider when you're asked to evaluate a person who injects drugs for a valve replacement? Interviewee: I'm sorry, what was the first thing I think about? Interviewer: Sure. What are the first thoughts you consider? Interviewee: Oh, need for immediate surgery versus ability to complete a course of antibiotics and psychosocial rehabilitation	priorities, pre-operation care, risk evaluation
	1006	nterviewer: Okay. Would your approach change if you learned that when Katie presented with the prosthetic valve endocarditis she was pregnant? Interviewee: Oh, would it have any effect on that? Interviewer: Yeah, would it change your approach to the patient if she was pregnant? Interviewee: Well may lose the child if you do the operation, cardiopulmonary bypass, but if she presented in cardiogenic shock, I don't see that there's any alternative.	pregnancy, save lives, priorities, risk evaluation
	1006	Interviewer: What about if she injected cocaine but did not inject heroin? Interviewee: I'd treat 'em about the same, heroin has more addiction potentially, but it's not the only thing that goes into the equation	risk evaluation, deservingness

	1006	Interviewer: Okay. How does different types of drug use influence your decision to operate for endocarditis? Interviewee: Define different kinds of drug use, it's all IV? Interviewer: I think they mean IV, different things that can be injected, or even including pills, does that play any role? Interviewee: Well it's the only people that can get endocarditis are the ones that inject. In terms of the different types of drugs, it doesn't really play that much of a role. I'm not sure that people really know what they're injecting anyway, just taking your dealer's word for it.	risk evaluation, stigma
	1002	Interviewer: Yeah, so someone comes in who injects drugs, and you're going to evaluate them for a valve surgery. What comes to mind? Respondent: Does he need the valve operation or not – the indication for the surgery.	risk evaluation, pre-operation care
	1002	Interviewer: Do people who inject drugs have different operative and postoperative mortality and complications? Respondent: I think so. Interviewer: Does it impact what type of valve you would use? Does that impact the complications or mortality? Respondent: For [IE], you mean? Interviewer: Yes. Respondent: I don't think so, no.	risk evaluation, valve preference, post-operation care
	1002	Respondent: How would I approach? So, preoperative evaluation – you know, how serious the cardiogenic shock is, actually. You know, if the patient is in severe shock, it just depends on if it's hemodynamic shock, or even more hemodynamic and also metabolic shock, which means if the liver is dead and the kidneys are dead, then why do we need to do the surgery? So that's one thing we need to make sure, the surgical indication about the shock.	risk evaluation, pre-operation care, priorities, seriousness
	1002	Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the	risk evaluation, priorities, patient consent, futility, liability of medical professionals, seriousness

		[unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result.	
	1002	Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the surgery? So yeah, those are the first things we come up with.	support for patient, risk evaluation, priorities, futility, patient story
	1002	Interviewer: What if it was five years since the last time she used drugs? [Outside interruption] Can you tell me about the operative risk or reoperation versus the original operation? Respondent: It totally depends on case by case, but yeah, in a case like that I think that's much, much easier.	deservingness, commitment to recovery, risk evaluation
	1004	R: Tell me about the operative risks of re-operation versus the original operation? I: It doubles the risk, the surgery is much harder	risk evaluation, rationalization (secondary)
	1015	atient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Uh, yeah.	risk evaluation, prioritization (secondary)
	1007	Tell me your thoughts about management decisions for these relapse cases. Speaker 2: Well, I mean we manage them the same as any other patient. You um, you know, assessing the risk, the benefit, surgery, support system. Speaker 1: Okay. So does it impact your decision to operate if the endocarditis is related to drug use? Speaker 2: Yeah, everything impacts our decision to operate.	multiple surgeries, risk evaluation, reinfection, defensive
	1007	Um, do you look at the 25 year old with prosthetic valve endocarditis, different from the 55 year old? Speaker 2: Of course. We look at everybody different. Speaker 1: Yeah. So it, it seems like age impacts your decision to operate Speaker 2: Everything impacts. Any question	age, risk evaluation, defensive

		that says that asks us to evaluate. We evaluate it. I look at a 23 year old, different than a 24 year old. Speaker 1: Yeah. Speaker 2: Everything goes into the evaluation.	
	1007	Can you please tell me about the operative risk for reoperation versus your original operation? Speaker 2: Um, re operation is always, um, from a technical standpoint is always considered much harder. Um, and then there's all the other factors that need to be considered.	multiple surgeries, risk evaluation
	1017	S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	priorities, left vs right side, medical model, risk evaluation
	1017	S: Um, first was to see how well we could stabilize her medically, and it turned out there were things we could do, so stabilize medically, prolong antibiotics, and that actually was very successful to allow us to have a, um, you know, less risk surgery.	risk evaluation, pre-operation care, medical model
	1017	I: Tell me about the operative risks of reoperation vs. the original operation. S: Uh, they are generally double. It depends on how experienced the center is, what the original operation is	risk evaluation, tx compared to colleagues
	1017	If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, is it worth taking the patient to the OR? (Repeated) S: No. I: Ok. And why not? S: Well, because it is not about that risk. It is about, um, you know, their long-term risk.	risk evaluation, post-operation care, liability of medical professionals
	1013	Tell me about the operative risks of reoperation verses the original operation. So, um, in general terms, the operative risk of redo valve replacement the first time around is not hugely different from the operative risk from the first operation except in this scenario where you are talking about prosthetic valve endocarditis. So, if you are talking about a redo aortic valve replacement for structural valve deterioration of the valve, the valve just wore out, the operative risk is not too different between the first operation and the second operation; it's a little higher with the second operation. If you are talking about for infection though and prosthetic endocarditis the operative risk if 10-fold higher. So, its much	knowledge, second chance, multiple surgeries, risk evaluation, reinfection

		higher risk and that is because of the complexity of getting out the old prosthesis, getting rid of all the infection and putting in, doing the reconstruction that is required to get the new valve in.	
	1003	Respondent: Based on their clinical presentation, the presence of fevers, the presence of [bacteremia]; and we look at the echo images of a particular valve that's infected, to determine how badly infected the valve is, whether or not medical therapy will be sufficient or, on the other extreme, the valve is so destroyed, the patient [that's] [unintelligible 0:00:53] compromised from the valve destruction that surgery clearly is indicated. Other times, it's not so clear, it's not a black and white issue. In some cases, we're – requires clinical judgement as to whether or not surgery is indeed indicated. And then the timing is also an important issue. We need to move ahead soon, or can we afford to wait a period of time to feed them antibiotics and see how they respond.	risk evaluation, mechanical problem, seriousness, time constraints
	1003	So, a lot of clinical judgment goes into assessing these patients, and I rely on objective data based on the laboratory values; the presence perhaps of some fevers. But also, some of my previous experience managing these patients; I rely on my own personal experiences and knowing what seems to work and what doesn't work.	data, knowledge, risk evaluation, training
	1003	what we have shown is that across the board, since most patients who inject drugs are younger and consequently don't have other health issues, tend to do fairly well after their surgeries, provided we don't get to them when they're too sick. When compared to the general population, [our] patients tend to be older and have other co-morbid problems that complicate their – [either the operation that pulls up the core]. So, we, like other people, have shown the [upper] mortality is actually – it's never zero, but it's in the neighborhood of five and ten – five percent. So, as in contrast to other patients with endocarditis, it's probably in the neighborhood of 10 percent mortality. So, these patients tend to do better in the short term; however, as Dr. Wurcel and her colleagues have shown, that the mid- and long-term results are sobering in that a lot of these patients go back	relapse, risk evaluation, data, reinfection, age, follow-up care, post-operation care

		to using drugs and succumb to overdose and more complications. So, the – it's been clearly shown that the long-term outcomes are worse in this patient population.	
	1003	However, if someone is critically ill, and time is of the essence, then we will move ahead and do surgery regardless of whether or not I think they're going to be able to be successfully treated from the addiction standpoint. On the other hand, if a patient is not critically sick, and they're having a medical indication for surgery, however if they're not in a program, where I think they're going to be successful in avoiding use of drugs again, I may postpone surgery until they get into a rehab program. So, once we do the surgery, I know they'll be on the road to recovery. But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	relapse, risk evaluation, timing of SUD tx, commitment to recovery, paternalism, protocol
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy
	1003	Interviewer: Okay. What about if she was injecting cocaine, but not injecting heroin? Respondent: It doesn't really [impend] my decision making.	risk evaluation

	1003	Okay. Totally. Or – I think you said this. I think you've spoken to this, but like if it had been five years since she had last used drugs, and she showed up with endocarditis - Respondent: And she's using drugs again? If she - Interviewer: No, I think in this example, we're assuming that she's like on methadone, and stable on it. Respondent: Well, she needs an op – if she needs an operation, we'll certainly do it.	time between operations, deservingness, risk evaluation
	1003	Interviewer: What if it was a different kind of valve? Not - like not a prosthetic valve, but I don't know [unintelligible 0:29:20] the other kind of it. Respondent: A native valve? Interviewer: Yeah. Respondent: Another – oh. Well, that's unusual. Most of the time, someone comes back with a second valve operation, the existing valve they have is going to be infected. But in the rare circumstance not the case, we would offer them surgery, certainly. And again, operation does [unintelligible] more risk, because there is scar tissue on the heart and so forth. Interviewer: Mm-hmm. Or, what if it was like a mechanical valve that had been used the first time? Respondent: Yeah. We've seen that. Well, we'd take it out and put another valve in; probably another mechanical, unless they've shown that they can't tolerate Coumadin. But we'll put a mechanical in and if they can – they do tolerate Coumadin, yeah.	valve preference, multiple surgeries, follow-up care, risk evaluation

	1003	Interviewer: If the patient has 100 percent mortality without surgery, and like a 50 percent [operative] mortality, like would you say it's worth taking the patient to the operating room? Respondent: If they're young? Interviewer: Yeah. Respondent: Yes. Yes. Don't ask what I consider young, but - Interviewer: [Laughter] Respondent: It changes as - we all get older, so - Interviewer: Yeah, yeah. Respondent: - the threshold goes down. But anyhow, yeah, if they're young, I'll – yeah. [If it's the only chance] they have, sure.	risk evaluation, age, save lives
	1003	Respondent: Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive.	desired changes, risk evaluation, save lives, pre-operation care, time constraints, frustration, seriousness
	1003	So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively	support for patient, support for surgeons, tx compared to colleagues, multidisciplinary group, risk evaluation, time constraints

		with antibiotics for a few weeks. In the meantime, the patient deteriorates.	
	1009	Interviewer: What are some of the first things that you think about when you're asked to evaluate someone who injects drugs for a valve replacement? Surgeon: What is the microorganism, what valve is infected? Is it on the right side of the heart? The left side of the heart? Do they have heart failure? Have they had thromboembolic complications?	protocol, medical model, pre-operation care, risk evaluation
	1009	Interviewer: Mortality, is that something, or does it impact what type of valve you might give them? Surgeon: Mortality from the sense of the operation? Interviewer: Mm-hmm. Surgeon: It's something you think about. You always want to offer and operation where you think there's a mortality benefit, that they have a better chance of living with the operation than without. Sometimes, you know, questions of futility come into play but that comes into play later rather than the initial evaluation. Interviewer: Can you say more about the futility piece? Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if you fix the heart, they're never going to return to a quality of life. Other times there are complications that have arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	futility, post-operation care, priorities, risk evaluation

	1009	Interviewer: So now I'm going to introduce a clinical vignette so in this case, Katy, is a 35-year-old woman who uses heroin via injection. She has staph aureus, [spectoremia] and aortic valve endocarditis. She's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So have you had personal experience caring for a patient in a similar situation? How did you approach that case? How would you approach this kind of case? Surgeon: Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in cardiogenic shock with severe heart failure and a root abscess, they need an operation.	risk evaluation, protocol, save lives, second chance
	1009	Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	multidisciplinary group, collaboration with addiction medicine, protocol, risk evaluation
	1009	Interviewer: You've talked about this a little bit but like what – does it impact your decision if the endocarditis is related to drug use? How do you feel about operating on someone who used to use drugs, you know, 10 years ago and then gets prosthetic valve endocarditis from a dental procedure or something? Surgeon: I would operate on them.	risk evaluation
	1009	Interviewer: What about age? Would you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? Surgeon: No.	age, risk evaluation

	1009	Interviewer: I think you've spoken about it this. But if she had been injecting cocaine but not heroin. Surgeon: Doesn't matter what they're injecting. Interviewer: And then in this case if it had been like five years since she had last used drugs, and she got it, again, from a dental procedure? You have talked about that. Surgeon: Yes.	deservingness, risk evaluation
	1009	Interviewer: Can you tell me a little bit about the operative risks of re-operation versus the original operation? Surgeon: So the operative risk is higher the second time around because a lot of scar tissue forms in the mediastinum and so the risk of sternal reentry in terms of injuring the right ventricle or any other structures when you're trying to dissect them free are higher for any redo operation. Depending on what you did the first time, sometimes if you've done a complete aortic root replacement with a homograft, that redo operation is fraught with extraordinary risk. It's very, very hard. These things get calcified. It's very hard to get them out. And the risk of the redo can vary widely but it's a lot harder than the first time around.	risk evaluation
	1009	If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	protocol, deservingness, futility, reinfection, relapse, risk evaluation
	1011	And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little anticoagulation and the valve becomes thrombosed, that's a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure themselves then that has a problem as well. So	risk evaluation, multiple surgeries, medical model, protocol, deservingness, paternalism, valve preference

		what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	
	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have small kids and they're taking care of them or someone else is taking care of them- the whole family, partner situation is not always the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	risk evaluation, support for patient, insurance
	1011	Tell me about the operative risks of reoperation verses the original operation. There is data about that, there is data out there to compare risks of first operation verses redo operation and it is a little bit heterogenous data but I think most of us would feel that there is some extra technical complexity to a redo operation without the endocarditis but you could get nearly equivalent outcomes in the second operation as you were the first operation. In the setting of endocarditis there is clear data to show, multiple papers, that if you have to do an operation for endocarditis mortality goes up for the first operation, so first operation with and without endocarditis and second operation with and without endocarditis every time endocarditis and infection make the mortality go higher.	data, save lives, risk evaluation
	1017	I: Alright. What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	risk evaluation, priorities, left vs right side
	1017	I: How did you approach that case? S: Um, first was to see how well we could stabilize her medically, and it turned out there were things we could do, so stabilize	pre-operation care, risk evaluation, medical model

		medically, prolong antibiotics, and that actually was very successful to allow us to have a, um, you know, less risk surgery.	
	1017	I: Tell me about the operative risks of reoperation vs. the original operation. S: Uh, they are generally double. It depends on how experienced the center is, what the original operation is.	risk evaluation, tx compared to colleagues
	1017	I: If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, is it worth taking the patient to the OR? (Repeated) S: No. I: Ok. And why not? S: Well, because it is not about that risk. It is about, um, you know, their long-term risk.	risk evaluation, post-operation care, liability of medical professionals
	1013	Tell me about the operative risks of reoperation verses the original operation. So, um, in general terms, the operative risk of redo valve replacement the first time around is not hugely different from the operative risk from the first operation except in this scenario where you are talking about prosthetic valve endocarditis. So, if you are talking about a redo aortic valve replacement for structural valve deterioration of the valve, the valve just wore out, the operative risk is not too different between the first operation and the second operation; it's a little higher with the second operation. If you are talking about for infection though and prosthetic endocarditis the operative risk if 10-fold higher. So, its much higher risk and that is because of the complexity of getting out the old prosthesis, getting rid of all the infection and putting in, doing the reconstruction that is required to get the new valve in.	multiple surgeries, risk evaluation, reinfection, knowledge, second chance
	1013	So, that's the way it usually gets presented to you by the medical student on the medicine service and I don't think about it that way. The way I think about it is the question of do I think that an operation is in the patient's best interest or not. So, lets imagine that the patient has, is an IV drug user, they've got prosthetic endocarditis, they've continually been using intravenous drugs, even in the hospital, and we see that, too right? Um, and then you presented that person to me and you say ok they have prosthetic valve endocarditis, its staph endocarditis, they've got an annular abscess they've got a mortality rate of 100% if you don't operate and they have been using drugs while they have been in the hospital, I don't think an operation is in their best interest. Could we potentially get then through the operation from a technical standpoint, yes,	deservingness, liability of medical professionals, futility, risk evaluation

		but do I think that we have a likelihood of restoring them to health, I would say no because their underlying condition is so severe. So, I think it is very seldom as simple a question as 100% without and 50% with. Have I adequately pivoted? And avoided answering that question? That's the way I think about it.	
	1015	I: Gotcha. Tell me about the operative risks of reoperation vs. the original operation. S: Um…bleeding, uh, damage to underlying, you know, intrapericardial structures. Uh, respiratory failure, I mean everything that you would say for an initial operation is higher.	risk evaluation, multiple surgeries
	1015	So, this is kind of a theoretical. If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Uh, yeah.	risk evaluation
	1007	Speaker 1: Do they have different operative and post-operative mortality complications compared to other patients? Speaker 2: Yes. Speaker 1: Okay… Um, can you please tell me my about that? Speaker 2: So, I mean, every patient is individual, but there are trends. A lot of these patients tend to be younger, so in some ways a healthier, which is what we're trying to assess, is the risk of surgery benefit. On the other hand, some social issues make them higher risk.	risk evaluation, societal issue, follow-up care
	1007	Speaker 1: Okay. Um, does that impact the type of valve you give, so your choice to give mechanical versus bio prosthetic valves? Speaker 2: It does impact it, yes.	risk evaluation

	1007	Speaker 1: All right, thank you. Now I'm going to introduce a clinical vignette and then you would answer questions subsequently. Katie's a thirty four year old woman who uses heroin by injection drug use. She has staphylococcus Aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is there is concern for an aortic roots abscess. So have you had a personal experience caring for patients with a similar situation? Speaker 2: Yes. Speaker 1: And how did you approach this case? Speaker 2: Um, yes and we approach it like, like any other patient. Speaker 1: Okay Speaker 2: Come up with the best plan for, for that patient. Speaker 1: Okay. So if you were to address Katie's issue, how would you approach Katie from the vignette? Speaker 2: Approach it? I mean in which way? I mean we would receive the patient, evaluate the patient. Speaker1: Yeah Speaker 2: Um…If she needed surgery, she was a reasonable candidate, which so far it looks like she has an indication, then we'd do surgery.	deservingness, protocol, risk evaluation
	1007	Speaker 1: Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, follow-up care, patient consent, post-operation care, risk evaluation, societal issue
	1007	Speaker 1: So do you feel comfortable about operating on someone who used to use drugs 10 years ago, then gets a prosthetic valve endocarditis after it dental procedure? So they used to use drugs and then gets um, a	risk evaluation

		prosthetic valve endocarditis after a dental procedure? Speaker 2: Yeah.	
	1007	Speaker 1: Um, any specific things that help you choose like housing, insurance, job status and child do this impacts your decision? Speaker 2: Everything impacts	risk evaluation
	1007	Speaker 1: Okay, would your approach change if you learned that Katie presented with prosthetic valve endocarditis and she was pregnant? Speaker 2: Would I what? Speaker 1: Would your approach change if you learned that Katie presented to the… Sparker 2: Of course. Everything impacts	risk evaluation, pregnancy
	1007	Speaker 1: Um, how about if she injected cocaine but did not inject heroin? Speaker 2: Everything Speaker 1: So it changes. And then if she had used drugs, if the last time she used drugs was five years ago, does that also, Speaker 2: Everything affects the decision. Speaker 1: Okay, so does the time period between endocarditis… Speaker 2: I'm not saying… I don't know if… I don't want to rewrite your questions. Speaker 1: Yeah. Speaker 2: We're not saying we would refuse blindly or, or, or, or operate blindly on any of these situations. I'm just saying that everything affects it. I mean,	risk evaluation
	1007	Speaker 1: All right, thanks. Can you please tell me about the operative risk for reoperation versus your original operation? Speaker 2: Um, re operation is always, um, from a technical standpoint is always considered much harder. Um, and then there's all the other factors that need to be considered.	risk evaluation, multiple surgeries
	1001	Yeah, certainly we [overlapping noise] from mainly the cardiac perspective, but we have a standard protocol that you evaluate a patient that warrants surgery. That includes all the organ functions. On top of that, we typically screen the patient for hep C and HIV. I think that's also what [unintelligible 00:02:14] recommends. It's basically a piece of information that we would want to have before the patients are taken to the OR. Mainly the focus is about the cardiac function, the operating risk, and the prognosis if possible.	protocol, risk evaluation
	1001	On top of that, we typically screen the patient for hep C and HIV. I think that's also what [unintelligible 00:02:14] recommends. It's	screening for ID, protocol, risk evaluation

		basically a piece of information that we would want to have before the patients are taken to the OR.	
	1001	Does the type of valve impact the complications or the risk involved? Respondent: The valve surgery certainly carries the different level of risk. So each value has different technical difficulty or aspect. For example, mitral valve – the surgery would be more challenging than aortic valve surgery. The [redo] surgery will be more difficult than the first-time operation. So I would say everybody is different. Every patient is different. So we will not know the patient's individual risk for surgery until we complete their preop testing and evaluation.	risk evaluation, multiple surgeries, pre-operation care, left vs right side
	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	prevalence of endocarditis, risk evaluation, save lives, medical model
	1001	Respondent: Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, risk evaluation, discussing addiction, patient consent, liability of medical professionals, knowledge, contract
	1001	will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of	commitment to recovery, accountability, discussing addiction, paternalism, reinfection, priorities, risk evaluation

		reinfection will be coming, and that would be even wors	
	1001	about a year later she's back in the hospital and has prosthetic valve endocarditis. Have you seen prosthetic value endocarditis in people who inject drugs? Respondent: Yeah, of course. Interviewer: Is there any specific case that stands out in your mind that you could think of, and could you tell me about it? Respondent: Yeah, I think this patient most likely would require a [homograft] in the beginning, to be honest, where [the abscess is confirmed]. And the reinfection of root abscess – a homograft in the same location – would almost mean 100-percent mortality, to be honest. [Off-mic] So technically very difficult to treat, but certainly everybody is different.	multiple surgeries, risk evaluation, seriousness, follow-up care
	1001	Rehab? I don't know. It all depends. You know, every place is different. We have good experiences and bad experiences with rehab. So I cannot really comment. I know only even though this is not 100 percent, we can manage the patient in the hospital. We can provide the best care they can get, but I just cannot comment on if they can go to rehab. Theoretically they can, if the rehab place is a fair facility.	post-operation care, SUD treatment, risk evaluation, follow-up care, paternalism
	1001	Interviewer: Can you tell me about the operative risk of reoperation versus the original operation? Respondent: Yeah, because every time we've done something in the chest – and it's similar in other territory – there's always scar tissue formation. And going to the chest again to have the area exposed will be much more challenging, potentially given the history of infection. So the risk of injury, interoperative, will be high, and the operative mortality will be at least double, sometimes even higher depending on the complexity of the operation.	multiple surgeries, risk evaluation, perception of risk in PWID, time between operations, follow-up care

	1001	Interviewer: If a patient has 100-percent risk of mortality without surgery but a 50-percent risk of operative mortality with operation, do you think it's worth taking the patient to the OR? Respondent: If it's 100 percent, [then it is now], but it's hard. Sometimes we think patients are inoperable. It doesn't mean that the patient cannot – that the operative mortality will be 100 percent. It's hard. To be honest, if somebody has multiple-organ failure, than the surgery will be contraindicated. They cannot even survive anesthesia. So it's a different story. But a lot of people are [deemed] inoperable, not just based on the operative mortality itself. You know, it's related to other issues. Sometimes we take into consideration even the social issues – you know, the lifestyle or the age, for example. Interviewer: All calculated into the preoperative risk? Respondent: Right, yeah.	risk evaluation, societal issue, futility, pre-operation care, seriousness
	1001	Interviewer: What's your sense about how you approach and treat patients who inject drugs in comparison to your colleagues? Respondent: I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	tx compared to colleagues, lack of resources, protocol, disagreements (professional), risk evaluation, save lives, tx compared to broader
	1001	Respondent: Yeah, I'm more interested in the protocols, the guidelines. I personally [ran] the guidelines for my own program. I think this is the way to make sure everybody is on the same page to avoid future conflicts if we have something to follow.	protocol, risk evaluation
	1004	R: It’s complicated, there’s a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized	commitment to recovery, deservingness, discussing addiction, priorities, support for patient, risk evaluation

		before for her substance use or for her endocarditis?	
	1004	R: Tell me about the operative risks of re-operation versus the original operation? I: It doubles the risk, the surgery is much harder	risk evaluation, multiple surgeries
	1004	R: If the patient has 100 percent mortality without surgery, and like a 50 percent [operative] mortality, like would you say it's worth taking the patient to the operating room? I: That patient sounds inoperable, their mortality is too high, it's too high a risk	risk evaluation, futility, liability of medical professionals
	1005	The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is.	data, pre-operation care, risk evaluation
	1005	I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	pre-operation care, post-operation care, risk evaluation
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1005	Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: That patient would not be an active drug user and would be treated like any non drug user.	deservingness, risk evaluation, stigma
	1005	I think we all tend to be a little bit more liberal with tobacco and marijuana over cocaine, heroin and methamphetamines, but in general it doesn't.	risk evaluation
	1005	Well reoperations always carry more risks. I think there's a higher pacemaker risk with any reoperation. Certainly a higher bleeding risk, stroke risk and length of operation.	risk evaluation
	1005	We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think	risk evaluation, deservingness, futility, stigma

		we necessary think of the mortality with or without in that situation.	
	1008	So, for this particular patient population, like what are some of the first things you consider when you're asked to evaluate someone who injects drugs for a valve replacement? Respondent: It doesn't really affect my decision on what to do. You know, if they have ongoing sepsis or heart failure or, you know, severe valvular dysfunction, we treat them pretty much the same as everybody else. However, we keep a very close eye on them because a lot of these people inject drugs two days or three days after their operation. We catch them with syringes in their bed and their friends bring drugs in. That's the main difference. You know, they all get at least six weeks of antibiotics. And then the post-operative care and maintenance, it's a lot trickier, too. Interviewer: Yeah. Respondent: Because a lot of these patients just start injecting drugs again and that really complicates the situation. Especially if they come in with a subsequent prosthetic heart valve infection and, you know, we've determined they keep taking drugs. That's where the real question arises. What do you do then?	commitment to recovery, deservingness, follow-up care, frustration, futility, post-operation care, reinfection, relapse, risk evaluation
	1008	Interviewer: Does it impact the kind of valve that you would give them the first time? Respondent: Well, people that inject drugs tend not to live as long as people that don't. So, I would tend to put more tissue valves in. I don't think there's a difference in, you know, re-infection. But I think I would put more tissue valves in these people, which is a reason they're going to be on Warfarin, anyway. Then I would put them in a mechanical valve if they're young.	follow-up care, multiple surgeries, post-operation care, reinfection, relapse, risk evaluation

	1008	Interviewer: Okay. Good to know. Okay. So, now I have a clinical vignette. So, in this situation, Katie is a 34-year-old woman who uses heroin via injection drug use and she has staph aureus bacteremia and aortic valve endocarditis. At this point, she's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So, first, like have you had experience caring for a patient in a similar situation? Respondent: Oh, yeah. Interviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	patient story, pre-operation care, risk evaluation, save lives

	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance
	1008	Interviewer: What is -- I don't have any medical training. So, like how -- what's the success rate of surgery versus -- or effectiveness rate, I guess, of surgery versus antibiotics? Respondent: For prosthetic valve? Interviewer: Yeah. Respondent: Oh, it's much better with surgery. But then if they come back the second time - they'll probably come back the third and fourth time. Interviewer: Okay. And, so, would it impact you, and you've sort of spoken to this. But like, so, if endocarditis related to drug use, that impacts your decision to operate? Respondent: The second time around? Absolutely. Yes.	risk evaluation, deservingness

	1008	Interviewer: Yeah. Okay. What about if she was injecting cocaine but not heroin? Does that change your -- Respondent: Doesn't matter. Interviewer: Okay. And if it had been five years since she had last used drugs? Respondent: Yeah. I would be more prone to operate.	deservingness, risk evaluation
	1008	Interviewer: Can you tell me a little bit about the operative risks of re-operation versus the original operation? Respondent: Yeah, it's a riskier operation. Interviewer: Yeah. Why? Respondent: Because it's all scarred in. You got to take the old valve out, putting a new valve in. There's increased risk of re-infection. Those are the reasons.	risk evaluation, reinfection, relapse
	1008	Interviewer: Okay. So, in a case where like if the patient was definitely going to die without the surgery, like 100 percent mortality and had maybe 50 percent operative mortality? Respondent: Wouldn't matter. I would follow the same algorithm that I had before. If they came in shooting up drugs, they're not getting another operation. Interviewer: Okay. Wait. What about for folks who weren't injecting drugs, like -- Respondent: In the past? That had quit? Interviewer: Yeah. Respondent: Yeah, we would operate.	commitment to recovery, deservingness, futility, protocol, risk evaluation

	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues
	1007	Speaker 1: Um, how about if she injected cocaine but did not inject heroin? Speaker 2: Everything Speaker 1: So it changes. And then if she had used drugs, if the last time she used drugs was five years ago, does that also, Speaker 2: Everything affects the decision. Speaker 1: Okay, so does the time period between endocarditis… Speaker 2: I'm not saying… I don't know if… I don't want to rewrite your questions. Speaker 1: Yeah. Speaker 2: We're not saying we would refuse blindly or, or, or, or operate blindly on any of these situations. I'm just saying that everything affects it. I mean,	risk evaluation, disassociation (secondary)
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, pre-operation care, risk evaluation, valve preference, left vs right side

	1018	Tell me about the operative risks of reoperation verses the original operation. Well in general they are low. Unless you are up around the 4th or 5th sternotomy, 1st, 2nd 3rd are very comparable, it's really not worth talking about. So, it's a consideration but it's not a major one.	risk evaluation, multiple surgeries
	1012	Tell me your thoughts about management decisions in these cases So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up, and now you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again,	medical model, seriousness, multiple surgeries, risk evaluation, stigma
	1012	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was 1) pregnant? Um, yes it probably would but it would depend on how pregnant she was. If it is early pregnancy than she probably is going to lose the, lose the baby, and if it is later pregnancy it going to certainly jeopardize the baby, so yeah that would complicate things, it would depend on what stage of pregnancy sh	pregnancy, risk evaluation
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, risk evaluation, left vs right side
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, risk evaluation, societal issue

	1018	Do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? No. Does age impact your decision at all to operate? Yes in the extremes. You know a 90-year-old with terrible ventricular function, coronary disease, stroke, no I wouldn't but it's not really because of the cause of the endocarditis, it's just an assessment of all risk factors.	risk evaluation, age
	1018	Tell me about the operative risks of reoperation verses the original operation. Well in general they are low. Unless you are up around the 4th or 5th sternotomy, 1st, 2nd 3rd are very comparable, it's really not worth talking about. So, it's a consideration but it's not a major one.	multiple surgeries, risk evaluation
	1005	The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is.	data, pre-operation care, risk evaluation
	1005	I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	pre-operation care, post-operation care, risk evaluation
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1005	Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: That patient would not be an active drug user and would be treated like any non drug user.	deservingness, risk evaluation, stigma
	1005	I think we all tend to be a little bit more liberal with tobacco and marijuana over cocaine, heroin and methamphetamines, but in general it doesn't.	risk evaluation
	1005	Well reoperations always carry more risks. I think there's a higher pacemaker risk with any reoperation. Certainly a higher bleeding risk, stroke risk and length of operation.	risk evaluation

	1005	We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	risk evaluation, deservingness, futility, stigma
	1017	I: Alright. What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? S: First thing is, do they actually need surgery? Have they had a trial of antibiotics and medical management? Second is, what valve is infected? Third, what is their ongoing risk of, um, not having surgery? Fourth, what is the status of their, um, addiction?	risk evaluation, priorities, left vs right side
	1017	I: How did you approach that case? S: Um, first was to see how well we could stabilize her medically, and it turned out there were things we could do, so stabilize medically, prolong antibiotics, and that actually was very successful to allow us to have a, um, you know, less risk surgery.	pre-operation care, risk evaluation, medical model
	1017	I: Tell me about the operative risks of reoperation vs. the original operation. S: Uh, they are generally double. It depends on how experienced the center is, what the original operation is.	risk evaluation, tx compared to colleagues
	1017	I: If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, is it worth taking the patient to the OR? (Repeated) S: No. I: Ok. And why not? S: Well, because it is not about that risk. It is about, um, you know, their long-term risk.	risk evaluation, post-operation care, liability of medical professionals
	1004	Yes, and if it's because the person started using again, I won't operate again, because by definition, they've broken the contract. There'd be no problem if the person got endocarditis again because of dental procedure or other infection.	commitment to recovery, frustration, futility, priorities, risk evaluation, deservingness
	1004	R: Tell me about the operative risks of re-operation versus the original operation? I: It doubles the risk, the surgery is much harder	risk evaluation
	1004	R: If the patient has 100 percent mortality without surgery, and like a 50 percent [operative] mortality, like would you say it's worth taking the patient to the operating room? I: That patient sounds inoperable, their mortality is too high, it's too high a risk	risk evaluation

	1016	Does it impact what type of valve you use, mechanical vs. bioprosthetic? S: I always generally use, um, bioprosthetic valves. I'm concerned with compliance and there is a lot of additional risk with, um, mechanical valves.	risk evaluation, valve preference
	1016	This particular case, I'm not sure you will get to this in the interview, is in the aortic valve position. I think that, um, we look at things a little bit different if it is on the left or the right side of the heart, in terms of when we go to surgery and how aggressive we are.	left vs right side, risk evaluation
	1016	Great, you kind of touched on this before, does the patient's commitment to treatment impact your surgical decisions? S: Yes, it does. I: And how come? S: Um, I, you never want to have a death on your hands, um, and, if the patient is not committed to, um, recovery, um, there is the chance that if they use again, the valve can get infected, and what we see a lot is that, patients coming back, they get a valve, and then two months later they come back because they've been using again and the valve is now infected and now they need a new valve, and, um, so the problem is that every operation you do gets more and more risky, um, and poses more of a, technically more challenging but also more dangerous and more risks to the patient, um, and then the outcomes are not as good, the more operations you are doing, um, um, you know you get more complications, and all of these things, um. I think that the other thing that we see is that patients that go back to using, um, in this area do a lot of doctor shopping too. Um, and so, they'll get a valve at one hospital, they will go and use someplace else, use and then come back with a new infected valve, and now it falls on my shoulders, because this is the first time I'm seeing them to handle a very complex problem.	commitment to recovery, liability of medical professionals, reinfection, risk evaluation, multiple surgeries
	1016	uld your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Um, that's a really hard question. Um, I think that when you see patients like that, you, you definitely have to have a multidisciplinary approach, and, um, you know, surgery depending on the trimester, um, can be, um, um, contraindicated, um, but, you know, IV drugs in pregnancy is, is never a good thing. Um, and so, I think there has to be really a team, a team approach on that, about what to do with the pregnancy, um, is, should the	pregnancy, multidisciplinary group, risk evaluation

		pregnancy be terminated, and should she have an open-heart surgery, and kind of what are the…it's, it's a very complex issue.	
	1016	Um, so the operative risks are, um, this is presuming you're doing a sternotomy for the first operation, um, the second operation there's a lot more scar tissue, the reentry is more dangerous because you can saw into the heart, the heart can be stuck to weird things so you're a lot more likely to injure the lungs, the heart, the vessels, the coronaries, um, and, um, the operation is much longer, uh, there's more bleeding, uh, so, um, hemostasis, uh, can be an issue afterwards. The need for blood transfusions. I will say, getting outside of the box a little bit, depending on which side of the heart, if you're doing the right side, some of the surgeons are employing more minimally invasive techniques. Um, and in some sense, doing kind of a mini and sternotomy or vice versa, sternotomy and then a mini, depending on which valve is involved, doesn't always work, but, um, is, um, can reduce the risk or alter the risk to some degree. Um, there's a, kind of, um, I don't want to say, ethical argument, but, um, to some degree, it doesn't, some people take up issue with doing a mini procedure, um, on somebody that's done this to themselves, and giving them a very cosmetic incision and, um, treating it like it's not a big deal, that it's really easy for us to just go in through these really small incisions and fix this, and not relaying the, the, um, you know, the point that this is really serious. Um, sometimes, a mini approach can leave the patients feeling like it's not as big of a deal as a full sternotomy.	multiple surgeries, mechanical problem, left vs right side, risk evaluation
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it,	risk evaluation, liability of medical professionals, save lives, commitment to recovery, deservingness

		um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	
	1006	need for immediate surgery versus ability to complete a course of antibiotics and psychosocial rehabilitation.	pre-operation care, risk evaluation, priorities
	1006	Interviewer: Do people who inject drugs have a different operative and postoperative mortality? Interviewee: Yes.	post-operation care, risk evaluation
	1006	Interviewer: What complications do you worry about? Interviewee: Recidivism.	relapse, reinfection, risk evaluation
	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	discussing addiction, commitment to recovery, follow-up care, frustration, patient story, priorities, risk evaluation, societal issue, SUD treatment

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, commitment to recovery, follow-up care, post-operation care, risk evaluation
	1006	Interviewer: Some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about these examples? Interviewee: It's probably a flawed analogy. For one thing, valves are off the shelf and basically in unlimited supply. The human liver, I have pretty strong feelings about putting a precious donor organ in somebody that hasn't	commitment to recovery, frustration, priorities, risk evaluation, liver vs heart, deservingness

		proven their ability to stay off of the substance that caused the problem in the first place.	
	1006	Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	commitment to recovery, data, deservingness, futility, patient story, relapse, reinfection, risk evaluation
	1006	Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: Oh, that's totally different. Yeah, if they're UDS negative and it's 10 years, then they're just like anybody else.	deservingness, protocol, risk evaluation
	1006	Interviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis than a 55-year-old? Interviewee: Not really, unless they have—the 55-year-old has stopped and started, stopped and started. Interviewer: Does age impact your decision to operate on a prosthetic valve infection? Interviewee: Well if they're really old, yeah, but other than that, no. Interviewer: Okay. What about type of valve? Interviewee: No.	risk evaluation
	1006	Interviewer: Okay. Would your approach change if you learned that when Katie presented with the prosthetic valve endocarditis she was pregnant? Interviewee: Oh, would it have any effect on that? Interviewer: Yeah, would it change your approach to the patient if she was pregnant? Interviewee: Well may lose the child if you do	pregnancy, risk evaluation

		the operation, cardiopulmonary bypass, but if she presented in cardiogenic shock, I don't see that there's any alternative.	
	1006	Interviewer: What about if she injected cocaine but did not inject heroin? Interviewee: I'd treat 'em about the same, heroin has more addiction potentially, but it's not the only thing that goes into the equation. Interviewer: What if it was five years since she last used drugs? Interviewee: Well you feel if it's a prosthetic valve infection, a little more inclined to give her a second chance. Interviewer: Okay. How does different types of drug use influence your decision to operate for endocarditis? Interviewee: Define different kinds of drug use, it's all IV? Interviewer: I think they mean IV, different things that can be injected, or even including pills, does that play any role? Interviewee: Well it's the only people that can get endocarditis are the ones that inject. In terms of the different types of drugs, it doesn't really play that much of a role. I'm not sure that people really know what they're injecting anyway, just taking your dealer's word for it.	deservingness, risk evaluation
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives

	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID

		two opinions, they respect the opinion and they'll go along with it.	
	1012	Tell me your thoughts about management decisions in these cases So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up, and now you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not.	frustration, futility, seriousness, stigma , risk evaluation, relapse
	1012	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was 1) pregnant? Um, yes it probably would but it would depend on how pregnant she was. If it is early pregnancy than she probably is going to lose the, lose the baby, and if it is later pregnancy it going to certainly jeopardize the baby, so yeah that would complicate things, it would depend on what stage of pregnancy she was.	pregnancy, risk evaluation
	1012	Tell me about the operative risks of reoperation verses the original operation. So reoperation for just a degenerating prosthetic valve probably carries a little bit extra risk but not too much, it's always a little harder because there is scar tissue and stuff, a reoperation in someone like this you know not only is there scar tissue, but then there is infection and inflammation and all that other stuff that can complicate the operation. So, it	risk evaluation, multiple surgeries

		definitely will make the second operative riskier. You also have a patient who has already relapsed once and reinfected their valve and that certainly elevates the risk that that's going to happen a third time. So, I think the risks around the time of surgery go up and the risks afterwards go up a lot.	
	1015	I: Gotcha. Tell me about the operative risks of reoperation vs. the original operation. S: Um…bleeding, uh, damage to underlying, you know, intrapericardial structures. Uh, respiratory failure, I mean everything that you would say for an initial operation is higher. I: Ok. S: Um, and more rhythm disturbances, heart block, etc.	risk evaluation, multiple surgeries
	1015	atient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Uh, yeah.	risk evaluation
	1010	There are two things actually that come to my mind. The first one is, it sounds selfish, but I have [CHILDREN] and usually these are very young people, so I tell them to forget about what is going on right now but tell me how it all started. And that might not be related to mitral or aortic endocarditis but um, you can consider that selfish or self-interest, but I never assume I am doing something better than another parent did. So, I just try to see how they ended up down that path.	empathy, discussing addiction, knowledge, risk evaluation
	1010	In people who inject drugs, do they from your perspective have different operative mortality or post-op complications? They, uh, it's a difficult question to answer because they are younger than the average. So, I would say that their outcomes are better than the outcomes from the standard AV or the standard MV that we do. So, thinking out loud here, their operative outcomes are actually better than outcomes of the standard population.	post-operation care, follow-up care, risk evaluation
	1010	Do you worry about getting viral infections like Hep C or HIV? Yes, during the surgery? Yes absolutely.	infection risk to surgeons, risk evaluation

	1010	Are there any professional society guidelines you refer to? It is definitely crosses my mind. I think about, I get stuck once or twice a week in the operating room. Um. And I am not just saying take my glove off and you know having blood on my fingers, which happens probably every case or every other case, every day. but I am talking about ouch a real stick, let's just say once every two weeks. You always think that it is more often but when you think about with a clear mind, but it is definitely twice a month. Um so, two of these have been documented hepatitis C where I went through employee health, and um, get tested, then retested, then tested again, I forget at 6 months or 1 year, uh, and a it put my life at home on hold, I am sure you know what I mean and also once I remember I was walking with my son who was 3 or 4 at the time and I was holding his hand and he gave me a piece of some toy or something that had a piece of plastic and I didn't realize it had given me a papercut and then I had blood, and it was during the time I was being tested during the 6 months, and I went to hold his hand and I felt something wet and I realized it was my blood, and I saw blood on his hand too and I uh that hit home. I try to hold back when I describe the story, but that was hard. I am negative, I never converted, but I think I would be foolish if I didn't think about it operating. And the other thing that I, sometimes I understand it might not be fair or not open minded or whatever it is, but you know when you do things, you ask me if I think about it, it is a multifactorial answer. The second thing that I think about is, if someone comes to your house to fix the telephone line you know they pull over with a van and go in your house and maybe they put up a ladder to go up but its not a big deal. I don't think that Verizon is asking that same person to climb the 300-foot cell tower to do the same thing. There are people that sign up for that, there are people that are willing to do it, there are people that I would assume get paid a lot of money to do it. We don't have that in medicine, you don't have the option to say I do not feel comfortable exposing myself to this, I mean I am willing to take a chance when I don't know a patient has it, but if I have you know a drug addict with a high viral load I don't have the right in paper at least to say I do not feel comfortable operating. And maybe I shouldn't. I don't know. But it is something I think about. And the second thing that I think	protocol, infection risk to surgeons, risk evaluation

		about is if you are a police officer and you get shot on the job, there is a huge mechanism to support you and your family, to support your family because you are gone, same if you are a firefighter and you are killed in fire. I think if something happened to me, my family would have a very hard time getting through. Because we as a profession lack the mechanisms to support each other. We actually do the opposite we don't treat each other well. So, because of these three reasons it does cross my mind a lot when I operate.	
	1010	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Multiple times. How did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later. Looking back to prior cases like this is there anything you would change about your approach in hindsight? No.	patient story, protocol, second chance, risk evaluation, save lives

	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	commitment to recovery, deservingness, second chance, frustration, futility, reinfection, relapse, risk evaluation
	1010	Tell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, accountability, deservingness, follow-up care, protocol, risk evaluation

	1010	Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism. What do you think about those comparisons? I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	liver vs heart, deservingness, lack of resources, risk evaluation
	1010	You operate on Katie and she does well. She is linked into a methadone maintenance program. About 1 year later she is back in the hospital and she now has prosthetic valve endocarditis. Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. Any specific cases come to mind? One, two, three, four in 10 seconds. Tell me your thoughts about management decisions in these cases The issue starts I think earlier. And maybe that is my experience but out of the folks I have done in the past 4 years in the setting that you describe, not someone who had done drugs in the past, and then comes in, but in the setting you describe we don't care what brought you here, we are going to do an operation I can't tell you what the denominator is but it is not 3, its you know a decent number, not a single one has shown up to a post-operative visit. Not a single one. The numerator is zero. So, by the time they show up and they have these other issues, they have so many other things that are going on with them. They have	deservingness, follow-up care, pre-operation care, risk evaluation

		multiple septic foci everywhere, they have you know septic encephalitis, they have brain abscesses, they've have a craniectomy, or so, even though you would like to say well let me think what do I do for them- have I re-operated on someone yes I have, have I not re-operated yes more times I have not re-operated than I have re-operated and the reason again is not punitive, they have so many other things go on with their, because of their endocarditis that its really not indicated to operate on someone like them.	
	1010	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? Yes. For example, how would you feel about operating on someone who used to use drugs 10 years ago gets prosthetic valve endocarditis after a dental procedure? I wouldn't think twice about it. I would offer them an operation.	risk evaluation
	1010	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Does age impact your decision to operate? If it is caused by drugs? No	age, risk evaluation
	1010	How about the type of valves, does that impact your decision to operate- like a mechanical verses bioprosthetic? No	risk evaluation
	1010	How about if she had injected cocaine but did not inject heroin? Does that change anything? Intravenously? Yes No And what if when she presented with prosthetic valve endocarditis it was 5 years since she last used drugs? And then she relapsed? Yes. I would see that more favorably because I would think that she has shown that she can stay off drugs. Who am I to say what happened you know if she did it right after going home than if she did it 5 years later? Now what is the magic timeline? I don't know but to me that says that is someone who probably has a predilection to doing this and they fought hard	risk evaluation, deservingness

		for 5 years and uh, I would see it the same way as someone who had coronary artery disease and quit smoking for 5 years and then they smoked again after 5 years. Its uh, I am not going to pass judgement. So, it would make a difference, 5 years verses a day.	
	1010	Tell me about the operative risks of reoperation verses the original operation. Much higher. Uh, much more complicated an operation. Usually the problem with the reoperation for endocarditis, for example if you do a bypass on someone and then you have to do an aortic valve there is adhesions, there's open grafts, but where you are going to put the valve that is virgin territory. With endocarditis there is, you are operating in the same area, you are using second or third tier real estate because you used the first tier real estate the first time, and there is destruction from the process because usually these are Staph infections so there is destruction of the annulus, the mitral and aortic, so these operations are much much harder. A standard reoperation where you put a valve in and 15 years and the valve went bad, or even better someone had a mitral and now needs an aortic, much much harder.	risk evaluation
	1014	I: Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions. How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know	second chances, deservingness, support for patient, SUD treatment, insurance, risk evaluation, SES

		from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that. Am I confusing you?	
	1014	So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very calcified, taking them off, and putting it, is it doable, absolutely, but is it fraught with problems, absolutely. All the scar tissue comes in, you know, on top of the scar tissue that	paternalism, tx compared to colleagues, multiple surgeries, risk evaluation, seriousness

		comes in from regular operations. So, clearly, it gets worse.	
	1014	I: Um, yeah, this kind of goes with that, but… If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, do you think it is worth taking the patient to the OR? S: It's never, the, it's a theoretical, that's it. Theoretical, just never, it's never, never, and again. Very unlikely scenario, uh, because A) we don't know, and B) yes, so 100% mortality, somebody like Katie, you know, she is in cardiogenic shock, yes, she is going to die. But I don't think her initial risk is 50%. And you know, there is always something you can do for those patients, you know. But sometimes, again, the decision-making is, is a little more complicated then, it is not binary, lets put it this way.	risk evaluation
	1014	If I can, uh, so tricuspid valve, I will try as much as I can to wait, because even wide open tricuspid regurgitation is tolerated very well with those younger patients, and if they embolize, it goes to the lung, like I said, so it's not, it's nothing, it's bad, but it's not deadly, it's not going to go to the brain. Tricuspid valve, I try to wait as much as…sometimes they are unstable and you have to do something about it, but very unlikely. On the left side, we know that if patients embolize, we put them on antibiotics, there is a dramatic decrease in the risk of further embolization, and if the valve is not severely damaged, and they're not hemodynamically suffering from valve dysfunction, conservative therapy can help to live to fight another day, so I would like to operate on them when they are sterile, at least. So, I'd like to operate on them when they are far out from the acute episode, they've been on antibiotics as much as we can, and their valve, they're not in an acute setting, they were moved into subacute or the chronic setting, and now their valve got worse and they need it. So, you think that would help.	risk evaluation, left vs right side

	1011	Do people who inject drugs have different operative and post-operative mortality? Um, I don't know the data for that. The general sense is that it is not the operation that is difficult. I think match for match these patients may actually be healthier than some of the other infections that we do. Infections in and of themselves have a higher mortality than non-infectious operations. That means that an aortic root replacement that is done for aortic aneurysm has a much lower mortality than an aortic root replacement that is done for endocarditis. Aortic, prosthetic aortic valve infections, which is done, redo aortic valve replacement which is done because the aortic valve over time deteriorated- had structural deterioration- has a much better outcome than if the valve were to get infected. So the endocarditis part surely makes the outcomes much worse but if you are asking me the question that does endocarditis unrelated to IV drug use is that different from endocarditis related to drug abuse I don't know the answer to that question.	risk evaluation
	1011	Does it impact what type of valve, for example mechanical or bioprosthetic valve? So, the data, um, there is no separate data on that, but it is a very interesting question that comes up every time. And personally, it does impact decision making. I do feel that these patients are in a very vulnerable situation, they have a lot of stresses going on in their life, and there is a lot that they have to figure out, especially someone who comes in who was actively using drugs at the time of their intervention, and the idea that they are going to go through this big operation, they are going to clean themselves up right away is sometimes too much to ask of them. It is not uncommon, I think for us to see some relapses before the patient eventually can fully quit. And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little anticoagulation and the valve becomes thrombosed, that's a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure themselves then that has a problem as well. So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve	risk evaluation, data, societal issue, relapse, protocol

		and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	
	1011	Do you worry about getting viral infections like Hep C and HIV? Um, I do. I worry not only for myself but also for the staff that is taking care of these patients, I worry for my family if I were to get infected. So, I think those are just normal human reactions, but I worry about that stuff for anybody who has hepatitis C. Now the, you know, the, I don't know what the circumstances are, or what the data shows that uh, what the data shows in terms of incidence of hepatitis C or HIV in patients who use drugs verses patients who don't use drugs but you think that they share some of the same risk factors for transmission, needles, and you know whatever. So, when we see a patient with injection drug abuse, we screen them, but I would be worried about getting hepatitis C in the same way that I would for a drug abuse patient than I would be for someone else who has hepatitis C for an unrelated reason. I think that is something that we ask the staff to be careful about as well because these are sharps that we are going to be handling, we are going to be dealing with bodily fluids, not only operating but perioperatively in the ICUs and floors pre and after the operation.	risk evaluation, support for surgeons, empathy

	1011	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency, and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Yes, today. The reason I was delayed was somebody was in an emergency situation, actively using drugs and has an aortic valve infection and is in some semblance of cardiogenic shock. We don't know if that patient has an aortic root abscess or not, but this is not, you know, an infrequent occurrence. How did you approach that case? Or how have you approached these types of cases? So, like I said the first thing is how do we care for these patients medically. Try to optimize them from there shock perspective and then you have got to figure out you know what operation they need and what is the optimum timing for that operation. So, no different than what would be anybody else with an aortic root abscess without IV drug use.	patient story, risk evaluation
	1011	You operate on Katie and she does well. She is linked into a methadone maintenance program. About 1 year later she is back in the hospital and she has prosthetic valve endocarditis. Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. Any specific cases come to mind? A patient very similar to her in age who had a tricuspid valve replacement and came back with tricuspid valve endocarditis. Tell me your thoughts about management decisions in these cases It becomes trickier because at that point you are not relying on future projections, it's not what, like the conversation you had with the patient the first time around. Going back to your previous question about you know their commitment to quit injecting drugs at this point they have a track record so my first question would be, when Katie comes back is that was, she injecting drugs again since the time of her previous operation and I think that is the big question. Because patients can get endocarditis without injecting drugs, I mean that's not you know one population, so what I would say is that if we can be reasonably sure that she has been clean and she hasn't done	patient story, risk evaluation, commitment to recovery, protocol, deservingness

		any drugs again then I would treat her like she has endocarditis and again there are guidelines about what to do for endocarditis just not specific for IV drug abuse. And you treat her like you would. Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	
	1011	Would your approach change if she injected cocaine but not heroin? No, I don't see how. So, in my specialty it's the needle, right. It's not the cocaine or the heroin that is going to give them the endocarditis it's the needle. The fact that they injected something with equivalent risk. Would your approach change if it was 5 years since she last used drugs? Yes.	risk evaluation
	1011	Tell me about the operative risks of reoperation verses the original operation. There is data about that, there is data out there to compare risks of first operation verses redo operation and it is a little bit heterogenous data but I think most of us would feel that there is some extra technical complexity to a redo operation without the endocarditis but you could get nearly equivalent outcomes in the second operation as you were the first operation. In the setting of endocarditis there is clear data to show, multiple papers, that if you have to do an operation for endocarditis mortality goes up for the first operation, so first operation with and without endocarditis and second	risk evaluation

		operation with and without endocarditis every time endocarditis and infection make the mortality go higher.	
	1002	Yeah, we made sure to. We just need to make sure to discuss this drug use before going to surgery, because that's probably the cause of these things.	discussing addiction, pre-operation care, risk evaluation
	1002	Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	commitment to recovery, deservingness, frustration, futility, risk evaluation, tx compared to colleagues, disagreements (professional)
	1003	But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	futility, risk evaluation, SUD treatment
	1003	Interviewer: Okay. What about if she was injecting cocaine, but not injecting heroin? Respondent: It doesn't really [impend] my decision making.	risk evaluation
	1003	Interviewer: No, I think in this example, we're assuming that she's like on methadone, and stable on it. Respondent: Well, she needs an op – if she needs an operation, we'll certainly do it.	risk evaluation
	1003	The operation's more difficult, because you have scar tissue on the heart, and then the scar tissue on the valve.	risk evaluation
	1003	Most of the time, someone comes back with a second valve operation, the existing valve they have is going to be infected. But in the rare circumstance not the case, we would offer them surgery, certainly. And again, operation does [unintelligible] more risk, because there is scar tissue on the heart and so forth. Interviewer: Mm-hmm. Or, what if it was like a mechanical valve that had been used the first time? Respondent: Yeah. We've seen that. Well, we'd take it out and put another valve in; probably another mechanical, unless they've shown that they can't tolerate Coumadin. But we'll put a mechanical in and if they can – they do tolerate Coumadin, yeah.	follow-up care, risk evaluation

	1014	So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very calcified, taking them off, and putting it, is it doable, absolutely, but is it fraught with problems, absolutely. All the scar tissue comes in, you know, on top of the scar tissue that comes in from regular operations. So, clearly, it gets worse.	paternalism, tx compared to colleagues, multiple surgeries, risk evaluation, seriousness
	1014	I: Um, yeah, this kind of goes with that, but… If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, do you think it is worth taking the patient to the OR? S: It's never, the, it's a theoretical, that's it. Theoretical, just never, it's never, never, and again. Very unlikely scenario, uh, because A) we don't know, and B) yes, so 100% mortality, somebody like Katie, you know, she is in cardiogenic shock, yes, she is going to die. But I don't think her initial risk is 50%. And you know, there is always something you can do for those patients, you know. But sometimes, again, the decision-making is, is a little more complicated then, it is not binary, lets put it this way.	risk evaluation

	1014	If I can, uh, so tricuspid valve, I will try as much as I can to wait, because even wide open tricuspid regurgitation is tolerated very well with those younger patients, and if they embolize, it goes to the lung, like I said, so it's not, it's nothing, it's bad, but it's not deadly, it's not going to go to the brain. Tricuspid valve, I try to wait as much as…sometimes they are unstable and you have to do something about it, but very unlikely. On the left side, we know that if patients embolize, we put them on antibiotics, there is a dramatic decrease in the risk of further embolization, and if the valve is not severely damaged, and they're not hemodynamically suffering from valve dysfunction, conservative therapy can help to live to fight another day, so I would like to operate on them when they are sterile, at least. So, I'd like to operate on them when they are far out from the acute episode, they've been on antibiotics as much as we can, and their valve, they're not in an acute setting, they were moved into subacute or the chronic setting, and now their valve got worse and they need it. So, you think that would help.	risk evaluation, left vs right side
	1005	Interviewer: What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Interviewee: The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is. Interviewer: Do people who inject drugs have a different operative and postoperative mortality? Interviewee: I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	risk evaluation, pre-operation care, seriousness, data
	1005	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: Yes. Interviewer: If so, what questions did you ask, what are some of the terms you use to discuss addiction? Interviewee: I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in	discussing addiction, SUD treatment, commitment to recovery, patient consent, priorities, risk evaluation

		rehabilitation. Interviewer: Have you heard of the term opioid use disorder or used it when talking with a patient? Interviewee: Yes, I've heard of that term, but I haven't used that term with a patient.	
	1005	Interviewer: This is going to ask you to speak a little bit about the risks of a reoperation versus the original surgical procedure. Interviewee: Well reoperations always carry more risks. I think there's a higher pacemaker risk with any reoperation. Certainly a higher bleeding risk, stroke risk and length of operation. Interviewer: If a patient has 100 percent mortality without surgery and 50 percent operative mortality with an operation, is it worth taking the patient to the OR? Interviewee: We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	risk evaluation, multiple surgeries, futility, deservingness, stigma
	1014	How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then	support for patient, deservingness, insurance, SUD treatment, risk evaluation, SES

		again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that.	
	1014	I: Right. Um, ok, great. So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very calcified, taking them off, and putting it, is it doable, absolutely, but is it fraught with problems, absolutely. All the scar tissue comes in, you know, on top of the scar tissue that comes in from regular operations. So, clearly, it gets worse.	risk evaluation, seriousness, paternalism, tx compared to colleagues, multiple surgeries
	1014	I: Um, yeah, this kind of goes with that, but… If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, do you think it is worth taking the patient to the OR? S: It's never, the, it's a theoretical, that's it. Theoretical, just never, it's never, never, and again. Very unlikely scenario, uh, because A) we don't know, and B) yes, so 100% mortality, somebody like Katie, you know, she is in cardiogenic shock, yes, she is going to die. But I don't think her initial risk is 50%. And you know, there is always something you can do	risk evaluation, seriousness

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	1009	What are some of the first things that you think about when you're asked to evaluate someone who injects drugs for a valve replacement? Surgeon: What is the microorganism, what valve is infected? Is it on the right side of the heart? The left side of the heart? Do they have heart failure? Have they had thromboembolic complications?	priorities, protocol, pre-operation care, risk evaluation
	1009	Mortality, is that something, or does it impact what type of valve you might give them? Surgeon: Mortality from the sense of the operation? Interviewer: Mm-hmm. Surgeon: It's something you think about. You always want to offer and operation where you think there's a mortality benefit, that they have a better chance of living with the operation than without. Sometimes, you know, questions of futility come into play but that	priorities, risk evaluation, save lives

		comes into play later rather than the initial evaluation.	
	1009	an you say more about the futility piece? Surgeon: If there's a – sometimes cases of endocarditis are so advance, whether it's a patient who's injection drug user, or not, that they're just unrepairable. Not reconstructable, or they've had, you know, severe [thrombopollic] complications to the brain where there's no good prognosis there. Even if you fix the heart, they're never going to return to a quality of life. Other times there are complications that have arisen from the endocarditis that make surgery very risky and it's not the right thing to do.	futility, risk evaluation, liability of medical professionals, post-operation care
	1009	Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in cardiogenic shock with severe heart failure and a root abscess, they need an operation.	risk evaluation, deservingness, priorities, protocol, save lives
	1009	Is there someone that you could call in the hospital who has addiction medicine expertise? Surgeon: Yes. Interviewer: Is that – how long have they been there and what's relationship been like? Surgeon: It's fine. There's really nothing they're going to say to me that impacts what I do, though. You know, hospitals have addiction medicine specialists. You know, we have the infectious disease services. There's a lot of people that try to get involved in these cases. A lot of them don't really have anything of value to add. I mean, I think when it comes down to it you have a patient, if they have an indication for surgery, you weigh the risks to benefits and then you decide to offer surgery or not.	collaboration with addiction medicine, multidisciplinary group, risk evaluation, futility

	1009	You've talked about this a little bit but like what – does it impact your decision if the endocarditis is related to drug use? How do you feel about operating on someone who used to use drugs, you know, 10 years ago and then gets prosthetic valve endocarditis from a dental procedure or something? Surgeon: I would operate on them.	time between operations, reinfection, risk evaluation
	1009	Can you tell me a little bit about the operative risks of re-operation versus the original operation? Surgeon: So the operative risk is higher the second time around because a lot of scar tissue forms in the mediastinum and so the risk of sternal reentry in terms of injuring the right ventricle or any other structures when you're trying to dissect them free are higher for any redo operation. Depending on what you did the first time, sometimes if you've done a complete aortic root replacement with a homograft, that redo operation is fraught with extraordinary risk. It's very, very hard. These things get calcified. It's very hard to get them out. And the risk of the redo can vary widely but it's a lot harder than the first time around.	multiple surgeries, risk evaluation, knowledge
	1009	In a case where if a patient had 100 percent mortality without the surgery, definitely going to die but had maybe 50 percent operative mortality, would it be worth taking the patient to the OR? What's your risk calculation on that? Surgeon: What's the reason we're going? Is it recurrent endocarditis from injection drug abuse or is it just any patient? Interviewer: Let's say any patient for now. Surgeon: If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	risk evaluation, perception of risk in PWID, multiple surgeries, stigma , save lives, reinfection, futility, relapse

	1001	The valve surgery certainly carries the different level of risk. So each value has different technical difficulty or aspect. For example, mitral valve – the surgery would be more challenging than aortic valve surgery. The [redo] surgery will be more difficult than the first-time operation. So I would say everybody is different. Every patient is different. So we will not know the patient's individual risk for surgery until we complete their preop testing and evaluation.	risk evaluation, multiple surgeries, pre-operation care, prioritization (secondary)
	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	medical model, risk evaluation, save lives, rationalization (secondary)
	1001	Yeah, my personal experience is I will like to discuss with the patient – for example, the valve choices, the risk/benefit. That also includes the needs for the restraint of the drug use in the future. You know, I typically need the patient's commitment to surgery, because the operative risk can range anywhere from three or four percent to sometimes 20 percent with organ failure. So there's a lot of risk for us to take on both ends, so I think it's fair for the patient and his or her family to understand the situation and to understand our perspective. That will facilitate better care down the road.	commitment to recovery, discussing addiction, knowledge, risk evaluation, rigidity (secondary)
save lives			
	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives

		doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	
	1010	ow did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later.	protocol, priorities, training, risk evaluation, save lives
	1019	How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that	priorities, seriousness, save lives
	1019	Does it… so it does not, does No. …it impact your decision to operate if the endocarditis is related to drug use No. Ok. Again, that's not my job. My job is to take care of patients with heart problems.	deservingness, save lives, priorities
	1019	So, do you look at a 25 year old with prosthetic valve endocarditis different than a 55 year old? No. Why not? Again, that's not my job [LAUGHTER] You know, that… that's… you know, that… that…. that that that bias is inappropriate. You know, when I… when I received that board certification on the wall there, they didn't tell me that I get to pick and choose the patients I operated on based on my own personal biases. I don't recall seeing that anywhere in the Hippocratic oath or anywhere else.	save lives, age
	1019	I have never said to a patient that I'm going to do this operation on you but, if you use drugs again, I'm not going to operate on you again. I think that's just about the worst thing that you can say to somebody. I think it's malpractice.	save lives, contract, deservingness

	1019	at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't.	pregnancy, patient consent, save lives, seriousness, priorities
	1019	And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient. The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	risk evaluation, tx compared to colleagues, priorities, save lives, second chance
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem

	1019	OK. Tell me your thoughts about management decisions regarding these cases. If a patient… Uh, if a patient is a candidate for surgery and the operation is feasible, operate. Okay Period. Okay Point blank. Does it… so it does not, does No. …it impact your decision to operate if the endocarditis is related to drug use No. Ok. Again, that's not my job. My job is to take care of patients with heart problems.	multiple surgeries, second chances, risk evaluation, deservingness, save lives
	1019	So, do you look at a 25 year old with prosthetic valve endocarditis different than a 55 year old? No. Why not? Again, that's not my job [LAUGHTER] You know, that… that's… you know, that… that…. that that that bias is inappropriate. You know, when I… when I received that board certification on the wall there, they didn't tell me that I get to pick and choose the patients I operated on based on my own personal biases. I don't recall seeing that anywhere in the Hippocratic oath or anywhere else.	age, save lives
	1019	I have never said to a patient that I'm going to do this operation on you but, if you use drugs again, I'm not going to operate on you again. I think that's just about the worst thing that you can say to somebody. I think it's malpractice.	deservingness, save lives, contract
	1019	Would you… would your approach change if you learned that when Katey presented with prosthetic valve endocarditis was pregnant? Injected cocaine but did not inject heroin? Or if it was five years since her last use drugs? Um, probably not. Um… you know… at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not	pregnancy, patient consent, save lives, priorities, seriousness

		going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	
	1019	The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	tx compared to colleagues, risk evaluation, second chances, priorities, save lives

	1008	nterviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	priorities, risk evaluation, pre-operation care, save lives, time constraints, patient story
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem
	1019	OK. Tell me your thoughts about management decisions regarding these cases. If a patient… Uh, if a patient is a candidate for surgery and the operation is feasible, operate. Okay Period. Okay Point blank. Does it… so it does not, does No. …it impact your decision to operate if the endocarditis is related to drug use No. Ok.	multiple surgeries, second chances, risk evaluation, deservingness, save lives

		Again, that's not my job. My job is to take care of patients with heart problems.	
	1019	So, do you look at a 25 year old with prosthetic valve endocarditis different than a 55 year old? No. Why not? Again, that's not my job [LAUGHTER] You know, that… that's… you know, that… that…. that that that bias is inappropriate. You know, when I… when I received that board certification on the wall there, they didn't tell me that I get to pick and choose the patients I operated on based on my own personal biases. I don't recall seeing that anywhere in the Hippocratic oath or anywhere else.	age, save lives
	1019	I have never said to a patient that I'm going to do this operation on you but, if you use drugs again, I'm not going to operate on you again. I think that's just about the worst thing that you can say to somebody. I think it's malpractice.	deservingness, save lives, contract
	1019	Would you… would your approach change if you learned that when Katey presented with prosthetic valve endocarditis was pregnant? Injected cocaine but did not inject heroin? Or if it was five years since her last use drugs? Um, probably not. Um… you know… at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could	pregnancy, patient consent, save lives, priorities, seriousness

		pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	
	1019	The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	tx compared to colleagues, risk evaluation, second chances, priorities, save lives
	1018	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um, my first reaction is sympathy. It's an addiction, it's not a crime. And um, most of the time, and um, I think your question specifically mentioned substance abuse, injection drugs, ok, yeah, it's sympathy. And looking forward to figuring out if there is a way to help this person.	priorities, empathy, save lives
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism

	1018	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, yes, two lives at stake instead of one.	save lives, pregnancy
	1016	Some people make comparisons between valve replacements in the setting of infective endocarditis and a liver transplant in the setting of alcoholism. What do you think of these examples? S: Um, they're both some degree self-inflicted. Um, I don't think the example holds up well, because you could argue that anybody that doesn't exercise or doesn't eat right that develops coronary disease, um, because of their lifestyle and diet is also self-inflicted, so, I think that, um, a disease is a disease, and as doctors it is our obligation to treat the patients. I: Great, ok, so going back to Katie. You operate on Katie, and she does well. She's linked into a methadone maintenance program. About one year later, she is back in the hospital and she has prosthetic valve endocarditis. We kind of talked about this before. Have you seen prosthetic valve endocarditis in people who inject drugs? S: Yes.	liver vs heart, deservingness, save lives
	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	save lives, commitment to recovery, risk evaluation, deservingness, liability of medical professionals
	1006	Interviewer: What aspects of surgery drew you in? Interviewee: Watching people get better relatively quickly, understanding. Now that was what attractive about internal medicine, is understanding the ideology of the disease, and then influencing it, I just enjoyed the hands on aspect of surgery.	save lives

	1006	nterviewer: Okay. Would your approach change if you learned that when Katie presented with the prosthetic valve endocarditis she was pregnant? Interviewee: Oh, would it have any effect on that? Interviewer: Yeah, would it change your approach to the patient if she was pregnant? Interviewee: Well may lose the child if you do the operation, cardiopulmonary bypass, but if she presented in cardiogenic shock, I don't see that there's any alternative.	pregnancy, save lives, priorities, risk evaluation
	1013	How did you think about that decision? So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	priorities, save lives, SUD treatment, time constraints
	1013	Uh, yes it does and in the scenario, that you've described probably less so – it's the first operation and um, they're in cardiogenic shock. If somebody comes back and they are not committed and they are not in shock but they have, there is a suspicion for a vegetation and so on and so forth then it is not uncommon for us to say ok let's see if we can manage this with antibiotics at least and see if you can try to demonstrate and ability to be sober. The problem is if they come back again in shock what do you do? I don't think we turn someone down for surgery just because this is their second episode so there are placed that will have a you get one shot kind of a rule but I don't believe in that, that's not right, you can imagine someone who gets a valve replacement then is sober then relapses which is pretty common, right, and with the relapse they get infected again but they were sober for two years until their mother died or something like that then they fell off the wagon, then it feels like you've got some hope if you can deal with the valve infection then they can get sober again.	save lives, deservingness, commitment to recovery, second chance, relapse
	1013	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Oh, boy. Um, well, I suppose, well not that's getting really complicated and its going to depend how far along she is in her pregnancy. Cardiac surgery is very high risk for fetal loss but I suppose we would probably be more	pregnancy, priorities, save lives

		inclined to operate if she was pregnant given that there is another life involved and the chance that we might be successful	
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	support for patient, post-operation care, SUD treatment, save lives, follow-up care, discussing addiction, multidisciplinary group
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy
	1003	If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive. So then, you could have a live patient to have this discussion with. So, first and foremost, is to save the patient's life, so I'd recom – I would put the patient on a schedule, no matter what the social situation is, because I mean, we're here to help people and even you know, if she doesn't have surgery, she's going to die. So, that would be my approach.	patient consent, save lives, empathy, discussing addiction

	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone. Interviewer: Interesting. Okay. Respondent: A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	second chance, liver vs heart, save lives, support for patient, paternalism, accountability, commitment to recovery
	1003	Interviewer: If the patient has 100 percent mortality without surgery, and like a 50 percent [operative] mortality, like would you say it's worth taking the patient to the operating room? Respondent: If they're young? Interviewer: Yeah. Respondent: Yes. Yes. Don't ask what I consider young, but - Interviewer: [Laughter] Respondent: It changes as - we all get older, so - Interviewer: Yeah, yeah. Respondent: - the threshold goes down. But	risk evaluation, age, save lives

		anyhow, yeah, if they're young, I'll – yeah. [If it's the only chance] they have, sure.	
	1003	Respondent: Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive.	desired changes, risk evaluation, save lives, pre-operation care, time constraints, frustration, seriousness
	1009	Interviewer: So now I'm going to introduce a clinical vignette so in this case, Katy, is a 35-year-old woman who uses heroin via injection. She has staph aureus, [spectoremia] and aortic valve endocarditis. She's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So have you had personal experience caring for a patient in a similar situation? How did you approach that case? How would you approach this kind of case? Surgeon: Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in	risk evaluation, protocol, save lives, second chance

		cardiogenic shock with severe heart failure and a root abscess, they need an operation.	
	1011	f you fix the valve and they don't stop what they are doing, you have put them in the exact same situation. So just like for liver transplant if you can't control their alcoholism then you are not going to help them by just a liver transplant. The reason it is different though is that we still operate on them, you may ask the question well if that is how you feel then why do you still operate on these patients because you know no one would get a liver transplant if they are still drinking alcohol because the resources are different, there is only a finite number of livers and they really are in a position where they can put a hard stop to it and say no we are not going to do this because somebody else can get that liver. In our situation we don't make that an active hard stop for us because we are not limited by the amount of valves that we have or other things we have so we would like to give these patients a chance, we want to give them a chance we want to give them a shot at getting better so sometimes we do accept less than ideal situations.	liver vs heart, multiple surgeries, save lives, commitment to recovery, lack of resources, paternalism
	1011	Tell me about the operative risks of reoperation verses the original operation. There is data about that, there is data out there to compare risks of first operation verses redo operation and it is a little bit heterogenous data but I think most of us would feel that there is some extra technical complexity to a redo operation without the endocarditis but you could get nearly equivalent outcomes in the second operation as you were the first operation. In the setting of endocarditis there is clear data to show, multiple papers, that if you have to do an operation for endocarditis mortality goes up for the first operation, so first operation with and without endocarditis and second operation with and without endocarditis every time endocarditis and infection make the mortality go higher.	data, save lives, risk evaluation
	1013	So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you	priorities, SUD treatment, save lives, time constraints

		are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	
	1013	Uh, yes it does and in the scenario, that you've described probably less so – it's the first operation and um, they're in cardiogenic shock. If somebody comes back and they are not committed and they are not in shock but they have, there is a suspicion for a vegetation and so on and so forth then it is not uncommon for us to say ok let's see if we can manage this with antibiotics at least and see if you can try to demonstrate and ability to be sober. The problem is if they come back again in shock what do you do? I don't think we turn someone down for surgery just because this is their second episode so there are placed that will have a you get one shot kind of a rule but I don't believe in that, that's not right, you can imagine someone who gets a valve replacement then is sober then relapses which is pretty common, right, and with the relapse they get infected again but they were sober for two years until their mother died or something like that then they fell off the wagon, then it feels like you've got some hope if you can deal with the valve infection then they can get sober again.	save lives, commitment to recovery, deservingness, relapse
	1013	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Oh, boy. Um, well, I suppose, well not that's getting really complicated and its going to depend how far along she is in her pregnancy. Cardiac surgery is very high risk for fetal loss but I suppose we would probably be more inclined to operate if she was pregnant given that there is another life involved and the chance that we might be successful.	pregnancy, save lives, priorities
	1001	Later on, by reading the books and watching TV, I was very impressed by the surgeons – their technical skills, their willingness to save people's lives. So that was the main drive to get me into the medical school. I knew I was planning to be a surgeon on my first day entering medical school, and I followed that dream until now.	save lives
	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not	prevalence of endocarditis, risk evaluation, save lives, medical model

		compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	
	1001	Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and the family, just because the etiology is different from other patient populations.	perception of risk in PWID, discussing addiction, save lives, prevalence of endocarditis
	1001	Given the circumstances now, endocarditis is just pandemic, affecting the financial conditions and socioeconomics. It's difficult. I think that society cannot afford having this patient again and again, multiple times – and whether [unintelligible 00:24:55]. To me, even though we would [choose to save people's lives], there are certain limits to something we can do. But again, that requires a discussion between the healthcare professionals, not just the surgeons. It should be based on the studies or a recommendation from the society and/or the medical society, not just the surgical society.	prevalence of endocarditis, societal issue, multiple surgeries, cost, data, deservingness, save lives
	1001	Interviewer: What's your sense about how you approach and treat patients who inject drugs in comparison to your colleagues? Respondent: I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	tx compared to colleagues, lack of resources, protocol, disagreements (professional), risk evaluation, save lives, tx compared to broader
	1005	Well that patient's critically ill, so that patient needs to be—should probably be in the hospital for six weeks, because if she gets better from her shock and then gets tuned up and then have surgery, then she'll need probably two to four weeks of postoperative	follow-up care, save lives

		IV antibiotics in the hospital, and then we prefer to discharge straight to rehab.	
	1008	Interviewer: Okay. Good to know. Okay. So, now I have a clinical vignette. So, in this situation, Katie is a 34-year-old woman who uses heroin via injection drug use and she has staph aureus bacteremia and aortic valve endocarditis. At this point, she's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So, first, like have you had experience caring for a patient in a similar situation? Respondent: Oh, yeah. Interviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	patient story, pre-operation care, risk evaluation, save lives

	1008	Interviewer: And, so, would your approach change if you had learned -- like when Katie presented with prosthetic valve endocarditis, she was pregnant? Like what would your treatment look like for someone who's pregnant? Respondent: Well, I probably would be more apt to operate or -- like doing surgery on somebody who's pregnant is at a very high risk for, you know, having spontaneous abortion.	pregnancy, deservingness, save lives
	1018	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um, my first reaction is sympathy. It's an addiction, it's not a crime. And um, most of the time, and um, I think your question specifically mentioned substance abuse, injection drugs, ok, yeah, it's sympathy. And looking forward to figuring out if there is a way to help this person.	empathy, medical model, save lives, priorities
	1018	atie, in our vignette, how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	paternalism, multidisciplinary group, post-operation care, save lives, follow-up care, timing of SUD tx
	1018	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, yes, two lives at stake instead of on	pregnancy, save lives
	1012	ave you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	empathy, discussing addiction, support for patient, training, mechanical problem, societal issue, save lives

	1018	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um, my first reaction is sympathy. It's an addiction, it's not a crime. And um, most of the time, and um, I think your question specifically mentioned substance abuse, injection drugs, ok, yeah, it's sympathy. And looking forward to figuring out if there is a way to help this person.	priorities, empathy, save lives
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism
	1018	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? Um, yes, two lives at stake instead of one.	save lives, pregnancy
	1005	Well that patient's critically ill, so that patient needs to be—should probably be in the hospital for six weeks, because if she gets better from her shock and then gets tuned up and then have surgery, then she'll need probably two to four weeks of postoperative IV antibiotics in the hospital, and then we prefer to discharge straight to rehab.	follow-up care, save lives
	1016	Some people make comparisons between valve replacements in the setting of infective endocarditis and a liver transplant in the setting of alcoholism. What do you think of these examples? S: Um, they're both some degree self-inflicted. Um, I don't think the example holds up well, because you could argue that anybody that doesn't exercise or doesn't eat right that develops coronary disease, um, because of their lifestyle and diet is also self-inflicted, so, I think that, um, a disease is a disease, and as doctors it is our obligation to treat the patients.	liver vs heart, deservingness, save lives

	1016	If a patient has 100% mortality without surgery and 50% operative mortality with an operation, is it worth taking the patient to the OR? S: Can you repeat the question? I: Yeah. (Repeat of question above) S: Um, it depends on the situation. Um, I would say, some surgeons would say 50% is too high. Um, and that patient dies, it's really a death on you. Um, and, the other argument is that, if they're going to die anyways, you give them the best chance to save their life. But sometimes we know that the mortality is so high that, um, that it's not, it's not worth it, um, to, to have that personal risk on you as a surgeon. Um, it also, if the risk is that high, and they're not likely to enter a recovery program or they're more likely to relapse, you wouldn't undertake that risk.	risk evaluation, liability of medical professionals, save lives, commitment to recovery, deservingness
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries

	1006	Interviewer: Okay. If a patient has 100 percent mortality without surgery and 50 percent operative mortality with the surgery, is it worth taking that patient to the OR? Interviewee: I'm much more concerned about the chances of recidivism. If, for whatever reason it's been 10 years since they've last used IV drugs and just had a bad episode in their life and fell off the straight and narrow, and it's a 50 percent mortality, I'd feel okay doing the operation. It's been nine months and it's a 50 percent mortality, I'd say no way I'm gonna operate—not no way I'm gonna operate, but it'd be unlikely to operate.	commitment to recovery, deservingness, futility, frustration, multiple surgeries, risk evaluation, save lives
	1012	replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	save lives, priorities, accountability
	1012	Have you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	discussing addiction, medical model, save lives, desired changes, empathy

	1010	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Multiple times. How did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later. Looking back to prior cases like this is there anything you would change about your approach in hindsight? No.	patient story, protocol, second chance, risk evaluation, save lives
	1014	S: She's young. You gotta give her a shot. You can't waffle here, because right now her, to have a serious conversation with her at this point is out of question. She is in shock. The valve needs to be fixed. Mechanical problem that needs a mechanical solution. Unfortunately, you know, it is going to be a little bit more, uh, technically demanding and this is not a straightforward AVR, probably a root replacement, and to see what her outlook looks like on the, on the addiction, uh, on the addiction level is, is not, we don't have time to talk to her. We just have to operate on her. She's too young, can't let her go.	priorities, time constraints, age, save lives
	1005	I decided to become a surgeon as I love the technical aspects of surgery with the ability to fix a problem. Interviewer: What aspects of surgery drew you in? Interviewee: Repeat that? Interviewer: What aspects of surgery drew you in? Interviewee: Oh, drew me in? Just I think operating on patients and seeing patients before and after their operations with positive progress, hopefully.	save lives

	1005	Interviewer: How should this patient in that vignette have the opioid use disorder treated and win? Interviewee: Well that patient's critically ill, so that patient needs to be—should probably be in the hospital for six weeks, because if she gets better from her shock and then gets tuned up and then have surgery, then she'll need probably two to four weeks of postoperative IV antibiotics in the hospital, and then we prefer to discharge straight to rehab.	post-operation care, SUD treatment, PICC line risk, follow-up care, save lives
	1014	She's young. You gotta give her a shot. You can't waffle here, because right now her, to have a serious conversation with her at this point is out of question. She is in shock. The valve needs to be fixed. Mechanical problem that needs a mechanical solution. Unfortunately, you know, it is going to be a little bit more, uh, technically demanding and this is not a straightforward AVR, probably a root replacement, and to see what her outlook looks like on the, on the addiction, uh, on the addiction level is, is not, we don't have time to talk to her. We just have to operate on her. She's too young, can't let her go.	age, time constraints, priorities, save lives
	1009	It's a challenge field and the work that you do is good work. It's meaningful. It has purpose. As a cardiothoracic surgeon, it allows you to really be one of the most complete physicians because you really have to have a good understanding medicine, physiology and critical care, in addition to doing really technical and technically challenging operations.	save lives
	1009	Mortality, is that something, or does it impact what type of valve you might give them? Surgeon: Mortality from the sense of the operation? Interviewer: Mm-hmm. Surgeon: It's something you think about. You always want to offer and operation where you think there's a mortality benefit, that they have a better chance of living with the operation than without. Sometimes, you know, questions of futility come into play but that comes into play later rather than the initial evaluation.	priorities, risk evaluation, save lives
	1009	Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication	risk evaluation, deservingness, priorities, protocol, save lives

		would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in cardiogenic shock with severe heart failure and a root abscess, they need an operation.	
	1009	In a case where if a patient had 100 percent mortality without the surgery, definitely going to die but had maybe 50 percent operative mortality, would it be worth taking the patient to the OR? What's your risk calculation on that? Surgeon: What's the reason we're going? Is it recurrent endocarditis from injection drug abuse or is it just any patient? Interviewer: Let's say any patient for now. Surgeon: If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	risk evaluation, perception of risk in PWID, multiple surgeries, stigma , save lives, reinfection, futility, relapse
	1001	I always wanted to be a surgeon. This is my [childhood]. I got to know the surgery because one of my uncles happened to be a general surgeon. So I got to know the practice very early on. Later on, by reading the books and watching TV, I was very impressed by the surgeons – their technical skills, their willingness to save people's lives. So that was the main drive to get me into the medical school. I knew I was planning to be a surgeon on my first day entering medical school, and I followed that dream until now.	save lives
	1001	Yeah, I think ever surgeon has experience with endocarditis, because it's endemic. Usually when somebody is a first-timer having endocarditis, regardless of the extensiveness, if we believe there is indication for surgery – for example, there's something like a surgical disease at this point. Unless the patient has multiple organ failure – that it's not compatible with the life at that moment – we will withhold the surgery, given the high mortality. Otherwise if the patient is an operative candidate, then we believe surgery will be indicated, but that will require an extensive conversation with the patient and	medical model, risk evaluation, save lives, rationalization (secondary)

		the family, just because the etiology is different from other patient populations.	
screening for ID			
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID
	1010	t is definitely crosses my mind. I think about, I get stuck once or twice a week in the operating room. Um. And I am not just saying take my glove off and you know having blood on my fingers, which happens probably every case or every other case, every day. but I am talking about ouch a real stick, let's just say once every two weeks. You always think that it is more often but when you think about with a clear mind, but it is definitely twice a month. Um so, two of these have been documented hepatitis C where I went through employee health, and um, get tested, then retested, then tested again, I forget at 6 months or 1 year, uh, and a it put my life at home on hold, I am sure you know what I mean and also once I remember I was walking with my son who was 3 or 4 at the time and I was holding his hand and he gave me a piece of some toy or something that had a piece of plastic and I didn't realize it had given me a papercut and then I had blood, and it was during the time I was being tested during the 6 months, and I went to hold his hand and I felt something wet and I realized it was my blood, and I saw blood	infection risk to surgeons, screening for ID, protocol

		on his hand too and I uh that hit home. I try to hold back when I describe the story, but that was hard. I am negative, I never converted, but I think I would be foolish if I didn't think about it operating.	
	1013	Do they have different complications? Uh, so they may have complications related to liver disease, so uh, its not infrequent for them also to have hepatitis C so they may have some element of cirrhosis associated with that, obviously, peri-operative pain management is more challenging but other than that I don't think so.	screening for ID, pain management, post-operation care
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	follow-up care, multidisciplinary group, changes over time, second chance, accountability, screening for ID, commitment to recovery, relapse
	1009	Interviewer: Do you ever worry about getting a viral infection like HIV or hep C? Surgeon: Sure. But we worry about that with any patient. I think it – by nature of the work that we do, we're dealing with sharp edges from bones, sharp instruments, needle sticks and things are common in the operating room and they're far more common than reported because to be honest, you know, most of the time when surgeons get stuck with something they just keep moving on. They don't go to occupational health. It's just – there's a lot of needles and things that are passed around. And so is it a concern, yes. But it's kind of a concern with any patient.	infection risk to surgeons, screening for ID

	1011	Now the, you know, the, I don't know what the circumstances are, or what the data shows that uh, what the data shows in terms of incidence of hepatitis C or HIV in patients who use drugs verses patients who don't use drugs but you think that they share some of the same risk factors for transmission, needles, and you know whatever. So, when we see a patient with injection drug abuse, we screen them, but I would be worried about getting hepatitis C in the same way that I would for a drug abuse patient than I would be for someone else who has hepatitis C for an unrelated reason. I think that is something that we ask the staff to be careful about as well because these are sharps that we are going to be handling, we are going to be dealing with bodily fluids, not only operating but perioperatively in the ICUs and floors pre and after the operation.	infection risk to surgeons, data, screening for ID, empathy
	1013	Do they have different complications? Uh, so they may have complications related to liver disease, so uh, its not infrequent for them also to have hepatitis C so they may have some element of cirrhosis associated with that, obviously, peri-operative pain management is more challenging but other than that I don't think so.	screening for ID, pain management
	1001	On top of that, we typically screen the patient for hep C and HIV. I think that's also what [unintelligible 00:02:14] recommends. It's basically a piece of information that we would want to have before the patients are taken to the OR.	screening for ID, protocol, risk evaluation
	1004	And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	futility, deservingness, infection risk to surgeons, stigma , screening for ID, cost
	1004	If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato. And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	cost, screening for ID, societal issue, deservingness

	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it.	collaboration with addiction medicine, deservingness, disagreements (professional), multidisciplinary group, risk evaluation, screening for ID
second chance			
	1010	t does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	age, accountability, commitment to recovery, follow-up care, second chance, paternalism, discussing addiction, post-operation care
	1019	oint is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose	liver vs heart, deservingness, second chance, stigma

		your recipients as people who are really going to take care of the organs they're going to get.	
	1019	Have you seen prosthetic valve endocarditis in people who inject drugs? Yes. OK. Tell me your thoughts about management decisions regarding these cases. If a patient… Uh, if a patient is a candidate for surgery and the operation is feasible, operate. Okay Period. Okay Point blank.	second chance, risk evaluation, priorities, multiple surgeries
	1019	omebody gets prosthetic valve endocarditis from a tooth abscess Yeah or they get prosthetic valve endocarditis because they started shooting up again, both are unfortunate for different reasons. But my job is: can I give them a chance to do better? And that's what I do.	second chance, multiple surgeries, relapse
	1019	And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient. The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	risk evaluation, tx compared to colleagues, priorities, save lives, second chance
	1008	Okay. And, so, would it impact you, and you've sort of spoken to this. But like, so, if endocarditis related to drug use, that impacts your decision to operate? Respondent: The second time around? Absolutely. Yes.	perception of risk in PWID, second chance, deservingness, multiple surgeries

	1016	I: You didn't do the initial one, so they're coming back to you and you're seeing them for the first time… S: Yeah, because they, I don't want to say turned or refused from that hospital that they went to, or they're like, I've already been at this hospital, I'm going to go to a different hospital. I: How often does that happen? S: A lot.	reinfection, frustration, transient, second chance
	1006	Interviewee: Yeah, we see them. Oh gosh, I'm trying to remember the man's name who wrote that original paper, because his data suggested maybe three strikes and you're out. That you get two chances. Well the original IV drug abuse and then one shot if you have a recurrent, a positive drug screen and prosthetic valve endocarditis. If it's early enough I've gotten even more cynical about it. If someone reinfects their valve within a year or two then I say what's the point in operating, we'll treat you as best we can medically. It is a valid option.	deservingness, second chance, medical model, reinfection, commitment to recovery, data, futility, relapse
	1006	Interviewer: What if it was five years since she last used drugs? Interviewee: Well you feel if it's a prosthetic valve infection, a little more inclined to give her a second chance	time between operations, commitment to recovery, second chance, deservingness, reinfection
	1002	Interviewer: What is your sense about how you approach these patients in this population compared to your colleagues? Do you think it's similar? Different? Respondent: Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	tx compared to colleagues, second chance, reinfection, relapse, deservingness, commitment to recovery, frustration, futility, perception of risk in PWID
	1017	There is the case of BLANK BLANK. So BLANK BLANK was a 30-year-old heroin user from the streets of BLANK who basically had endocarditis. I find him a very charming guy, so I did one valve replacement. About, oh, I don't know, 6 months later, he comes back and he now has still been using, and he promised me he'd stop. So I reoperated on him and did a homograft root replacement on him. Did great, actually. Six month later, he comes back and he's been using again, and now he's developed a big pseudoaneusrym that is a rupture of, uh, where we reconstructed him, so there's this big aneurysm. And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated	multiple surgeries, contract, perception of risk in PWID, relapse, priorities, second chance, deservingness, patient consent

		on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding. Recovered, and literally six months later I got a call that he had now infected his homograft because he's still using. So, I said, we're not going to do anything. I saw him on the OR schedule the next day, by vascular, because he had embolized some of his stuff down his leg. And they are operating on him, and I said BLANK, why are you operating on this guy? And then BLANK died at that point. Um, so that's my, my case that I will never forget about recidivism in drug users.	
	1013	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge. What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	collaboration with addiction medicine, second chance, commitment to recovery, follow-up care, timing of SUD tx
	1013	Uh, yes it does and in the scenario, that you've described probably less so – it's the first operation and um, they're in cardiogenic shock. If somebody comes back and they are not committed and they are not in shock but they have, there is a suspicion for a vegetation and so on and so forth then it is not uncommon for us to say ok let's see if we can manage this with antibiotics at least and see if you can try to demonstrate and ability to be sober. The problem is if they come back again in shock what do you do? I don't think we turn someone down for surgery just because this is their second episode so there are placed that will have a you get one shot kind of a rule but I don't believe in that, that's not right, you can imagine someone who gets a valve replacement then is sober then relapses which is pretty common, right, and with the relapse they get infected again but they were sober for two years until their mother died or something like that then they fell off the wagon, then it feels like you've got some hope if you can deal with the valve infection then they can get sober again.	save lives, deservingness, commitment to recovery, second chance, relapse

	1013	Finally, if it was 5 years since she last used drugs? Then that is the scenario I talked about earlier where I would be much more, um, feel much more positive about trying to re-operate on her. Does the time periods between episodes of endocarditis change whether you would operate? I suppose it does in that the closer, the shorter that time period the less inclined I would be to re-operate.	time between operations, commitment to recovery, second chance
	1013	Tell me about the operative risks of reoperation verses the original operation. So, um, in general terms, the operative risk of redo valve replacement the first time around is not hugely different from the operative risk from the first operation except in this scenario where you are talking about prosthetic valve endocarditis. So, if you are talking about a redo aortic valve replacement for structural valve deterioration of the valve, the valve just wore out, the operative risk is not too different between the first operation and the second operation; it's a little higher with the second operation. If you are talking about for infection though and prosthetic endocarditis the operative risk if 10-fold higher. So, its much higher risk and that is because of the complexity of getting out the old prosthesis, getting rid of all the infection and putting in, doing the reconstruction that is required to get the new valve in.	knowledge, second chance, multiple surgeries, risk evaluation, reinfection
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	follow-up care, multidisciplinary group, changes over time, second chance, accountability, screening for ID, commitment to recovery, relapse

	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone. Interviewer: Interesting. Okay. Respondent: A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	second chance, liver vs heart, save lives, support for patient, paternalism, accountability, commitment to recovery
	1003	I have to say that's a minority [of] cases. Most patients I've found have gone on and been clean for a x number of months, sometimes years, and then gone back using drugs again. Chances are I'll offer them a second operation. If I get a sense they're going to try once more to fight the disease, and hopefully overcome it. So, it's - I know – I don't have a set answer; it depends on the set of circumstances, but I have to say, more often than that, we will offer them a second operation. Provided it get - I know that they tried in the past, and I think the capacity to try again.	follow-up care, relapse, prevalence of endocarditis, multiple surgeries, second chance, accountability, empathy

	1009	Interviewer: So now I'm going to introduce a clinical vignette so in this case, Katy, is a 35-year-old woman who uses heroin via injection. She has staph aureus, [spectoremia] and aortic valve endocarditis. She's in cardiogenic shock from a severe aortic insufficiency and there's concern for an aortic root abscess. So have you had personal experience caring for a patient in a similar situation? How did you approach that case? How would you approach this kind of case? Surgeon: Yes, I have had experience caring for a patient in that situation. The patient needs an operation in the absence of some contraindication. To me that contraindication would be something physiologic. You know, have they had massive stroke. But in the absence of that, if they have – if they're in cardiogenic shock with severe heart failure and a root abscess, they need an operation.	risk evaluation, protocol, save lives, second chance
	1013	So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge.	timing of SUD tx, commitment to recovery, follow-up care, collaboration with addiction medicine, second chance
	1013	Tell me about the operative risks of reoperation verses the original operation. So, um, in general terms, the operative risk of redo valve replacement the first time around is not hugely different from the operative risk from the first operation except in this scenario where you are talking about prosthetic valve endocarditis. So, if you are talking about a redo aortic valve replacement for structural valve deterioration of the valve, the valve just wore out, the operative risk is not too different between the first operation and the second operation; it's a little higher with the second operation. If you are talking about for infection though and prosthetic endocarditis the operative risk if 10-fold higher. So, its much higher risk and that is because of the complexity of getting out the old prosthesis, getting rid of all the infection and putting in, doing the reconstruction that is required to get the new valve in.	multiple surgeries, risk evaluation, reinfection, knowledge, second chance

	1015	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I don't necessarily share that opinion in every case, but I do see the rationale in it, so…	tx compared to colleagues, deservingness, changes over time, defensive, second chance
	1001	nterviewer: Do you think the way you feel is also different from the way other physicians around the country or around the world are dealing with this issue? Respondent: It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to colleagues, multiple surgeries, futility, lack of resources, tx compared to broader, second chance
	1005	I guess I've never thought about it. I think that the liver transplant group probably has a much more stringent criteria for transplanting alcohol users than we have for operating on drug users. It certainly maybe in the future that we need to become more strict with these patients. It's not uncommon for us to get called to do a third tricuspid on a patient that keeps reusing or is actively reusing. I typically tell people one operation and that's it. If we put these people in the same population as liver transplant patients we would probably be doing less valves on endocarditis patients because their criteria are more stringent.	liver vs heart, deservingness, second chance
	1005	I think that those of us that treat endocarditis at this institution are all pretty aggressive surgeons and not shy of operations or reoperations. I think that we all, for the most part, think that patients should be adequately worked up and tuned up preoperatively, go to	tx compared to colleagues, second chance

		rehab and that they only have one chance at operation. Every now and then we'll offer a second operation, but that is extremely rare.	
	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	paternalism, deservingness, accountability, commitment to recovery, discussing addiction, frustration, futility, multiple surgeries, second chance, stigma
	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance
	1018	Does the patient's commitment to treatment impact your surgical decisions? Well I think there may be some circumstances where a defiant patient who presents with his or her second or third or fourth episode of endocarditis clearly related to recurrent substance abuse it, yes, it definitely raises my threshold for offering surgery. But, you know, when it's the first time they've come back I would still be willing to consider offering a surgical therapy, again it's not always clear whether it is recurrent substance abuse or our failure to sterilize the field that's responsible for that.	commitment to recovery, deservingness, second chance, liability of medical professionals, contract, futility, reinfection, multiple surgeries

	1018	What if it was 5 years since she last used drugs? Five years and this was a recurrent episode from reuse, yeah, she gets extra points for staying off drugs for 5 years.	time between operations, deservingness, second chance, commitment to recovery
	1012	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um. I wonder what kind of patient I am going to meet. Because they come, they sort of come in different favors. There's the sort of one that you know is kind of devastated and feels really terrible about what has happened and wants to get better and then there's one that's had this before and treated through it and it's like a revolving door and there is sort of a, you know, a spectrum of personalities and I kind of wonder which sort of patient I am about to meet.	deservingness, priorities, second chance, stigma
	1012	Finally, if it was 5 years since she last used drugs? Yeah so if it was 5 years since she last used, the suspicion would be that that is not true, but you know people can get valve infections from other routes, dental and other things, so yeah I would be more enthusiastic about operating on her in that last situation but as I said I would probably offer her a second operation no matter what the circumstance was.	time between operations, commitment to recovery, second chance, defensive, stigma
	1005	I guess I've never thought about it. I think that the liver transplant group probably has a much more stringent criteria for transplanting alcohol users than we have for operating on drug users. It certainly maybe in the future that we need to become more strict with these patients. It's not uncommon for us to get called to do a third tricuspid on a patient that keeps reusing or is actively reusing. I typically tell people one operation and that's it. If we put these people in the same population as liver transplant patients we would probably be doing less valves on endocarditis patients because their criteria are more stringent.	liver vs heart, deservingness, second chance
	1005	I think that those of us that treat endocarditis at this institution are all pretty aggressive surgeons and not shy of operations or reoperations. I think that we all, for the most part, think that patients should be adequately worked up and tuned up preoperatively, go to rehab and that they only have one chance at operation. Every now and then we'll offer a second operation, but that is extremely rare.	tx compared to colleagues, second chance

	1016	You didn't do the initial one, so they're coming back to you and you're seeing them for the first time… S: Yeah, because they, I don't want to say turned or refused from that hospital that they went to, or they're like, I've already been at this hospital, I'm going to go to a different hospital. I: How often does that happen? S: A lot. I: Really? S: I think it depends, too, on, you know, BLANK has a lot of hospitals all in one area. But we do get a lot of doctor shopping and, um, transfers.	frustration, reinfection, second chance, transient
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	commitment to recovery, discussing addiction, empathy, follow-up care, relapse, perception of risk in PWID, societal issue, second chance, support for patient
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries

		Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	
	1012	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um. I wonder what kind of patient I am going to meet. Because they come, they sort of come in different favors. There's the sort of one that you know is kind of devastated and feels really terrible about what has happened and wants to get better and then there's one that's had this before and treated through it and it's like a revolving door and there is sort of a, you know, a spectrum of personalities and I kind of wonder which sort of patient I am about to meet.	priorities, second chance
	1012	Finally, if it was 5 years since she last used drugs? Yeah so if it was 5 years since she last used, the suspicion would be that that is not true, but you know people can get valve infections from other routes, dental and other things, so yeah I would be more enthusiastic about operating on her in that last situation but as I said I would probably offer her a second operation no matter what the circumstance was.	time between operations, commitment to recovery, defensive, second chance
	1010	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Multiple times. How did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was	patient story, protocol, second chance, risk evaluation, save lives

		the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later. Looking back to prior cases like this is there anything you would change about your approach in hindsight? No.	
	1010	Does the patient's commitment to treatment impact surgical decision? And why or why not? It does not the first time. The first time I don't even think about why, how, when. I think that it does the second time. Not from a punitive standpoint, but if you tell me that someone has rotten teeth and you do an operation for endocarditis and you say listen you have to take care of your teeth and they never go to the dentist and they come back again with rotten teeth I am not sure we are doing much for them if we just keep operating without taking out the teeth. Now do you turn them down, do you turn down the second time, the third time, I don't know. Its more of a case by case decision. But I don't have red lines that I am only going to do it, well the only red line, is the first time someone shows up with a complication from drug use you you treat it as if this was a complication from rotten teeth. Because no matter what the cause is you assume that the person did not know. Not everyone with bad teeth needs an operation not everyone who shoots drugs needs an operation so I kind of categorize them the same way. But then it becomes an issue of source control and less of punitive behavior.	commitment to recovery, deservingness, second chance, frustration, futility, reinfection, relapse, risk evaluation
	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not	patient consent, contract, second chance, empathy, patient story

		the heart, it is one of their problems, it is not their main problem. That's their problem.	
	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone.	commitment to recovery, liver vs heart, deservingness, second chance
	1005	nterviewer: Some people make comparisons between valve replacements in the setting of infective endocarditis and liver transplant in the setting of alcoholism, what do you think of these examples. Is it equivalent, similar, different? Interviewee: I guess I've never thought about it. I think that the liver transplant group probably has a much more stringent criteria for transplanting alcohol users than we have for operating on drug users. It certainly maybe in the future that we need to become more strict with these patients. It's not uncommon for us to get called to do a third tricuspid on a patient that keeps reusing or is actively reusing. I typically tell people one operation and that's it. If we put these people in the same population as liver transplant patients we would probably be doing less valves on endocarditis patients because their criteria are more stringent.	multiple surgeries, liver vs heart, deservingness, second chance

	1005	Interviewer: Okay. What is your sense about your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution, what about compared to those around the country or around the world too? Interviewee: I think that those of us that treat endocarditis at this institution are all pretty aggressive surgeons and not shy of operations or reoperations. I think that we all, for the most part, think that patients should be adequately worked up and tuned up preoperatively, go to rehab and that they only have one chance at operation. Every now and then we'll offer a second operation, but that is extremely rare.	tx compared to colleagues, second chance
	1014	I remember this guy, ten years ago, he was 24-years-old, he was crying, he came in with a letter from BLANK that a bunch of surgeons signed, signed on it, and he came with his, his social worker, that those surgeons, they said, we're not going to touch him, we're not going to touch him, you know, we're done, and if you take care of him it's on your own. And, he was crying, he goes, "I have a 5-year-old, I promise." So, I did a mitral valve on him, only for him to come back a few months down the road, the valve was infected like there's no tomorrow and just didn't make it, so you feel like, whatever I do, you know, like you owe them at least one shot. Their problem is not the heart, it is one of their problems, it is not their main problem. That's their problem.	contract, reinfection, second chance, empathy, patient story, patient consent
	1014	Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions.	second chance, support for patient

	1001	It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to broader, tx compared to colleagues, second chance
	1010	Now I will introduce a clinical vignette: Katie is a 34-year-old woman who uses heroin by injection drug use. She has Staphylococcus aureus bacteremia and aortic valve endocarditis. She is in cardiogenic shock from severe aortic insufficiency and there is concern for an aortic root abscess. Have you had personal experience caring for a patient in a similar situation? Multiple times. How did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later. Looking back to prior cases like this is there anything you would change about your approach in hindsight? No.	patient story, protocol, second chance, prioritization (secondary)
	1001	It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to broader, tx compared to colleagues, second chance, rigidity (secondary)

seriousness			
	1019	Okay. Um, do people who inject drugs have different operative or postoperative mortality or complications? Well, I think their, um… their incidence of, um, valve infections, prosthetic valve infections, is much higher. Ok Um, I also think that, um, intravenous drug users, uh, are more difficult to manage from a pain perspective for fairly obvious reasons [COUGHING]. They also tend to be younger patients. So, they do, despite the fact that they have an addiction, and it can be a pretty serious thing… Um, heart function is usually pretty good and, um, they're young individuals and usually recover well from surgery, which is fortunate for them because, uh, often a lot of them need 2 or 3 surgeries.	perception of risk in PWID, age, pain management, multiple surgeries, prevalence of endocarditis, seriousness
	1019	How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that	priorities, seriousness, save lives
	1019	at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't.	pregnancy, patient consent, save lives, seriousness, priorities

	1019	Um, tell me about the oper-risks of the reoperation versus the original operation. You know, redo sternotomy. So, uh, that always imparts some risks… risks of getting into the heart and so forth. Um, xplanting the heart-…explanting the valve. This is for prosthetic valve endocarditis, right? So explanting the valve [COUGHING] usually what happens is when you take… So, by the time you get to these patients, uh, the heart's partially dehisced from the infection and the infection is grown into the annulus. And, so, when you take the… when you take the valve out, a variable portion of the annulus is destroyed and maybe even some of the myocardium. And, so, uh, it's usually, uh, not feasible just to do a re-replacement, you've got to do more. Whether it be carefully debride the whole area, patch the defects and then do a replacement on top of it… Or just proceed with a homograft root… They're difficult operations. The visibility's often bad. You know, they're challenging. They're challenging for sure.	multiple surgeries, mechanical problem, seriousness
	1019	Okay. Um, do people who inject drugs have different operative or postoperative mortality or complications? Well, I think their, um… their incidence of, um, valve infections, prosthetic valve infections, is much higher. Ok Um, I also think that, um, intravenous drug users, uh, are more difficult to manage from a pain perspective for fairly obvious reasons [COUGHING]. They also tend to be younger patients. So, they do, despite the fact that they have an addiction, and it can be a pretty serious thing… Um, heart function is usually pretty good and, um, they're young individuals and usually recover well from surgery, which is fortunate for them because, uh, often a lot of them need 2 or 3 surgeries.	perception of risk in PWID, age, pain management, seriousness, multiple surgeries, prevalence of endocarditis

	1019	Would you… would your approach change if you learned that when Katey presented with prosthetic valve endocarditis was pregnant? Injected cocaine but did not inject heroin? Or if it was five years since her last use drugs? Um, probably not. Um… you know… at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	pregnancy, patient consent, save lives, priorities, seriousness
	1019	Okay. Um, do people who inject drugs have different operative or postoperative mortality or complications? Well, I think their, um… their incidence of, um, valve infections, prosthetic valve infections, is much higher. Ok Um, I also think that, um, intravenous drug users, uh, are more difficult to manage from a pain perspective for fairly obvious reasons [COUGHING]. They also tend to be younger patients. So, they do, despite the fact that they have an addiction,	perception of risk in PWID, age, pain management, seriousness, multiple surgeries, prevalence of endocarditis

		and it can be a pretty serious thing… Um, heart function is usually pretty good and, um, they're young individuals and usually recover well from surgery, which is fortunate for them because, uh, often a lot of them need 2 or 3 surgeries.	
	1019	Would you… would your approach change if you learned that when Katey presented with prosthetic valve endocarditis was pregnant? Injected cocaine but did not inject heroin? Or if it was five years since her last use drugs? Um, probably not. Um… you know… at the end of the day, the customer is always right. So, despite the fact that you have a… someone who is injecting drugs, if they're compos mentis, uh, they have the right to make their own decisions. If Katey's pregnant and she's dying of prosthetic valve endocarditis and she tells me she doesn't want the operation because she's going to lose the child, we're not going to do the operation. But I would make sure that she understands that, uh… that she herself could pass. And that's… that's a choice she has to make. On the other hand, if she's in … she's in really bad shape, she's in extremis, she's about to die [COUGHING], um, you know, I will inform if she's able to understand and sign a consent, I will inform her that there is a very likelihood that she would lose the child by being on the bypass machine and being heparinized, but that we don't have a choice in the matter, and either she accepts it or she doesn't. And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient.	pregnancy, patient consent, save lives, priorities, seriousness
	1006	I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways,	disagreements (professional), futility, seriousness, frustration, relapse

		so what's the point of putting her through another operation.	
	1002	Respondent: How would I approach? So, preoperative evaluation – you know, how serious the cardiogenic shock is, actually. You know, if the patient is in severe shock, it just depends on if it's hemodynamic shock, or even more hemodynamic and also metabolic shock, which means if the liver is dead and the kidneys are dead, then why do we need to do the surgery? So that's one thing we need to make sure, the surgical indication about the shock.	risk evaluation, pre-operation care, priorities, seriousness
	1002	Then number two – mental status. If she's not there, then why do we need to do the surgery? Then number three, you know, maybe how bad is her lungs or other organ systems? If it's still recoverable or not – you know, if it's recoverable, then we can use the [unintelligible 00:04:07] support device. But you can think about doing some other mechanical support to see how she actually recovers from that shock status, because we don't want to bring that patient into the operating room in a really bad shape, because you don't get a great result.	risk evaluation, priorities, patient consent, futility, liability of medical professionals, seriousness
	1003	Respondent: Based on their clinical presentation, the presence of fevers, the presence of [bacteremia]; and we look at the echo images of a particular valve that's infected, to determine how badly infected the valve is, whether or not medical therapy will be sufficient or, on the other extreme, the valve is so destroyed, the patient [that's] [unintelligible 0:00:53] compromised from the valve destruction that surgery clearly is indicated. Other times, it's not so clear, it's not a black and white issue. In some cases, we're – requires clinical judgement as to whether or not surgery is indeed indicated. And then the timing is also an important issue. We need to move ahead soon, or can we afford to wait a period of time to feed them antibiotics and see how they respond.	risk evaluation, mechanical problem, seriousness, time constraints
	1003	what works to treat their pain? What hasn't worked? Respondent: Well, they all need some element of narcotics, so – and we find the intravenous medications work well in the ICU. Intravenous Fentanyl, intravenous Dilaudid. And then on the floor, the oral agents seem to work fairly well in addition. Once they get transitioned to IV and oral drugs, we use oral Dilaudid; also, Percocets. And then we'll add, often times, a	pain management, seriousness, protocol

		non-steroidal inflammatory - anti-inflammatory agents, such as Toradol, people are using Toradol. And then - some patients, [it] actually works; hard to believe, but some patients respond to Toradol. Or this patient population.	
	1003	what are some of the operative risks of reoperation, versus like, an original operation – a first-time operation? Respondent: The operation's more difficult, because you have scar tissue on the heart, and then the scar tissue on the valve. Interviewer: Okay. Respondent: So, you have to remove the valve and put a new valve in, and maybe the first time you have to go back and do it again is not that big of a deal, but the second, third, and fourth operations are truly more difficult. But even the second one is a little more difficult. And often times, when someone's got an infected prosthetic valve, there's more than meets the eye, and [after] you get in there, the infection's actually more invasive, and more of an – chance for a root abscess, or an abscess cavity, which makes the operation more difficult, technically. So yes, the second-time operation is more challenging. More often than not.	multiple surgeries, mechanical problem, seriousness
	1003	Respondent: Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive.	desired changes, risk evaluation, save lives, pre-operation care, time constraints, frustration, seriousness

	1011	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Well I guess one of the things that is easier is valve choice. The older they are the choice of putting the bioprosthetic valve rather than the mechanical becomes a little more justifiable from just a guideline perspective. It also, someone who has made it to 55, I don't know what the expected survival of folks who do drugs is, but I think, I would think that this is someone, the 25 year old would be in much worse shape than someone who is 55, because they have a long way to go if they can get there. It is going to be a much harder thing for them to clean up, I think, because I think you are in a different place in your life and different priorities and interactions and relationships that are different. I don't know what a definitive answer you are looking for, but I do think those two patients are going to be different.	age, support for patient, valve preference, stigma , seriousness
	1015	I mean there are a number of them, yeah. I: Yeah. What…does it impact your decision to operate if their endocarditis is related to drug use? S: Um…sometimes. It really depends on how hard of a reoperation I think it's going to be. I: Gotcha. S: If I think I that, um, I'm going to cause more harm by reoperating and they continue to use IV drugs, then my decision is going to be, no I'm not going to reoperate. If there is something that is potentially related to past use and can be easily fixed, of course I would offer an operation. If they are active using and reinfected their valve, and they've got something that is easily fixable, then I'd consider doing it.	mechanical problem, seriousness, multiple surgeries, commitment to recovery, reinfection, relapse
	1001	about a year later she's back in the hospital and has prosthetic valve endocarditis. Have you seen prosthetic value endocarditis in people who inject drugs? Respondent: Yeah, of course. Interviewer: Is there any specific case that stands out in your mind that you could think of, and could you tell me about it? Respondent: Yeah, I think this patient most likely would require a [homograft] in the beginning, to be honest, where [the abscess is confirmed]. And the reinfection of root abscess – a homograft in the same location – would almost mean 100-percent mortality, to be	multiple surgeries, risk evaluation, seriousness, follow-up care

		honest. [Off-mic] So technically very difficult to treat, but certainly everybody is different.	
	1001	Interviewer: If a patient has 100-percent risk of mortality without surgery but a 50-percent risk of operative mortality with operation, do you think it's worth taking the patient to the OR? Respondent: If it's 100 percent, [then it is now], but it's hard. Sometimes we think patients are inoperable. It doesn't mean that the patient cannot – that the operative mortality will be 100 percent. It's hard. To be honest, if somebody has multiple-organ failure, than the surgery will be contraindicated. They cannot even survive anesthesia. So it's a different story. But a lot of people are [deemed] inoperable, not just based on the operative mortality itself. You know, it's related to other issues. Sometimes we take into consideration even the social issues – you know, the lifestyle or the age, for example. Interviewer: All calculated into the preoperative risk? Respondent: Right, yeah.	risk evaluation, societal issue, futility, pre-operation care, seriousness
	1018	Do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? No. Does age impact your decision at all to operate? Yes in the extremes. You know a 90-year-old with terrible ventricular function, coronary disease, stroke, no I wouldn't but it's not really because of the cause of the endocarditis, it's just an assessment of all risk factors.	age, futility, seriousness
	1012	Tell me your thoughts about management decisions in these cases So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally	medical model, seriousness, multiple surgeries, risk evaluation, stigma

		you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up, and now you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again,	
	1012	you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not. And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness. And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? I	stigma , seriousness, relapse, reinfection, accountability, deservingness, follow-up care, multiple surgeries, futility, lack of resources
	1012	Tell me your thoughts about management decisions in these cases So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up, and now you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not.	frustration, futility, seriousness, stigma , risk evaluation, relapse

	1014	S: Um, not really, I mean, not really, you have to, those are, so…maybe, we should talk about this a little bit earlier, but there is more than one valve that can get infected. The aortic valve clearly is a mechanical problem, and they could die, I mean, she has wide open AR, her ventricle is not tolerating that, and she needs to go. Mitral valve, sometimes is the same. Tricuspid, on the other hand, is a different ball game. The tricuspid valve, I rarely operate on those patients in the acute setting because they can tolerate, particularly younger people, they can tolerate severe tricuspid regurgitation, you know. Hemodynamics rarely, they're hemodynamically stable unless they are in septic shock, which is even more of a cause, of a reason not to operate on them, to get them through the antibiotics, if they embolize it goes to the lung so we can always treat it, even if they develop an abscess, so those patients we can see them in a nonacute setting and will take it from there. But, unfortunately, the left-sided valves, the mitral, the tricuspid (TRANSCRIPTION NOTE: ERROR? SUBJECT LIKELY MEANT AORTIC BASED ON EMPHASIS ON LEFT-SIDED VALVES REQUIRING MORE URGENT INTERVENTIONS.), they usually present, their presentation like this, and your hands, you have to operate on them.	age, mechanical problem, seriousness, knowledge
	1014	S: Yeah, I remember, I did not operate on them the first time around, one of, one of our my partners did. And, you know, and sometimes, those initial operations are horrendous, just absolutely horrendous, because the abscess was in the middle of the heart, and, you know, the, you know, the fibrous trigone of the heart, the fibrous skeleton of the heart, and the reconstruction, you, I, you read the operative report, and you are like, wow, that was a very difficult case, and, you know, now they come back infected, and you're like, I have to go back in and put this back, and sometimes you're like, it dawns upon you, that this thing is just not doable. And, um, I remember one patient, she was young, she was in her early forties, that we all turned her down, we said you are not operable, in your initial operation you almost died. And, we kept her on antibiotics, and she was sent to hospice. That was not a good feeling. That was not a good feeling for a million reasons. You know, because futility is hovering over your head, what am I doing, you know it is going to be a difficult case, you know she failed in her, you know, she reused once already, likely she is going to do it again. Why do I have to get her	patient story, frustration, futility, multiple surgeries, seriousness

		through a big operation and go back to square one down the road? When is enough? When enough is enough?	
	1014	So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very calcified, taking them off, and putting it, is it doable, absolutely, but is it fraught with problems, absolutely. All the scar tissue comes in, you know, on top of the scar tissue that comes in from regular operations. So, clearly, it gets worse.	paternalism, tx compared to colleagues, multiple surgeries, risk evaluation, seriousness
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	1005	Interviewer: What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for a valve replacement? Interviewee: The first thoughts I consider are what preop studies have been done on the patient and what their current clinical status is. Interviewer: Do people who inject drugs have a different operative and postoperative mortality? Interviewee: I think not necessarily in our practice, it just depends on the status of the patient preoperatively and how many valves are infected—affected.	risk evaluation, pre-operation care, seriousness, data
	1014	Looking back, is there anything different that you would change about your approach? S: Um, not really, I mean, not really, you have to, those are, so…maybe, we should talk about this a little bit earlier, but there is more than one valve that can get infected. The aortic valve clearly is a mechanical problem, and they could die, I mean, she has wide open AR, her ventricle is not tolerating that, and she needs to go. Mitral valve, sometimes is the same. Tricuspid, on the other hand, is a different ball game. The tricuspid valve, I rarely operate on those patients in the acute setting because they can tolerate, particularly younger people, they can tolerate severe tricuspid regurgitation, you know. Hemodynamics rarely, they're hemodynamically stable unless they are in septic shock, which is even more of a cause, of a reason not to operate on them, to get them through the antibiotics, if they embolize it goes to the lung so we can always treat it, even if they develop an abscess, so those patients we can see them in a nonacute	knowledge, seriousness, age, mechanical problem

		setting and will take it from there. But, unfortunately, the left-sided valves, the mitral, the tricuspid (TRANSCRIPTION NOTE: ERROR? SUBJECT LIKELY MEANT AORTIC BASED ON EMPHASIS ON LEFT-SIDED VALVES REQUIRING MORE URGENT INTERVENTIONS.), they usually present, their presentation like this, and your hands, you have to operate on them.	
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	1014	I: Right. Um, ok, great. So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know,	risk evaluation, seriousness, paternalism, tx compared to colleagues, multiple surgeries

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	1014	I: Um, yeah, this kind of goes with that, but… If a patient has 100% mortality without surgery and a 50% operative mortality with an operation, do you think it is worth taking the patient to the OR? S: It's never, the, it's a theoretical, that's it. Theoretical, just never, it's never, never, and again. Very unlikely scenario, uh, because A) we don't know, and B) yes, so 100% mortality, somebody like Katie, you know, she is in cardiogenic shock, yes, she is going to die. But I don't think her initial risk is 50%. And you know, there is always something you can do for those patients, you know. But sometimes, again, the decision-making is, is a little more complicated then, it is not binary, lets put it this way.	risk evaluation, seriousness
	1014	I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they	multidisciplinary group, follow-up care, regional differences, seriousness, insurance, lack of resources

		come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that.	
SES			
	1019	Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium,	cost, age, societal issue, PICC line risk, SES
	1019	You know. Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically	PICC line risk, support for patient, risk evaluation, SES, cost, insurance

		alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	
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		they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	
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	1019	Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	cost, insurance, SES, follow-up care, support for patient, PICC line risk
	1016	I: Ok. Does anything specific help you choose, like the patient's housing, insurance, job status, child care? S: Um, do you mean in terms of leaving with a PICC line or… I: Yeah, like if whether they stay in the hospital, whether they go home, whether they go to a long-term care facility? S: Truthfully, um, I would say, no. Um, and the reason being is, if you're sick, I'm going to give you the care that you need to get through your illness. I understand there's a lot of social factors that get involved, but to me, these are very high risk patients, um, and there's a chance for, again, a lot of misuse of PICC lines, um, and I think that, um, you know, as much as you empathize with the needs for child care and all these other things, um, I feel like I still have to deliver the appropriate level of medical care.	SES, deservingness, PICC line risk
	1003	And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem.	SES, commitment to recovery, support for patient, patient story, empathy

	1015	: Ok. So…I'm going to list three options for Katie. A PICC line and going home, a PICC line and staying in the hospital, and a PICC line and going to a nursing facility. Which of those do you feel is the safest option? S: Uh…well, up until I started here, I thought a PICC line and staying in the hospital, but I've sent a number of patients to nursing facilities for monitored antibiotics and I think that is perfectly fine. I: Any specific things help you choose, like housing, insurance, job status, or anything like that? S: No. Availability, that's it.	PICC line risk, follow-up care, lack of resources, SES
	1016	Does anything specific help you choose, like the patient's housing, insurance, job status, child care? S: Um, do you mean in terms of leaving with a PICC line or… I: Yeah, like if whether they stay in the hospital, whether they go home, whether they go to a long-term care facility? S: Truthfully, um, I would say, no. Um, and the reason being is, if you're sick, I'm going to give you the care that you need to get through your illness. I understand there's a lot of social factors that get involved, but to me, these are very high risk patients, um, and there's a chance for, again, a lot of misuse of PICC lines, um, and I think that, um, you know, as much as you empathize with the needs for child care and all these other things, um, I feel like I still have to deliver the appropriate level of medical care	PICC line risk, SES, deservingness
	1015	I: Any specific things help you choose, like housing, insurance, job status, or anything like that? S: No. Availability, that's it.	SES

	1014	I: Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions. How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that. Am I confusing you?	second chances, deservingness, support for patient, SUD treatment, insurance, risk evaluation, SES
	1014	Those are real-life experiences that, that, you shake your head, and I'm like, really, Mr. Trust Fund, will operate on him twice or three times, and the guy coming from under the bridge doesn't deserve it? Maybe, this guy is more…you know...	SES, deservingness

	1014	Those are real-life experiences that, that, you shake your head, and I'm like, really, Mr. Trust Fund, will operate on him twice or three times, and the guy coming from under the bridge doesn't deserve it? Maybe, this guy is more…you know...	SES, deservingness, rationalization (secondary)
	1014	How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that.	support for patient, deservingness, insurance, SUD treatment, risk evaluation, SES
	1014	Those are real-life experiences that, that, you shake your head, and I'm like, really, Mr. Trust Fund, will operate on him twice or three times, and the guy coming from under the bridge doesn't deserve it? Maybe, this guy is more…you know...	SES, deservingness
societal issue			

	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in	multidisciplinary group, futility, desired changes, follow-up care, societal issue

		house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	support for patient, patient story, discussing addiction, stigma , societal issue, empathy
	1010	Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar.	societal issue, SUD treatment, accountability, support for patient, collaboration with addiction medicine
	1019	Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6	cost, age, societal issue, PICC line risk, SES

		weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium,	
	1008	Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school.	societal issue, deservingness, frustration, accountability
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	follow-up care, support for patient, societal issue, administration, tx compared to broader
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, risk evaluation, societal issue
	1018	I have had friends, good friends suffer this, none with endocarditis, but I have seen what it did to their lives and maybe that is why I have a slightly different perspective on it. No one in my family has had that or endocarditis, so that is the personal side of it.	patient story, societal issue, empathy

	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good.	support for surgeons, changes over time, follow-up care, PICC line risk, administration, collaboration with addiction medicine, futility, societal issue
	1006	Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	desired changes, societal issue, stigma , futility, frustration

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle	tx compared to broader, tx compared to colleagues, frustration, deservingness, empathy, societal issue

	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	societal issue, desired changes, lack of resources, SUD treatment, changes over time, prevalence of endocarditis, protocol
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	desired changes, SUD treatment, societal issue, medical model, support for patient, changes over time, follow-up care
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful	multidisciplinary group, support for patient, societal issue, lack of resources, futility, desired changes, follow-up care

		environment without a whole lot of support they'll probably fall back in the same way of behaving	
	1007	Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect because it's not, it's not so much a surgical…	support for surgeons, cost, data, societal issue, lack of resources
	1007	What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	support for patient, protocol, lack of resources, societal issue, tx compared to broader, perception of risk in PWID
	1007	Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were	collaboration with addiction medicine, knowledge, discussing addiction, societal issue

		surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	
	1007	o you think the treatment for endocarditis in people who inject drugs will change in the future? Speaker 2: Yes. Speaker 1: Are there any changes you would like to see? Speaker 2: More social support. That's where the need is.	support for patient, societal issue
	1013	ome people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I don't think it is a very good parallel. I think, for a bunch of reasons, one is actually maybe the opposite of what one might be thinking. For liver transplant, you are thinking about a scarce resource so I actually think it is harder to defend using a scarce resource in a situation where someone may or may not have recovered from their alcoholism. If they are still using alcohol then I think it is hard to defend doing a liver transplant when it's a scarce resource but we have plenty of valves on the shelf, that's not the issue. So, I don't think it is a great parallel. Now if people want to say its related to, that the parallel has to do with behaviors then I would say a lot of diseases that we treat are related to our behaviors whether its obesity, diabetes which leads to coronary artery disease which we treat all the time, or smoking which leads to coronary artery disease which we treat all of the time I mean a lot of conditions that adults get there are behavioral factors that contribute, so I don't think that's a legitimate criticism.	liver vs heart, deservingness, empathy, societal issue, support for patient

	1003	And what do you think about like, drug rehab? Do you think it's different – is it different than drug detox? Do you think it's - Respondent: Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	stigma , societal issue, timing of SUD tx, multidisciplinary group, medical model, regional differences, follow-up care, changes over time, support for patient
	1009	Interviewer: How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	disagreements (professional), accountability, desired changes, societal issue, support for patient

	1009	Interviewer: Do you think that treatment for endocarditis and people who inject drugs will change in the future? Surgeon: In terms of surgical management? Or? Interviewer: Yeah. Surgeon: No. I think the operations are pretty standard. In the absence of new antibiotics that are much more effective, I think it's still going to be the same. I think you operate on patients with heart failure and mechanical complications. Interviewer: What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	changes over time, desired changes, societal issue, accountability, stigma
	1013	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I don't think it is a very good parallel. I think, for a bunch of reasons, one is actually maybe the opposite of what one might be thinking. For liver transplant, you are thinking about a scarce resource so I actually think it is harder to defend using a scarce resource in a situation where someone may or may not have recovered from their alcoholism. If they are still using alcohol then I think it is hard to defend doing a liver transplant when it's a scarce resource but we have plenty of valves	liver vs heart, support for patient, societal issue, deservingness, empathy

		on the shelf, that's not the issue. So, I don't think it is a great parallel. Now if people want to say its related to, that the parallel has to do with behaviors then I would say a lot of diseases that we treat are related to our behaviors whether its obesity, diabetes which leads to coronary artery disease which we treat all the time, or smoking which leads to coronary artery disease which we treat all of the time I mean a lot of conditions that adults get there are behavioral factors that contribute, so I don't think that's a legitimate criticism.	
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	insurance, societal issue, desired changes, cost, SUD treatment
	1015	Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Um, it is hard to predict, but maybe, just like everything else in medicine. I: Are there any changes that you want to see? S: Uh, I think honestly the change is going to start not with, uh, the disease, it's going to start with the disease of IV drug use and opioid use. It's not going to, I don't think the change is going to come from people who have already been infected. I: Who do you think need to make the changes in the treatment for…? S: I think it is a public health problem. I don't, the change can come from doctors, but I think the changes need to come from the companies that, um, promote this kind of behavior. Or, not, I shouldn't say that, promote, easy, um, access to opioids. I: And how much time do you think is needed for these changes? S: Oh, at least, uh, one generation. At least one generation.	changes over time, desired changes, societal issue, discussing addiction

	1007	Speaker 1: Do they have different operative and post-operative mortality complications compared to other patients? Speaker 2: Yes. Speaker 1: Okay… Um, can you please tell me my about that? Speaker 2: So, I mean, every patient is individual, but there are trends. A lot of these patients tend to be younger, so in some ways a healthier, which is what we're trying to assess, is the risk of surgery benefit. On the other hand, some social issues make them higher risk.	risk evaluation, societal issue, follow-up care
	1007	Speaker 1: Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, follow-up care, patient consent, post-operation care, risk evaluation, societal issue
	1007	Speaker 1: Yeah. Thank you. So is there someone you can call in the hospital with addiction medicine expertise? Speaker 2: Absolutely. I mean, at our hospital, very… probably the best in the city for addiction. So it's good to be working carefully with them. Speaker 1: Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect	support for surgeons, societal issue, lack of resources

		because it's not, it's not so much a surgical… Speaker 1: Okay. So I had asked you about suggestions for the hospital to improve. Speaker 2: Support? Speaker 1: Yea, support Speaker 2: What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	
	1007	Speaker 1: Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	SUD treatment, collaboration with addiction medicine, discussing addiction, societal issue
	1007	Speaker 1: All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox.	SUD treatment, knowledge, collaboration with addiction medicine, societal issue

		Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	
	1007	Speaker 1: Okay. Thank you. So how should these patients with opioid use disorder, so Katie, how should she be treated and when do you think you would be appropriate for her to be treated? Speaker 2: Treated surgically or … Speaker 1: Treated surgically Speaker 2: So surgically. Um, she's toward the end of the spectrum that needs surgery very soon because of her aortic insufficiency, which is in the acute phase, its poorly tolerated. So she's somebody that would probably need surgery sooner than later, would need some medical optimization in an ICU setting. Um, probably would need some reformed social addiction medicine engagement early on. But it's, it's not going to do much at this point and it's more for the recovery and future.	patient story, pre-operation care, societal issue
	1007	Speaker 1: Okay. Thank you. Um, do you think the treatment for endocarditis in people who inject drugs will change in the future? Speaker 2: Yes. Speaker 1: Are there any changes you would like to see? Speaker 2: More social support. That's where the need is.	changes over time, societal issue
	1001	Interviewer: Is there someone you can call in the hospital with addiction medicine expertise? Respondent: Yeah, there is I think a service now. I think this is recently established. I haven't had much experience working with this group of professionals here yet, but I'm happy to work with them if there is such opportunity. This group of patients represents a challenging patient population, I think not just from the medical standpoint. There is also a lot of ethic issues and social issues involved. So I feel there should be a team taking care of these patients.	collaboration with addiction medicine, multidisciplinary group, societal issue, follow-up care

	1001	nterviewer: Okay, is there anyway you think the hospital could support you more? Or you feel quite supported? Respondent: I wouldn't say – I think [unintelligible 00:14:13]. We've been waiting to take on the [tough] cases, the patients who are not covered. Certainly this is not just our problem; this is society's issue. It's going to be the focus. I don't think there's anything that could be done better so far.	support for surgeons, societal issue
	1001	Interviewer: For Katy, do you think her opiate use disorder should be treated? Respondent: I believe so. I think drug use is not just a social issue. It is a disease, you know? I don't know if there is currently a definition for that, but that's just my personal opinion. I think they should be fairly treated, offered all the options, and carefully monitored with follow-up. It's a complex medical issue, not just a social issue.	SUD treatment, societal issue, empathy, deservingness, support for patient, follow-up care
	1001	Given the circumstances now, endocarditis is just pandemic, affecting the financial conditions and socioeconomics. It's difficult. I think that society cannot afford having this patient again and again, multiple times – and whether [unintelligible 00:24:55]. To me, even though we would [choose to save people's lives], there are certain limits to something we can do. But again, that requires a discussion between the healthcare professionals, not just the surgeons. It should be based on the studies or a recommendation from the society and/or the medical society, not just the surgical society.	prevalence of endocarditis, societal issue, multiple surgeries, cost, data, deservingness, save lives
	1001	Interviewer: Actually along that line of thinking, do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? Respondent: I [don't]. Yeah, I mean, certainly in terms of their decision-making it's the same, but the operative approach may be a little bit different in anticipation of a different life expectancy regarding the valve choice and their social background. You know, everybody is different, so there will be a difference between taking care of each individual patient.	age, societal issue, valve preference

	1001	Interviewer: If a patient has 100-percent risk of mortality without surgery but a 50-percent risk of operative mortality with operation, do you think it's worth taking the patient to the OR? Respondent: If it's 100 percent, [then it is now], but it's hard. Sometimes we think patients are inoperable. It doesn't mean that the patient cannot – that the operative mortality will be 100 percent. It's hard. To be honest, if somebody has multiple-organ failure, than the surgery will be contraindicated. They cannot even survive anesthesia. So it's a different story. But a lot of people are [deemed] inoperable, not just based on the operative mortality itself. You know, it's related to other issues. Sometimes we take into consideration even the social issues – you know, the lifestyle or the age, for example. Interviewer: All calculated into the preoperative risk? Respondent: Right, yeah.	risk evaluation, societal issue, futility, pre-operation care, seriousness
	1004	R: If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato.	insurance, cost, societal issue, accountability, tx compared to broader
	1008	Interviewer: Yeah. What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	societal issue, insurance, paternalism, commitment to recovery, relapse
	1007	Speaker 1: Okay. Thank you. Um, do you think the treatment for endocarditis in people who inject drugs will change in the future? Speaker 2: Yes. Speaker 1: Are there any changes you would like to see? Speaker 2: More social support. That's where the need is.	changes over time, societal issue, responsibility (secondary), SUD (secondary)

	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	tx compared to broader, follow-up care, administration, societal issue
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, perception of risk in PWID, societal issue
	1018	And to close, is there anything I haven't asked you about today that you would like to say? I have had friends, good friends suffer this, none with endocarditis, but I have seen what it did to their lives and maybe that is why I have a slightly different perspective on it. No one in my family has had that or endocarditis, so that is the personal side of it.	patient story, empathy, support for patient, societal issue
	1012	The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	accountability, societal issue, lack of knowledge, support for patient, empathy, follow-up care, lack of resources

	1012	ave you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	empathy, discussing addiction, support for patient, training, mechanical problem, societal issue, save lives
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	administration, cost, accountability, insurance, support for patient, support for surgeons, SUD treatment, follow-up care, societal issue
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the	follow-up care, support for patient, societal issue, administration, tx compared to broader

		inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	
	1018	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think there is a similarity absolutely, both are addictions, both take tremendous tolls on patient's families and the continued behaviors place the whether the liver or the transplanted valve, it's the same, the transplant is under risk because of their continued behaviors.	liver vs heart, deservingness, risk evaluation, societal issue
	1018	I have had friends, good friends suffer this, none with endocarditis, but I have seen what it did to their lives and maybe that is why I have a slightly different perspective on it. No one in my family has had that or endocarditis, so that is the personal side of it.	patient story, societal issue, empathy
	1004	If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato. And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	cost, screening for ID, societal issue, deservingness
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	commitment to recovery, discussing addiction, empathy, follow-up care, relapse, perception of risk in PWID, societal issue, second chance, support for patient

	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	discussing addiction, commitment to recovery, follow-up care, frustration, patient story, priorities, risk evaluation, societal issue, SUD treatment
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons

		area it would be good, then they would undoubtedly spring up another block away, so.	
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries

	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	changes over time, lack of resources, prevalence of endocarditis, protocol, societal issue
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving.	multidisciplinary group, futility, desired changes, follow-up care, societal issue
	1012	e don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible	societal issue, lack of resources
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that	support for surgeons, administration, cost, accountability, support for patient, insurance, societal issue

		makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	
	1015	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Um, it is hard to predict, but maybe, just like everything else in medicine. I: Are there any changes that you want to see? S: Uh, I think honestly the change is going to start not with, uh, the disease, it's going to start with the disease of IV drug use and opioid use. It's not going to, I don't think the change is going to come from people who have already been infected. I: Who do you think need to make the changes in the treatment for…? S: I think it is a public health problem. I don't, the change can come from doctors, but I think the changes need to come from the companies that, um, promote this kind of behavior. Or, not, I shouldn't say that, promote, easy, um, access to opioids. I: And how much time do you think is needed for these changes? S: Oh, at least, uh, one generation. At least one generation.	desired changes, discussing addiction, changes over time, societal issue
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people	discussing addiction, empathy, patient story, stigma , societal issue

		will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	
	1010	What do you think about drug rehab? Do you have thoughts on drug rehab? Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar. How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service. And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	SUD treatment, accountability, societal issue, support for patient, collaboration with addiction medicine
	1014	S: No, I'm glad somebody…I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong	societal issue, insurance, follow-up care, regional differences, multidisciplinary group

		management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that. We don't, we don't.	
	1011	Does it impact what type of valve, for example mechanical or bioprosthetic valve? So, the data, um, there is no separate data on that, but it is a very interesting question that comes up every time. And personally, it does impact decision making. I do feel that these patients are in a very vulnerable situation, they have a lot of stresses going on in their life, and there is a lot that they have to figure out, especially someone who comes in who was actively using drugs at the time of their intervention, and the idea that they are going to go through this big operation, they are going to clean themselves up right away is sometimes too much to ask of them. It is not uncommon, I think for us to see some relapses before the patient eventually can fully quit. And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little anticoagulation and the valve becomes thrombosed, that's a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure themselves then that has a problem as well. So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix	risk evaluation, data, societal issue, relapse, protocol

		that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	
	1011	What do you think about these options? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Most of the times I think I would favor the PICC line and go to the nursing facility. Some of that is made out of pragmatism, being watchful, we end up canceling cases because we don't have enough ICU beds, or OR beds or hospital beds or whatever that is. You know one way we seem like we just want to do more cases, but we see that as those are real patients who need to be taken care of and if we keep someone in the hospital that doesn't need to be in the hospital then that is blocking someone else's care. And this is not necessarily you know the rationing of care, but it is sometimes just the appropriate use of care. So, I think that keeping them in the hospital for 6 weeks with a PICC line just to give them antibiotics I think is not the most optimal system that we have. And maybe that is where going back to your previous question, maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the time. It's not like these patients are going back to their families, their grandparents, or an	PICC line risk, cost, deservingness, societal issue

		aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own police I think is a little too much to ask of them.	
	1003	Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	changes over time, support for patient, SUD treatment, stigma , societal issue, collaboration with addiction medicine, multidisciplinary group

	1014	S: No, I'm glad somebody…I don't have time for this, honestly. I'm busy, but when I saw the email that BLANK sent, I wanted to make time for this, and I'm glad, at least there's a big…there's a hope. It's a problem, it's a big, big, big problem, especially in middle America, especially in the Midwest, especially in the South. It's eating our children, and, and, and we need, we need, we are, again, heart surgeons. We're the least equipped people to deal with this big problem. We just come in because we have a knife and we're trying to fix a terminal problem these patients have. We do a good job at it, we get them through, but we, by far, we haven't cured them. Their cure is, is needed. Their management, it is a lifelong management, and, if I operate on any patient, who is not infective endocarditis, IV drug abuser, I see him once post-op and I'm done, and they go to their cardiologist. Do you understand? Even with my own patients that I operate on them, they go to hell and back with me, you know, and, and, and might stay in the hospital for six weeks, they go home, they go to rehab, and they come back, I see them once and they go back to their cardiologist who follows them long-term. You know? Can you imagine? Just once. This is what their insurance, you know, allows them. Just one as a postoperative follow up, look at the wound, hey how are you doing, goodbye, check their blood pressures, and off you go to your cardiologist who follows them long-term. Can you imagine with the, with the endocarditis, those are the patients who are absolutely need long-term follow-up, and this is something that we do, we just cannot afford, we don't, we don't provide that. We don't, we don't.	societal issue, insurance, follow-up care, regional differences, multidisciplinary group
	1014	: Gotcha. Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Good question. The initial treatment, probably not. But afterwards, I hope it does. Because that would minimize recurrence. Again, recidivism is what kills them. I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data. I: How much time do you think is needed for these changes? S: I mean, we needed them five years ago. I: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do	desired changes, multidisciplinary group, protocol, time constraints, discussing addiction, societal issue

		this? S: On and off. I: Do you think it's helpful?	
	1001	I [don't]. Yeah, I mean, certainly in terms of their decision-making it's the same, but the operative approach may be a little bit different in anticipation of a different life expectancy regarding the valve choice and their social background. You know, everybody is different, so there will be a difference between taking care of each individual patient.	age, societal issue
	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility

		to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	Do some people make comparisons between valve endocarditis and valve replacements in the setting of endocarditis and liver transplant? Like the setting of alcoholism? What are your thoughts on that kind of comparison? Surgeon: It's a fair comparison. I mean, the liver is more scarce than a bioprosthetic valve. It's a fair comparison. I mean, you're not retransplanting patients who are actively drinking, right? You shouldn't be. You're not transplanting patients who are actively drinking in the first place. Whereas, the bar is a little lower for valve replacement because the resource is not as scarce in terms of the physical valve. Obviously, when you step back and think about the overall cost, you know, there is not an infinite amount of money in healthcare, right? And so when you think about it from that perspective, yes, this is a finite resource that's being used because these are very labor intensive and costly cases, you know, for the hospital. Oftentimes, you know, for us it doesn't matter. We never take into account insurance status or anything like that. If the patient needs an operation then they get an operation. But from a systemwide perspective, when you think about it, it is limited resources. So in that sense I guess it's a fair comparison.	cost, liver vs heart, commitment to recovery, societal issue, lack of resources, insurance

	1009	How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	disagreements (professional), accountability, frustration, multidisciplinary group, follow-up care, societal issue, desired changes
stigma			
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	support for patient, patient story, discussing addiction, stigma , societal issue, empathy

	1010	I think it is not a good comparison because we do valve surgery in the setting of active use. I think I don't believe they don't do liver transplants in the setting of active alcohol abuse. I may be wrong. I know what I said about us is true, and I am pretty sure they don't do liver transplants for patients who abuse alcohol. So again, I don't think that is a punitive issue I think it is if you don't think that what you do is going to help there is no reason to do it or you should treat the underlying issue first and then do the liver transplant. I don't think that comparison is a very good one because in the case of the liver there is another person waiting for it that doesn't drink, who by definition should be higher on the list than someone who drinks. We don't have that issue there are plenty of valves on the shelves. So even if you put one in and it goes to waste, the person went home and shot heroin, it's a piece of metal, an expensive piece of metal, but still a piece of metal. Its not an organ that could save someone else's life. I'm not sure, it's a decent comparison but not a 100% comparison.	liver vs heart, deservingness, stigma , reinfection, lack of resources, risk evaluation
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	pregnancy, multidisciplinary group, risk evaluation, stigma , frustration, deservingness
	1019	Does this patient's commitment to treatment impact your surgical decisions? No. Absolutely not. That's not for me to judge.	commitment to recovery, deservingness, stigma
	1019	So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to	liver vs heart, accountability, commitment to recovery, deservingness, futility, stigma

		cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis	
	1019	oint is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going to take care of the organs they're going to get.	liver vs heart, deservingness, second chance, stigma

	1019	OK. So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis Right because we have thousands of bioprostheses on the shelf. Um, not thousands maybe tens of… tens of… maybe a hundred, I don't know. [LAUGHTER] I don't know how many we have on shelf. But, we have lots. Right Point is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going	liver vs heart, commitment to recovery, futility, accountability, stigma

		to take care of the organs they’re going to get.	
	1008	nterviewer: Okay. And do you ever worry about getting viral infections, like hep C or HIV? Respondent: I worry about that with everybody. Not so much more with somebody that's a drug abuser. I think it's more common. I don't think I'm any more careful. I'm aware that ---- that the risk is great. But I don't think I really treat anybody differently.	infection risk to surgeons, stigma

	1008	What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, multiple surgeries, risk evaluation, stigma , frustration, futility, paternalism
	1008	Okay. Okay. And then what about like age? So, if a 25-year-old with prosthetic valve endocarditis, would you look at that person differently than someone who's 55 and had prosthetic valve endocarditis? Respondent: Unless they're really elderly, I don't think that would have much impact. Interviewer: Okay. And if they were elderly? Respondent: Well, we're talking about drug addicts or? Interviewer: Yeah, I think so, in this case. Respondent: Age doesn't matter. There aren't too many 80-year-old drug addicts. There's some 50-year-old but they usually die when they're 30, 40	age, stigma , deservingness, futility

	1008	Does it impact -- does age impact your -- the type of valve you might give someone? Respondent: Yeah. If they're 20 or 30 or 40, I would put in a mechanical valve. If they're above the age of 50 and a drug addict, I would definitely put in a tissue valve. Interviewer: Why? Respondent: Because there is risk of the valve clotting off if you don't take your Coumadin. And drug addicts tend to very unreliable people. On the other hand, you don't want the valve to wear out, a biological valve out. So, you have to do it again in 10 or 15 years. So, with the younger patients, I would put in a mechanical valve.	stigma , multiple surgeries, age, perception of risk in PWID, valve preference
	1008	So, with the younger patients, I would put in a mechanical valve. Interviewer: They last longer? Respondent: Huh? Interviewer: They last longer? Respondent: Yes, they will. They tend to last forever. Unless you get them re-infected.	stigma , perception of risk in PWID, age, reinfection
	1019	OK. So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery,	liver vs heart, commitment to recovery, futility, accountability, stigma

		right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis Right because we have thousands of bioprostheses on the shelf. Um, not thousands maybe tens of… tens of… maybe a hundred, I don't know. [LAUGHTER] I don't know how many we have on shelf. But, we have lots. Right Point is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going to take care of the organs they're going to get.	
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, support for patient, stigma , data
	1018	Have you seen prosthetic valve endocarditis in people who inject drugs? Yes Any specific cases come to mind? Well several just in my [time] here. Um where even the injectable drug is started while the patient was in the hospital recovering from surgery. I don't get angry it just raises my sympathy for their desperation	empathy, stigma
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	perception of risk in PWID, stigma , paternalism, frustration, futility

	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, stigma , tx compared to broader
	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem

		but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	
	1016	S: Um, it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to negotiate their recovery, and, and help when we have a team approach.	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals
	1006	Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	desired changes, societal issue, stigma , futility, frustration

	1006	Interviewer: Okay. How does different types of drug use influence your decision to operate for endocarditis? Interviewee: Define different kinds of drug use, it's all IV? Interviewer: I think they mean IV, different things that can be injected, or even including pills, does that play any role? Interviewee: Well it's the only people that can get endocarditis are the ones that inject. In terms of the different types of drugs, it doesn't really play that much of a role. I'm not sure that people really know what they're injecting anyway, just taking your dealer's word for it.	risk evaluation, stigma
	1006	Interviewer: Does the time period between endocarditis episodes change whether you would do the operation? Interviewee: Yes, if it's a second episode in nine months, that really dampens my enthusiasm for a second operation. If it's 5 years, 10 years, people fail	time between operations, futility, stigma , deservingness, reinfection, commitment to recovery
	1006	I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young.	lack of knowledge, stigma , perception of risk in PWID, frustration, patient story, paternalism
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally,	tx compared to colleagues, stigma , perception of risk in PWID, disagreements (professional), collaboration with addiction medicine, deservingness, multidisciplinary group

		the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it	
	1002	nterviewer: Can you tell me about your experience managing pain in this population? How do you manage pain for your patients in this scenario? Respondent: No opioids for most of the time. Interviewer: Has there ever been anything that has not worked well for pain management? Respondent: With other – the young patients are more and more – those patients have more pain than the elderly patients. So sometimes it's tough, but yeah, you just need to – I don't like to use opioids for these patient populations.	pain management, post-operation care, age, stigma
	1017	I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us	deservingness, stigma , paternalism, perception of risk in PWID, futility, frustration, liability of medical professionals
	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	commitment to recovery, deservingness, futility, stigma , contract, accountability, relapse
	1017	I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you,	stigma , empathy, futility

	1003	And what do you think about like, drug rehab? Do you think it's different – is it different than drug detox? Do you think it's - Respondent: Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	stigma , societal issue, timing of SUD tx, multidisciplinary group, medical model, regional differences, follow-up care, changes over time, support for patient
	1003	f it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery. So, in answer to your question, in most cases, I will offer them a second operation, provided that I get a sense that they're willing to, [from my] conversations with and the family that they're truly willing to stop using drugs again. And then I need to see if they ever did stop using drugs. If they're – if a patient, you put him through an operation the first time and they go back out in the street, like immediately start using drugs again, I will, sometimes will say no, I won't offer them a second operation. If they haven't shown any capacity to reform, then I think it's almost futile to offer them a second operation without any evidence that they truly made an effort to treat the underlying problem.	relapse, stigma , paternalism, futility, commitment to recovery, multiple surgeries, deservingness

	1009	Interviewer: Do you think that treatment for endocarditis and people who inject drugs will change in the future? Surgeon: In terms of surgical management? Or? Interviewer: Yeah. Surgeon: No. I think the operations are pretty standard. In the absence of new antibiotics that are much more effective, I think it's still going to be the same. I think you operate on patients with heart failure and mechanical complications. Interviewer: What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	changes over time, desired changes, societal issue, accountability, stigma
	1011	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Well I guess one of the things that is easier is valve choice. The older they are the choice of putting the bioprosthetic valve rather than the mechanical becomes a little more justifiable from just a guideline perspective. It also, someone who has made it to 55, I don't know what the expected survival of folks who do drugs is, but I think, I would think that this is someone, the 25 year old would be in much worse shape than someone who is 55, because they have a long way to go if they can get there. It is going to be a much harder thing for	age, support for patient, valve preference, stigma , seriousness

		them to clean up, I think, because I think you are in a different place in your life and different priorities and interactions and relationships that are different. I don't know what a definitive answer you are looking for, but I do think those two patients are going to be different.	
	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? I think all of us struggle with it at levels but having a team together trying to bring us to the same page; I think there are some surgeons who are more averse to uh, I think everybody would do whatever is the right thing to help. But the concern about hepatitis C, I have heard that raised, a much higher level of concern than I have, and also different surgeons may have different levels of hope as to how these patients are going to do after the operation.	tx compared to colleagues, infection risk to surgeons, stigma , training
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility
	1017	And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding	futility, empathy, stigma
	1015	I: What do you think about drug rehab and is it different from drug detox? S: Um…the more and more I treat this disease, I feel it is a chronic disease and can be suppressed but not fully treated. So, yeah, I think that drug rehab has a place, but I don't know that, you know, once you, once you are a drug user you are pretty much always a drug user. The same way you would think of alcohol, you know.	rehab v detox, stigma , futility, liver vs heart

	1001	Interviewer: Do you find yourself consulting other services for pain management issues? Respondent: I almost routinely consult, yeah. So the two services – this is why I would hope there would be a program here. That way there would be a multidisciplinary care on each single patient who has such a history, but currently we have to call the individual [consult service] – for example, the drug addiction service and psychiatry. I cannot [tell you] how much they are able to help if they are willing, just because this group of patients always is challenging to everybody. So I think overall we are doing the best we can.	support for surgeons, pain management, multidisciplinary group, stigma , collaboration with addiction medicine
	1004	: So, what are some of the first thoughts that you consider when you're asked to evaluate a person who injects drugs for a valve replacement? R: sad. Tough decisions. These people come in sick and don't take care of themselves. I do worry about getting viral infections like Hep C and HIV. There are no professional guidelines.	infection risk to surgeons, stigma , accountability, protocol, lack of resources, deservingness, commitment to recovery
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	stigma , discussing addiction, liver vs heart, deservingness, frustration, futility
	1004	I: And what about age? Would you look at a 25 year-old with a prosthetic valve endocarditis differently than someone who is 55? R: No, though a younger person gets more of a chance. It's sad, because the younger person is destroyed.	stigma , age
	1004	R: Would your approach changed in this example with Katie, if you – when she presented with prosthetic valve endocarditis, if you learn that she was pregnant? Is that something that would change your treatment? I: Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation	commitment to recovery, stigma , pregnancy, perception of risk in PWID, frustration, discussing addiction, futility

	1004	And then about Hep C or HIV, there's a social dilemma: if the person uses and recurs and they have Hep C, that's about 10 people who are involved in the surgery and are exposed, almost $150,000-200,000 of exposure, and for what?	futility, deservingness, infection risk to surgeons, stigma , screening for ID, cost
	1005	Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: That patient would not be an active drug user and would be treated like any non drug user.	deservingness, risk evaluation, stigma
	1005	We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	risk evaluation, deservingness, futility, stigma
	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	paternalism, deservingness, accountability, commitment to recovery, discussing addiction, frustration, futility, multiple surgeries, second chance, stigma
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, data, support for patient, stigma
	1018	Have you seen prosthetic valve endocarditis in people who inject drugs? Yes Any specific cases come to mind? Well several just in my [time] here. Um where even the injectable drug is started while the patient was in the hospital recovering from surgery. I don't get angry it just raises my sympathy for their desperation	empathy, stigma
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use? It does if the patient is defiant and clearly is not interested in helping them self.	deservingness, stigma , paternalism, frustration, futility, multidisciplinary group

	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, paternalism, tx compared to broader, stigma
	1018	think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of.	data, follow-up care, contract, deservingness, desired changes, valve preference, stigma
	1012	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um. I wonder what kind of patient I am going to meet. Because they come, they sort of come in different favors. There's the sort of	deservingness, priorities, second chance, stigma

		one that you know is kind of devastated and feels really terrible about what has happened and wants to get better and then there's one that's had this before and treated through it and it's like a revolving door and there is sort of a, you know, a spectrum of personalities and I kind of wonder which sort of patient I am about to meet.	
	1012	Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging. What works or doesn't work to treat their pain in your experience? We usually get a pain consult and let them help us manage it and I think those are you know when you are giving opiates to people with an opiate addiction it's not, you know, so we try all the non-opiate medications but they don't tend to be very effective either.	pain management, post-operation care, liability of medical professionals, stigma
	1012	Tell me your thoughts about management decisions in these cases So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up, and now you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again,	medical model, seriousness, multiple surgeries, risk evaluation, stigma
	1012	you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not. And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness. And then you realize I can do this again, but it is very likely they are going	stigma , seriousness, relapse, reinfection, accountability, deservingness, follow-up care, multiple surgeries, futility, lack of resources

		to come back a third time, and when do you stop? I	
	1012	Finally, if it was 5 years since she last used drugs? Yeah so if it was 5 years since she last used, the suspicion would be that that is not true, but you know people can get valve infections from other routes, dental and other things, so yeah I would be more enthusiastic about operating on her in that last situation but as I said I would probably offer her a second operation no matter what the circumstance was.	time between operations, commitment to recovery, second chance, defensive, stigma
	1012	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Uh. I don't think that antibiotics are ever going to be significantly more powerful than they are right now. I would hope that at some point we get better treatments for the substance abuse which is the problem. What we are treating is a sequela of the problem but what we need to focus on is the problem and right now, even your study is not focusing on the problem, its focusing on how aggressive we are in treating one of the sequela of the problem. I hope that the focus can shift to a. why are so many young people using life-threatening drugs and b. once they have a life-threatening problem as a consequence why do they still do it. So, that is a, that's the problem.	changes over time, desired changes, SUD treatment, prevalence of endocarditis, stigma
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, support for patient, stigma , data
	1018	Have you seen prosthetic valve endocarditis in people who inject drugs? Yes Any specific cases come to mind? Well several just in my [time] here. Um where even the injectable drug is started while the patient was in the hospital recovering from surgery. I don't get angry it just raises my sympathy for their desperation	empathy, stigma
	1018	Does it impact your decision to operate if the endocarditis, the subsequent endocarditis, is related to drug use?	perception of risk in PWID, stigma , paternalism, frustration, futility

		It does if the patient is defiant and clearly is not interested in helping them self.	
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, stigma , tx compared to broader
	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem

		to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	
	1005	Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes. Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: That patient would not be an active drug user and would be treated like any non drug user.	deservingness, risk evaluation, stigma
	1005	We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	risk evaluation, deservingness, futility, stigma
	1017	I: What do you think about drug rehab? S: I think, I think, it is awesome? (Laughing) I mean, I think it is, uh, you know, right now it seems to me the, you know, key piece of their long-term prognosis. I mean, the thing that we worry about, is not the surgery. The surgery is, we enjoy surgery, it is fun, it gives us great pleasure, it's the after part where they go back to using and die that is agony and moral agony for us. So, um, if, to at least my current thinking, rehab is a piece of helping their long-term prognosis, I'm super in favor of it.	follow-up care, stigma , paternalism, liability of medical professionals, futility
	1017	And, of course, I've become very fond of BLANK and so I said, ok, as some, at least those heroin users tend to be very nice people, just	futility, empathy, stigma

		stuck on heroin. So, I reoperated on him and I thought he was going to bleed to death afterwards, and so I said, I think we have nothing left for you, and then miraculously he stopped bleeding	
	1004	R: I think that heroin is different from alcohol, because heroin is so much more addictive, the person has no choice, they become a drug-seeking blob, heroin is harder. At the same time, someone couldn't possibly try heroin and not know that it's highly addictive, so in some ways it's kind of their fault. They know that one or two times with heroin is probably going to get them addicted. Whereas with alcohol, developing an addiction takes a lot longer.	liver vs heart, stigma , deservingness, frustration, futility
	1004	Yes, it would make me tend to operation more, but she'd get a lecture, because she's exposing her child to that junk. If you use heroin, you know the risks, the word's been out there for more than five years now. They should take her kid away. If she was injecting cocaine, I'd say the same thing. Even if she's been sober for five years, if she re-used I wouldn't offer the operation.	pregnancy, commitment to recovery, discussing addiction, frustration, futility, stigma
	1016	I do a very, kind of, extensive, um, um, uh, you know, conversation with them and with the family. And, my personal philosophy is to really say, you caused this, um, I am willing to take a risk and do your surgery, but I feel very strongly that they only get one chance, um, and, uh, that if, um, what this means, I will give you this one chance, but you have to commit to, um, refraining from drugs and getting substance abuse help. Um, and so I'm very up front with that in addition to the risks.	stigma , deservingness, discussing addiction
	1016	it's a team effort. I think, um, I think education is important, so my, I think what I've learned from the group here, the ID and addiction recovery physicians, is I've learned a lot more about this patient population, and some of the fears and negative connotations that I've, preconceived notions that I've brought to the table, about how they're going to do and how they're going to recover, um, knowing that there's a plan in place for recovery, or knowing that there's all these services available to these patients, that there's some help beyond just the operating room, um, makes me more interested in operating on patients, um, with IV, um, drug use endocarditis, um, because I know there's help, it's not just on me, that this patient dies, it's on my shoulders, or, um, that there's kind of other services to help out. And it takes some of the burden off me as a surgeon, feeling like I'm the one that has to	multidisciplinary group, stigma , commitment to recovery, follow-up care, liability of medical professionals

		negotiate their recovery, and, and help when we have a team approach.	
	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries
	1012	What are the first thoughts you consider when you are asked to evaluate a person who injects drugs for valve replacement? Um. I wonder what kind of patient I am going to meet. Because they come, they sort of come in different favors. There's the sort of one that you know is kind of devastated and feels really terrible about what has happened and wants to get better and then there's one that's had this before and treated through it and it's like a revolving door and there is sort of a, you know, a spectrum of personalities	deservingness, stigma

		and I kind of wonder which sort of patient I am about to meet.	
	1012	What works or doesn't work to treat their pain in your experience? We usually get a pain consult and let them help us manage it and I think those are you know when you are giving opiates to people with an opiate addiction it's not, you know, so we try all the non-opiate medications but they don't tend to be very effective either.	pain management, stigma , post-operation care, liability of medical professionals
	1012	Tell me your thoughts about management decisions in these cases So sometimes if its prosthetic endocarditis you can get away with treating it with antibiotics for a while, you don't necessarily have to go right back in right away although it almost never will go away. It does depend on the organism – some of the streps you can treat through, the staph, staph aureus, generally you can't. But you know it gets harder every time you go back in; the tissue is not as good, there's less of it, and um, you know the risks of the operation and the complications goes up, and now you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not.	frustration, futility, seriousness, stigma , risk evaluation, relapse
	1012	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Uh. I don't think that antibiotics are ever going to be significantly more powerful than they are right now. I would hope that at some point we get better treatments for the substance abuse which is the problem. What we are treating is a sequela of the problem but what we need to focus on is the problem and right now, even your study is not focusing on the problem, its focusing on how aggressive we are in treating one of the sequela of the problem. I hope that the focus can shift to a. why are so many young people using life-threatening drugs and b. once they have a life-threatening problem as a consequence why do they still do it. So, that is a, that's the problem.	desired changes, changes over time, SUD treatment, stigma , prevalence of endocarditis

	1015	I: What do you think about drug rehab and is it different from drug detox? S: Um…the more and more I treat this disease, I feel it is a chronic disease and can be suppressed but not fully treated. So, yeah, I think that drug rehab has a place, but I don't know that, you know, once you, once you are a drug user you are pretty much always a drug user. The same way you would think of alcohol, you know.	stigma , liver vs heart, futility, rehab v detox
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	discussing addiction, empathy, patient story, stigma , societal issue
	1010	Would your approach change if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? It certainly would because that is an additional medical condition. I would get the uh, again it would not change my approach because I am thinking "what the hell is she thinking getting pregnant and injecting drugs" but because that is a whole big medical condition. So, I would get the help of the OB service in planning anything. Anything from medications to surgery, anesthesia, anything.	pregnancy, stigma , frustration, deservingness, multidisciplinary group

	1014	I: Thank you. Do people who inject drugs have different operative and post-operative mortality? S: So, yes, they do. And, and, so, if somebody shows up, you know, a patient who had a dental extraction a few weeks before, and they come in with an infected valve, and we operate on them, their outcome, their survival, their life expectancy is normal with the other populations barring anything else that could happen. Recidivism is the number one problem with people with IVDA, and, and, those guys, you know, usually, the bacteria are worse, you know, they are not as, you know, they are MRSA, there could sometimes be Pseudomonas, God knows what they inject because they're not that clean, you know, they are not sterilizing their needles or whatever, and, so sometimes the infection is much more aggressive, and they have abscesses in their heart, and the operation could be much more aggressive, and much more elaborate, and especially when they do it again, you know, and you have a bioprosthesis now or a prosthesis that got infected makes the operation twice as difficult. So, yes and yes.	perception of risk in PWID, relapse, stigma
	1014	S: Uh, so, um, so, hopefully, they're helping us. I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before.	SUD treatment, follow-up care, stigma , commitment to recovery
	1014	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes and no. I mean, the blatant refusal is, it gives me pause. If a patient is saying, "Nope, I won't stop," and if they are in a mental, you know, state, where they're absolutely, you know, saying, "You operate on me and I know I'm going to use again," you know, those are far and few in between. Those are rare, but sometimes you see them. And, and, you, kind of, wonder, what am I doing here? This is where, you know, the support, the hospital support, with psychiatrists and all the disciplines, it becomes a multidisciplinary approach, and I've tried to involve other, some	commitment to recovery, multidisciplinary group, stigma

		of my partners, like, you know, this guy is a recurrent offender, and he intends on, on, so what are we doing? So, that's, that's the epitome of futility in my eyes.	
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely. It could happen. Yeah. I: Interesting. How recent was that? S: Five years ago, six years ago. I could send it to you.	data, changes over time, reinfection, stigma
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So,	regional differences, tx compared to broader, lack of resources, stigma

		we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	
	1003	Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	changes over time, support for patient, SUD treatment, stigma , societal issue, collaboration with addiction medicine, multidisciplinary group
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We	data, changes over time, reinfection, stigma

		never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely. It could happen. Yeah. I: Interesting. How recent was that? S: Five years ago, six years ago. I could send it to you.	
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	1005	Interviewer: For example, how would you feel about operating on someone who used to use drugs 10 years ago and gets a prosthetic valve endocarditis after a dental procedure? Interviewee: That patient would not be an active drug user and would be treated like any non drug user.	perception of risk in PWID, deservingness, reinfection, stigma
	1005	Interviewer: This is going to ask you to speak a little bit about the risks of a reoperation versus the original surgical procedure. Interviewee: Well reoperations always carry more risks. I think there's a higher pacemaker risk with any reoperation. Certainly a higher bleeding risk, stroke risk and length of operation. Interviewer: If a patient has 100 percent mortality without surgery and 50 percent operative mortality with an operation, is it worth taking the patient to the OR?	risk evaluation, multiple surgeries, futility, deservingness, stigma

		Interviewee: We often don't quote any kind of risks higher than 20 percent, but we do a lot of really high risk operations. I think if we—if a patient is actively drug using repetitively, they will die, and they've been told that they can only have one operation or at most two, so I don't think we necessary think of the mortality with or without in that situation.	
	1014	Do people who inject drugs have different operative and post-operative mortality? S: So, yes, they do. And, and, so, if somebody shows up, you know, a patient who had a dental extraction a few weeks before, and they come in with an infected valve, and we operate on them, their outcome, their survival, their life expectancy is normal with the other populations barring anything else that could happen. Recidivism is the number one problem with people with IVDA, and, and, those guys, you know, usually, the bacteria are worse, you know, they are not as, you know, they are MRSA, there could sometimes be Pseudomonas, God knows what they inject because they're not that clean, you know, they are not sterilizing their needles or whatever, and, so sometimes the infection is much more aggressive, and they have abscesses in their heart, and the operation could be much more aggressive, and much more elaborate, and especially when they do it again, you know, and you have a bioprosthesis now or a prosthesis that got infected makes the operation twice as difficult. So, yes and yes.	perception of risk in PWID, relapse, stigma
	1014	I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before. I don't have the answers.	commitment to recovery, stigma , SUD treatment, follow-up care

	1014	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes and no. I mean, the blatant refusal is, it gives me pause. If a patient is saying, "Nope, I won't stop," and if they are in a mental, you know, state, where they're absolutely, you know, saying, "You operate on me and I know I'm going to use again," you know, those are far and few in between. Those are rare, but sometimes you see them. And, and, you, kind of, wonder, what am I doing here? This is where, you know, the support, the hospital support, with psychiatrists and all the disciplines, it becomes a multidisciplinary approach, and I've tried to involve other, some of my partners, like, you know, this guy is a recurrent offender, and he intends on, on, so what are we doing? So, that's, that's the epitome of futility in my eyes.	commitment to recovery, stigma , multidisciplinary group
	1014	Having said that, there is data over the last 5 years that says, even in the acute setting, the risk of reinfection is the same, barring they don't use. You understand? So, because if you operate on somebody who is infected, there is a chance that their valve could get reinfected even if they don't use. We used to think that we need to sterilize them for, and have negative blood cultures, and wait on them until they have at least one negative blood culture and then go in and say, their bloodstream is now sterile, and we can go. That's not the case. That's not the case, because there is a Korean paper that made it to New England Journal of Medicine that says, you don't have to. They randomized, you know, they just operate on people are in the throes of it, their outcomes are the same, and even they talk about strokes that, we used to think of smaller strokes as issue, as young as you are, you show up with a stroke, that we need to wait six weeks. Not anymore. Now, we can operate through, which is interesting. We never did that, we think we heparinize those patients, and they will, uh, they can bleed inside their brain. It turns out, that's a theoretical problem. It could happen, but very unlikely.	data, reinfection, medical model, stigma , changes over time
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach	tx compared to broader, lack of resources, stigma , regional differences

		with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So, we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	
	1009	In a case where if a patient had 100 percent mortality without the surgery, definitely going to die but had maybe 50 percent operative mortality, would it be worth taking the patient to the OR? What's your risk calculation on that? Surgeon: What's the reason we're going? Is it recurrent endocarditis from injection drug abuse or is it just any patient? Interviewer: Let's say any patient for now. Surgeon: If I had done an aortic valve replacement on a patient for aortic stenosis and they came back in, 50 percent is a big number. it would really be on a case-by-case basis. But would I consider doing it? Possibly. If someone came in with recurrent prosthetic valve endocarditis secondary to intravenous drug abuse and this 2nd time was because of intravenous injection, I would not do the operation. I would say I don't feel comfortable doing it, acknowledging that, yes, the patient will die.	risk evaluation, perception of risk in PWID, multiple surgeries, stigma , save lives, reinfection, futility, relapse
	1009	What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the	changes over time, accountability, deservingness, stigma

		drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	
SUD Treatment			
	1009	How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	knowledge, SUD treatment, medical model, disassociation (secondary)
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you	support for patient, SUD treatment, changes over time, desired changes, follow-up care

		fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	
	1010	How knowledgeable do you feel about the available treatments for people who use drugs? Um in terms of cardiac issues, infectious disease issues, or counseling? In terms of actual treatment of their substance use I know that things have changed in the past years and there is medications being given, suboxone, you know uh psychological help. But I can't say I am an expert for what works for a specific condition.	knowledge, SUD treatment, collaboration with addiction medicine
	1010	Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar.	societal issue, SUD treatment, accountability, support for patient, collaboration with addiction medicine
	1010	How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service.	SUD treatment, follow-up care, data, collaboration with addiction medicine, commitment to recovery, deservingness

	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job	discussing addiction, post-operation care, mechanical problem, lack of knowledge, SUD treatment
	1019	we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right And I don't think that's an ethically sound practice.	SUD treatment, deservingness, empathy, medical model
	1019	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not... I'm not very knowledgeable, no, honestly. Do you want to receive more training on this? That's fine. For me it would be an informational thing. Uh, I don't know that it would change the scope of my practice or how I conduct my practice, but maybe it would. But I am… I am… I am relatively ignorant on that, yes.	lack of knowledge, SUD treatment, training

	1019	So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would… I would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, post-operation care, SUD treatment, discussing addiction, follow-up care, deservingness, perception of risk in PWID, paternalism
	1019	s there any role of medications or psychotherapy in their treatment and do you think that it should be combined or exist alone? Well again, you're… you're starting to ask me questions Right about the postoperative rehab process and I'm not very knowledgeable on it but I would imagine that a combination of pharmacotherapy and psychotherapy would be the best approach to… to the treatment of opioid addiction.	SUD treatment, lack of knowledge, post-operation care

	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients because they're addicts. Right. That's not my job Right	discussing addiction, collaboration with addiction medicine, SUD treatment, lack of knowledge
	1019	Um, what do you think about drug rehab? Um, I… I think that it works sometimes, and sometimes it doesn't. Is this- I… I support it.	SUD treatment
	1019	Is there any role of medications or psychotherapy in their treatment and do you think that it should be combined or exist alone? Well again, you're… you're starting to ask me questions Right about the postoperative rehab process and I'm not very knowledgeable on it but I would imagine that a combination of pharmacotherapy and psychotherapy would be the best approach to… to the treatment of opioid addiction.	SUD treatment, post-operation care, lack of knowledge

	1008	nterviewer: Okay. Cool. And how knowledgeable do you feel about the available treatments for people who use drugs? You know, like available treatment for opioid use disorder or something? Respondent: I refer to the -- there's the -- that team-- that does this. I refer everybody to them. Interviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance. Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem	SUD treatment, lack of knowledge, commitment to recovery, withdrawal management, pain management, deservingness, collaboration with addiction medicine
	1019	Okay. Have you ever discussed drug use with a patient like this? To some extent. I, uh, you know, I don't think that it's my job to necessarily to, uh, cure the patient of their drug addiction. That's not what I am. I'm a heart surgery. I fix heart problems. So the analogy here is a patient who's an alcohol that needs heart surgery. My… my specialty is not curing people of their alcohol addictions. My specialty is doing heart surgery. However, do I think that someone who is addicted to alcohol or drugs, should they receive counseling? Absolutely. So we perform the surgery, we get the patient through surgery, and then we make recommendations to the patient [COUGHING] regarding how they can approach their drug addiction and their alcohol addiction. In other words, I… you know, I don't pass judgment on patients	discussing addiction, collaboration with addiction medicine, SUD treatment, lack of knowledge

		because they're addicts. Right. That's not my job Right	
	1019	Um, what do you think about drug rehab? Um, I… I think that it works sometimes, and sometimes it doesn't. Is this- I… I support it.	SUD treatment
	1019	Is there any role of medications or psychotherapy in their treatment and do you think that it should be combined or exist alone? Well again, you're… you're starting to ask me questions Right about the postoperative rehab process and I'm not very knowledgeable on it but I would imagine that a combination of pharmacotherapy and psychotherapy would be the best approach to… to the treatment of opioid addiction.	SUD treatment, post-operation care, lack of knowledge
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, lack of knowledge, training, time constraints
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, support for patient, stigma , data

	1011	I think this is a really tough topic. I don't think we have all of the answers. I think this truly needs a multidisciplinary approach to this. Surgery is just one point; most surgeons' offices are not geared towards long term follow up they are not geared toward addiction management they are not geared towards drug rehab programs which is where a lot of support is required either other disciplines or other avenues in society. These patients they have a serious disease problem, the example that you gave about alcoholism, or cancer is more true than not, its not the valve that is the problem, the disease is the addiction.	multidisciplinary group, SUD treatment, medical model
	1016	I: What are some of the available treatments for opioid use disorder? I know that you said you don't really prescribe them, and do you want to receive more training on this sort of thing? S: Um, I think what would be more practical is having my team, who is actually doing the prescribing, the nurse practitioners, receive more training.	training, SUD treatment
	1016	I: How do you think this patient—going back to Katie—how do you think this patient's opioid use disorder should be treated? S: Um, pass. I mean I can say that, to get enrolled in a program, to support her so she doesn't return to using drugs, whether that's with methadone or, um, you know, other medications that may be available. Beyond the specifics of that… I: When do you think that would take place? S: Um, a plan should be in place as they are leaving the hospital, or, you know, instituted before they leave the hospital so there's no drop out in care. I: What is the role of medications in that? S: Um, my understanding is that, um, medications such as methadone can help prevent patients from going back to using IV drugs. Um, and is, I don't want to say a bridge, but to some degree, a nice, um, bridge medication. Um, my bias is that, um, while it prevents them from using illegal drugs, it is still a substance that they become dependent on in the long-term. I: How about psychotherapy? What role do you think that plays? S: I think psychotherapy is very important. Um, I don't know how many patients get that, or, receive it, or, how many patients are willing to participate in it. Um, but I do think it's an important piece to recovery.	SUD treatment, timing of SUD tx, follow-up care

	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1006	Interviewer: Okay. How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: At best, moderate. Interviewer: What are some of the available treatments for opioid use disorder? Interviewee: Well, I think psychotherapy, suboxone, methadone. I don't even know that much about suboxone, I think it's a combination drugs, buprenorphine with something else, social services, that's about all I know. Interviewer: Do you want to receive more training on this? Interviewee: If it's concise.	knowledge, SUD treatment, time constraints, training

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	SUD treatment, societal issue, relapse, data, futility, frustration, follow-up care, reinfection, patient story, commitment to recovery, deservingness, perception of risk in PWID
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs. Interviewer: I think it just answered this, it wants me to ask you, do these types of treatment exist alone or do they need to be combined? Interviewee: Oh, absolutely combined.	SUD treatment, multidisciplinary group, support for patient, medical model, follow-up care
	1006	Interviewer: Do you think that treatment for endocarditis in people who inject drugs will change in the future? Interviewee: It's a good question. I know you don't ask anything but good questions, right? Probably will. Where are the gaps? The treatment of addiction is far less than 100 percent successful, so better methods for	societal issue, desired changes, lack of resources, SUD treatment, changes over time, prevalence of endocarditis, protocol

		controlling the addiction. With any luck we'll get a federal government in the not too distant future that understands the root cause of the addiction, it's really about despair in these people, hanging out and not doing anything. Opioids fill that void. It's really a huge problem, and there are a lot of ways you can make it better, and I think it will get better. Then again, I'm a glass half full kind of guy, so.	
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	desired changes, SUD treatment, societal issue, medical model, support for patient, changes over time, follow-up care
	1002	So if you have a patient who comes in who uses drugs, how much knowledge do you feel you have about the treatments they can use for someone who is trying to get off of it? Respondent: I don't know. I don't have that much knowledge, except for the surgical part. Interviewer: Would you ever want more training on this? Respondent: What's the benefit of doing the training? I'm happy to do it, but the amount of time – what's the rush now of doing the training events?	time constraints, SUD treatment, lack of knowledge, priorities, training, mechanical problem

	1007	Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, patient consent, support for patient, follow-up care, SUD treatment
	1007	Okay. So how about her opioid use disorder, how should it be treated and when? Speaker 2: Well, um, I mean I'm not an expert in the field. We wouldn't, like I said, we'll work very closely with addiction medicine, so I would defer to them, but I think they should be engaged immediately.	SUD treatment, collaboration with addiction medicine
	1007	So does her commitments to treatments for opioid use disorders? Say she has, she goes through drug rehabilitation or detox. Does that impact your decision? Speaker 2: Yeah, It's a positive thing. Speaker 1: Okay. So why does it impact your decision to treat her, your decision to operate on her? Speaker 2: Well, in that case, in a particular Vignette, it doesn't, Speaker 1: It doesn't. Okay. Speaker 2: Because you're just, I mean, a lot of times these are not even that interactive patients	SUD treatment, commitment to recovery, defensive
	1013	How did you think about that decision? So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	priorities, save lives, SUD treatment, time constraints
	1013	Looking back is there anything you would change about your approach? To those sorts of patients? I don't think so. The critical issue is getting addiction medicine involved. So, if you say over the course of my	SUD treatment, collaboration with addiction medicine, changes over time

		career years ago there wasn't really access to addiction medicine to make that happen.	
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	desired changes, cost, insurance, support for patient, deservingness, SUD treatment
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program where they can hopefully have their underlying addiction treated successfully.	support for patient, post-operation care, SUD treatment, save lives, follow-up care, discussing addiction, multidisciplinary group
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy

	1003	nd then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards. Interviewer: How do you like, bring him in, into your cases? Respondent: Well, fortunately he's been with us for about a year, so I – when I go see a patient, once I assess them, I, if he hasn't seen the patient yet, I notify the medical team to get in contact with him, and he's pretty good at coming to see a patient within 24 hours. And so, that's great. And then, I stay in contact with him and you know, tell him the surgery is scheduled and he'll see the patient afterwards, too. So, it's been a good collegiality – collegial relationship – colleagues and addiction medicin	collaboration with addiction medicine, support for patient, support for surgeons, follow-up care, SUD treatment
	1003	. And how knowledgeable do you yourself feel about like, available treatments for people who use drugs? You know, do you know of any – of the available treatments for opioid use disorder, is that something you'd be interested in getting more training on? Respondent: Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be interested in doing that, but it's you know, right now, not practical. For me.	SUD treatment, time constraints, training, follow-up care, protocol
	1009	How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest.	knowledge, SUD treatment, medical model

		I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	
	1011	Sure. What are some of the terms you use to discuss addiction? Have you ever heard of the term opiate use disorder or used it when talking with patients? So, I don't know what terms I would use. I would ask about addiction and detoxing centers and maintenance therapy, you know, deaddiction programs and stuff, so more in those setting. The opiate use disorder, I am sure I have used some variation of that phrase.	discussing addiction, SUD treatment
	1017	I: What does the role of medications play in that? S: I don't know. I'm sure there is a role. I: And how about psychotherapy? S: I'm a big fan. So, I think, I don't know, but I think there is a role. I: Do you think they work better together or better separate? S: They're together, but I'm a bit of a union in all this. I'm just kidding, I don't know what that means. (Laughing)	SUD treatment, lack of knowledge
	1013	So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	priorities, SUD treatment, save lives, time constraints
	1013	Looking back is there anything you would change about your approach? To those sorts of patients? I don't think so. The critical issue is getting addiction medicine involved. So, if you say over the course of my career years ago there wasn't really access to addiction medicine to make that happen.	collaboration with addiction medicine, changes over time, SUD treatment
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend	insurance, societal issue, desired changes, cost, SUD treatment

		tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	
	1015	I: Gotcha. Um… How knowledgeable do you feel about treatments for people who use drugs? S: Very knowledgeable. I: OK. What are some of the available treatments for opioid use disorder? S: Um, the two that come to mind are methadone and Suboxone. I: Great. Do you want to… S: But you need a, you need a, an X-waiver for Suboxone prescribing. I: Ok. Do you want to receive more training on this? S: Uh…sure.	knowledge, SUD treatment, training
	1015	do you think that medications and psychotherapy, um, one works better than the other, or they need to coexist in your experience? S: I think they, I think they, I think, I don't have a lot of knowledge about therapies, but I think that, um, medications are important. Um…I believe that Suboxone is more efficacious than methadone, and I've seen a lot of people on methadone with real, no real plans to cut out, cut down, or quit, or change. Whereas with Suboxone, I believe there is evidence for that being a good treatment for this disease.	SUD treatment, commitment to recovery, lack of knowledge
	1007	Speaker 1: Okay. So how knowledgeable do you feel about the available treatments for people who use drugs? Speaker 2: Fairly knowledgeable. Somewhat. Speaker 1: Okay. So what are some of the treatments you know about for opioid use disorder? Speaker 2: Well, I mean a lot of, um, I mean to treat the addiction Speaker 1: Yeah, yeah, yeah. Speaker 2: Um, we have here, um, we work very closely with addiction medicine, so we'll refer the patients to addiction medicine and get their input on it. We also, and I know, you know, obviously the Methadone and so forth, but we also um, recognize the social part of the problems. So even though we were surgeons, and we're pre-oping and post-oping patients for surgery, we are engaging in social discussion because that's probably the biggest variable.	SUD treatment, collaboration with addiction medicine, discussing addiction, societal issue

	1007	Speaker 1: All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox. Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	SUD treatment, knowledge, collaboration with addiction medicine, societal issue
	1007	Speaker 1: Okay. So how about her opioid use disorder, how should it be treated and when? Speaker 2: Well, um, I mean I'm not an expert in the field. We wouldn't, like I said, we'll work very closely with addiction medicine, so I would defer to them, but I think they should be engaged immediately.	SUD treatment, lack of knowledge
	1007	Speaker 1: Okay. Thank you. Speaker 1: So does this patient's commitment to treatments, so treatment for opioid use disorder, does it impact your surgical decisions to operate on her? Speaker 2: Huh? In which way? Speaker 1: So does her commitments to treatments for opioid use disorders? Say she has, she goes through drug rehabilitation or detox. Does that impact your decision? Speaker 2: Yeah, It's a positive thing. Speaker 1: Okay. So why does it impact your decision to treat her, your decision to operate on her? Speaker 2: Well, in that case, in a particular Vignette, it doesn't, Speaker 1: It doesn't. Okay. Speaker 2: Because you're just, I mean, a lot of times these are not even that interactive patients.	commitment to recovery, SUD treatment
	1007	Speaker 2: Um, again, we work with addiction medicine and have them consult before the surgery, but we would acknowledge them	collaboration with addiction medicine, multidisciplinary group, SUD treatment

		same as anyone else with additional methadone or whatever.	
	1001	Interviewer: All right, and do you feel knowledgeable about available treatments available to people who use drugs? Respondent: I have some knowledge, but I rely on the specialist – that you help me take care of those patients. Interviewer: Do you know what any of the available treatments are for opiate use disorder? Or mainly you work with the specialists? Respondent: I will say I mainly work with the specialists, yeah.	collaboration with addiction medicine, knowledge, SUD treatment, training
	1001	Interviewer: All right, and what do you think about the term 'drug rehab?' Respondent: I don't know the detail. I heard about the name. To me it is very difficult. I think theoretically there will be successful stories, but I see it clinically it happened a lot. People tended to relapse back into the drug use [in getting the effects again and again]. I think it's hard for people, and I think they all deserve to be placed in drug rehab, if possible, to have kind of their program that we help them get over the drug addiction, if possible. I personally think it should be mandatory for them to join this program, but I don't think it's going to be the case – but I would recommend that every patient who has been on drugs to be evaluated by the specialist. If they request those patients to go to rehab, I would support it.	SUD treatment, deservingness, relapse, follow-up care, multidisciplinary group
	1001	Interviewer: For Katy, do you think her opiate use disorder should be treated? Respondent: I believe so. I think drug use is not just a social issue. It is a disease, you know? I don't know if there is currently a definition for that, but that's just my personal opinion. I think they should be fairly treated, offered all the options, and carefully monitored with follow-up. It's a complex medical issue, not just a social issue.	SUD treatment, societal issue, empathy, deservingness, support for patient, follow-up care
	1001	Rehab? I don't know. It all depends. You know, every place is different. We have good experiences and bad experiences with rehab. So I cannot really comment. I know only even though this is not 100 percent, we can manage the patient in the hospital. We can provide the best care they can get, but I just cannot comment on if they can go to rehab.	post-operation care, SUD treatment, risk evaluation, follow-up care, paternalism

		Theoretically they can, if the rehab place is a fair facility.	
	1004	I: How should this patient (Katie's) OUD be treated? R: No idea, if she has the operation, she's agreed to the contract to enter treatment. I don't know anything about medications or psychotherapy.	lack of knowledge, SUD treatment, patient consent, contract
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1005	Interviewer: How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: Fairly knowledgeable. Interviewer: It wants me to get really specific. What are some of the available treatments for opioid use disorder? Interviewee: I see most patients these days come in on suboxone or some type of—we don't see methadone as much anymore, we usually see suboxone or one of the combined opioid agonist and antagonist drugs.	knowledge, SUD treatment
	1005	Interviewer: What do you think about drug rehab? Interviewee: I think it's excellent. Interviewer: Is it different than drug detox? Interviewee: Yes, but rehab can incorporate some aspects of detox, depending on the center.	SUD treatment, rehab v detox
	1008	nterviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance.	SUD treatment, paternalism, deservingness

	1008	Interviewer: Okay. Can you tell me a little bit more about your experience managing pain in this population? You said like a little bit about it, but. Respondent: They just require a lot of medications. And they're in pain a lot. Because, you know, the receptors are down regulated, I think. Again, we get the experts involved to help manage that. Interviewer: There's a pain management service? Respondent: Yep. Yeah. Interviewer: Okay. What tends to work to treat their pain? Like what do they end up on usually? Do you know? Respondent: No. The usual stuff. I mean they give methadone. They give them all sorts of stuff and it's mainly narcotic-based, at least early on.	pain management, SUD treatment
	1008	Interviewer: Okay. So, some people make the comparison between valve replacements and the setting of infective endocarditis and liver transplant and the study of alcoholism. Like what do you think of that comparison? Respondent: I think the people that get liver transplant for alcoholism have a much better chance than the IV drug abusers getting a valve replacement. I think the addiction is much worse. But, yeah, there's a lot of similarities there. You know, it's destructive behavior on both parts. Both very expensive treatments. I mean we're talking hundreds of thousands of dollars for each of these. And the recidivism, I think, is much worse for the IV drug abuser as it is for the guy that gets a liver transplant. I don't think there's a lot of people that are active alcoholics that get a liver transplant. But we don't send these patients to rehab unless we have that opportunity. No, if they have endocarditis, you can treat them medically. Yeah, they go to rehab and they may not need an operation. Just like an alcoholic, you know, they have to wear their liver out before they get the transplant. I think both of these groups should go to rehab. And, hopefully, they won't need their operation. But often they do.	liver vs heart, deservingness, futility, frustration, relapse, SUD treatment

	1008	Interviewer: Some hospitals have a multi-disciplinary group to evaluate people who inject drugs for valve replacements. Does this hospital have something like that? Respondent: Yeah. Interviewer: Okay. Who comes to the meetings? Do you go? Respondent: Yeah, we do. Psychiatrists, they have the drug rehab people. Usually, we don't meet in a room. We just -- everybody sees the patient. Interviewer: Okay. Has that been helpful? Respondent: I think so. Interviewer: Okay. Is there anyone else you'd like to see on the team? Respondent: Not really. Interviewer: Okay. Respondent: Most of these patients just keep doing what they're doing, anyway. Doesn't matter who talks to them, but.	multidisciplinary group, SUD treatment
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, time constraints, priorities, training
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, data, support for patient, stigma

	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	administration, cost, accountability, insurance, support for patient, support for surgeons, SUD treatment, follow-up care, societal issue
	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	lack of knowledge, SUD treatment, liability of medical professionals, perception of risk in PWID, cost, insurance
	1012	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Uh. I don't think that antibiotics are ever going to be significantly more powerful than they are right now. I would hope that at some point we get better treatments for the substance abuse which is the problem. What we are treating is a sequela of the problem but what we need to focus on is the problem and right now, even your study is not focusing on the problem, its	changes over time, desired changes, SUD treatment, prevalence of endocarditis, stigma

		focusing on how aggressive we are in treating one of the sequela of the problem. I hope that the focus can shift to a. why are so many young people using life-threatening drugs and b. once they have a life-threatening problem as a consequence why do they still do it. So, that is a, that's the problem.	
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, lack of knowledge, training, time constraints
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, support for patient, stigma , data
	1005	I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation.	discussing addiction, commitment to recovery, patient story, priorities, risk evaluation, SUD treatment
	1005	Interviewer: How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: Fairly knowledgeable. Interviewer: It wants me to get really specific. What are some of the available treatments for opioid use disorder? Interviewee: I see most patients these days come in on suboxone or some type of—we don't see methadone as much anymore, we usually see suboxone or one of the combined opioid agonist and antagonist drugs.	knowledge, SUD treatment
	1005	Interviewer: What do you think about drug rehab? Interviewee: I think it's excellent. Interviewer: Is it different than drug detox? Interviewee: Yes, but rehab can incorporate	SUD treatment, rehab v detox

		some aspects of detox, depending on the center.	
	1017	I: What does the role of medications play in that? S: I don't know. I'm sure there is a role. I: And how about psychotherapy? S: I'm a big fan. So, I think, I don't know, but I think there is a role. I: Do you think they work better together or better separate? S: They're together, but I'm a bit of a union in all this. I'm just kidding, I don't know what that means. (Laughing)	SUD treatment, lack of knowledge
	1004	No idea, if she has the operation, she's agreed to the contract to enter treatment. I don't know anything about medications or psychotherapy.	SUD treatment
	1016	What are some of the available treatments for opioid use disorder? I know that you said you don't really prescribe them, and do you want to receive more training on this sort of thing? S: Um, I think what would be more practical is having my team, who is actually doing the prescribing, the nurse practitioners, receive more training.	SUD treatment, training
	1016	How do you think this patient—going back to Katie—how do you think this patient's opioid use disorder should be treated? S: Um, pass. I mean I can say that, to get enrolled in a program, to support her so she doesn't return to using drugs, whether that's with methadone or, um, you know, other medications that may be available. Beyond the specifics of that… I: When do you think that would take place? S: Um, a plan should be in place as they are leaving the hospital, or, you know, instituted before they leave the hospital so there's no drop out in care.	SUD treatment, follow-up care, timing of SUD tx
	1016	What is the role of medications in that? S: Um, my understanding is that, um, medications such as methadone can help prevent patients from going back to using IV drugs. Um, and is, I don't want to say a bridge, but to some degree, a nice, um, bridge medication. Um, my bias is that, um, while it prevents them from using illegal drugs, it is still a substance that they become dependent on in the long-term. I: How about psychotherapy? What role do	SUD treatment

		you think that plays? S: I think psychotherapy is very important. Um, I don't know how many patients get that, or, receive it, or, how many patients are willing to participate in it. Um, but I do think it's an important piece to recovery.	
	1006	Interviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers. Interviewer: Have you heard the term opioid use disorder, and have you used it when talking with a patient? Interviewee: I think I've heard it, it's not common parlance, and I've never used it talking to a patient.	discussing addiction, commitment to recovery, follow-up care, frustration, patient story, priorities, risk evaluation, societal issue, SUD treatment
	1006	Interviewer: Okay. How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: At best, moderate. Interviewer: What are some of the available treatments for opioid use disorder? Interviewee: Well, I think psychotherapy, suboxone, methadone. I don't even know that much about suboxone, I think it's a combination drugs, buprenorphine with something else, social services, that's about all I know.	knowledge, SUD treatment

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs.	SUD treatment, support for patient, follow-up care, medical model, multidisciplinary group
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually,	support for patient, SUD treatment, changes over time, desired changes, follow-up care

		they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	
	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	lack of knowledge, SUD treatment, cost, accountability, liability of medical professionals
	1012	Do you think that treatment for endocarditis in people who inject drugs will change in the future? Uh. I don't think that antibiotics are ever going to be significantly more powerful than they are right now. I would hope that at some point we get better treatments for the substance abuse which is the problem. What we are treating is a sequela of the problem but what we need to focus on is the problem and right now, even your study is not focusing on the problem, its focusing on how aggressive we are in treating one of the sequela of the problem. I hope that the focus can shift to a. why are so many young people using life-threatening drugs and b. once they have a life-threatening problem as a consequence why do they still do it. So, that is a, that's the problem.	desired changes, changes over time, SUD treatment, stigma , prevalence of endocarditis
	1015	I: Gotcha. Um… How knowledgeable do you feel about treatments for people who use drugs? S: Very knowledgeable. I: OK. What are some of the available treatments for opioid use disorder? S: Um, the two that come to mind are methadone and Suboxone. I: Great. Do you want to… S: But you need a, you need a, an X-waiver for Suboxone prescribing. I: Ok. Do you want to receive more training on	SUD treatment, knowledge, training

		this? S: Uh…sure.	
	1015	I: That's ok. Um…basically, do you think that medications and psychotherapy, um, one works better than the other, or they need to coexist in your experience? S: I think they, I think they, I think, I don't have a lot of knowledge about therapies, but I think that, um, medications are important. Um…I believe that Suboxone is more efficacious than methadone, and I've seen a lot of people on methadone with real, no real plans to cut out, cut down, or quit, or change. Whereas with Suboxone, I believe there is evidence for that being a good treatment for this disease.	lack of knowledge, SUD treatment, commitment to recovery
	1010	How knowledgeable do you feel about the available treatments for people who use drugs? Um in terms of cardiac issues, infectious disease issues, or counseling? In terms of actual treatment of their substance use I know that things have changed in the past years and there is medications being given, suboxone, you know uh psychological help. But I can't say I am an expert for what works for a specific cond	knowledge, SUD treatment, collaboration with addiction medicine
	1010	Do you want to receive more training on this? I don't think it would change what I do for the patients.	training, SUD treatment
	1010	What do you think about drug rehab? Do you have thoughts on drug rehab? Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar. How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of evidence if that is all you do, then send them	SUD treatment, accountability, societal issue, support for patient, collaboration with addiction medicine

		back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service. And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	
	1014	S: Uh, so, um, so, hopefully, they're helping us. I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before.	SUD treatment, follow-up care, stigma , commitment to recovery
	1014	I: Gotcha. How knowledgeable do you feel about the available treatments for people who use drugs? S: To a certain extent. You know, I mean, I mean, what do you mean treatments? I: Um, like, how knowledgeable are you about, like, methadone programs and treatment programs? S: I can, I can, you know, a little bit, but I, for me, all I need to do is to be the bridge to connect them with the right people, but I can't, I can't just have a deep, deep discussion.	lack of knowledge, SUD treatment, priorities
	1014	I: What do you think the role of medications play in the treatment for…? S: I don't want to comment. I: How about psychotherapy? S: Important. I: Do you think these types of treatment exist alone or do they need to be combined? S: Combined.	multidisciplinary group, SUD treatment

	1014	I: Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions. How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that. Am I confusing you?	second chances, deservingness, support for patient, SUD treatment, insurance, risk evaluation, SES

	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now. What questions do you ask? Charlie, what drugs were you using? When was the last time you used it? Have you tried quitting in the past? And then I ask them what their social support system is because I think that is what is going to prevent them from using drugs again.	discussing addiction, accountability, paternalism, SUD treatment
	1011	What are some of the terms you use to discuss addiction? Have you ever heard of the term opiate use disorder or used it when talking with patients? I don't know if I have used the exact phrase but generally I would… could you repeat the question? Sure. What are some of the terms you use to discuss addiction? Have you ever heard of the term opiate use disorder or used it when talking with patients? So, I don't know what terms I would use. I would ask about addiction and detoxing centers and maintenance therapy, you know, deaddiction programs and stuff, so more in those setting. The opiate use disorder, I am sure I have used some variation of that phrase.	discussing addiction, SUD treatment
	1011	How knowledgeable do you feel about the available treatments for people who use drugs? Um, I've learned some going to our multidisciplinary team meetings. Um, I don't consider myself to be an expert or even a specialist in that, but I am glad that I know people, I know who to call.	knowledge, SUD treatment, collaboration with addiction medicine
	1011	What do you think about drug rehab? I'm not sure what that completely entails but if that means that you know once the patients are beyond their acute phase, they can then go into chronic maintenance phase of whatever detox, addiction medications they're going to be on is what I understand it to be.	SUD treatment

	1011	I think this is a really tough topic. I don't think we have all of the answers. I think this truly needs a multidisciplinary approach to this. Surgery is just one point; most surgeons' offices are not geared towards long term follow up they are not geared toward addiction management they are not geared towards drug rehab programs which is where a lot of support is required either other disciplines or other avenues in society. These patients they have a serious disease problem, the example that you gave about alcoholism, or cancer is more true than not, its not the valve that is the problem, the disease is the addiction.	multidisciplinary group, SUD treatment, medical model
	1002	I don't know. I don't have that much knowledge, except for the surgical part.	SUD treatment
	1003	But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	futility, risk evaluation, SUD treatment
	1003	Yeah. Well, they would undergo – we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive	SUD treatment, commitment to recovery, discussing addiction, follow-up care, multidisciplinary group, post-operation care, protocol

	1003	Well, I would first of all get a sense of how long they've been using drugs, and the term I would use would be - I don't want to use the term illicit, but I would just use the term IV drugs – intravenous drugs – and I got to ask, get a sense of how long they've been using, whether or not they have undergone rehab in the past, and how long they've been using drugs currently. And then I would ask them are they going to be, do you want to – are you even going to want to go to a rehab program afterwards. Virtually everyone's going to say yes, especially if their life is at stake. And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem. And then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards.	discussing addiction, SUD treatment, collaboration with addiction medicine, commitment to recovery, empathy, follow-up care, patient consent
	1003	Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be interested in doing that, but it's you know, right now, not practical. For me.	SUD treatment, follow-up care, knowledge, protocol

	1003	Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	changes over time, support for patient, SUD treatment, stigma , societal issue, collaboration with addiction medicine, multidisciplinary group
	1003	Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously. If it's some of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery.	follow-up care, post-operation care, relapse, SUD treatment, support for patient

	1005	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: Yes. Interviewer: If so, what questions did you ask, what are some of the terms you use to discuss addiction? Interviewee: I usually ask these patients what their preferred drug is and when they last used it. I asked them for the length of time that they used drugs, and if they've ever done any rehabilitation and if they're interested in rehabilitation. Interviewer: Have you heard of the term opioid use disorder or used it when talking with a patient? Interviewee: Yes, I've heard of that term, but I haven't used that term with a patient.	discussing addiction, SUD treatment, commitment to recovery, patient consent, priorities, risk evaluation
	1005	Interviewer: How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: Fairly knowledgeable. Interviewer: It wants me to get really specific. What are some of the available treatments for opioid use disorder? Interviewee: I see most patients these days come in on suboxone or some type of—we don't see methadone as much anymore, we usually see suboxone or one of the combined opioid agonist and antagonist drugs.	SUD treatment, knowledge
	1005	Interviewer: Do you want to receive more training on this? Interviewee: No. Interviewer: What do you think about drug rehab? Interviewee: I think it's excellent. Interviewer: Is it different than drug detox? Interviewee: Yes, but rehab can incorporate some aspects of detox, depending on the center.	rehab v detox, desired changes, SUD treatment

	1005	Interviewer: How should this patient in that vignette have the opioid use disorder treated and win? Interviewee: Well that patient's critically ill, so that patient needs to be—should probably be in the hospital for six weeks, because if she gets better from her shock and then gets tuned up and then have surgery, then she'll need probably two to four weeks of postoperative IV antibiotics in the hospital, and then we prefer to discharge straight to rehab.	post-operation care, SUD treatment, PICC line risk, follow-up care, save lives
	1005	Interviewer: What is the role of medications, they mean for opioid use disorder? Interviewee: The role of medications is hopefully to deter the patient from reusing their drug of choice and managing cravings and symptoms of desire for drugs. May I have a quick break to answer this page?	SUD treatment, desired changes, support for patient
	1005	Interviewer: Sounds familiar. Okay, so we were talking about the role of medications and then I'm gonna bridge this into psychotherapy and the role of psychotherapy. Do these treatments exist alone or do they need to be combined? Interviewee: I think they need to be combined.	SUD treatment, multidisciplinary group
	1014	I have a couple of patients seen on an outpatient basis and I send them both to them to make sure they are clean. This one, one of them, tricuspid, the right ventricle now has taken a hit, you know, she's been like this for a couple of years, and she needs an operation, and I asked her, are you using, and she promised no, I asked do you mind if you get seen by, you know, they will test you, they will make sure that you are ok, you are in a good spot for me to consider an operation. They come back infected, it is a different ball game. It's a different ball game. And we've been bitten before. I don't have the answers.	commitment to recovery, stigma , SUD treatment, follow-up care
	1014	I: Gotcha. How knowledgeable do you feel about the available treatments for people who use drugs? S: To a certain extent. You know, I mean, I mean, what do you mean treatments? I: Um, like, how knowledgeable are you about, like, methadone programs and treatment programs? S: I can, I can, you know, a little bit, but I, for me, all I need to do is to be the bridge to connect them with the right people, but I can't, I can't just have a deep, deep discussion. I: Do you want to receive more training on that	SUD treatment, priorities, lack of knowledge

		sort of thing? S: Why not? Yeah, absolutely.	
	1014	I: You kind of mentioned this before, what do you think about drug rehab, and how do you think it is different from drug detox? S: I would think so. Uh, here goes, I thought they were the same, but maybe one is longer-term than the other, you know. It's, it's, uh, I thought they were synonymous, somewhat, to a certain extent.	SUD treatment, rehab v detox
	1014	: What do you think the role of medications play in the treatment for…? S: I don't want to comment. I: How about psychotherapy? S: Important. I: Do you think these types of treatment exist alone or do they need to be combined? S: Combined.	SUD treatment, multidisciplinary group
	1014	How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that.	support for patient, deservingness, insurance, SUD treatment, risk evaluation, SES

	1009	What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back.	frustration, support for patient, SUD treatment, follow-up care, reinfection, support for surgeons, administration, desired changes
	1009	What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up.	support for surgeons, administration, SUD treatment, follow-up care
	1009	Re: the treatment of their addiction: How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	priorities, knowledge, time constraints, training, SUD treatment
support for patient			
	1012	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient	timing of SUD tx, follow-up care, support for patient, collaboration (secondary)

		counseling and they should transition to an outpatient support program.	
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	support for patient, SUD treatment, changes over time, desired changes, follow-up care
	1010	Have you ever discussed drug use with a patient like this? Yes. Every time. What questions did you ask? Like I said these appointments, these meetings on the floor are usually the longest once. Its not like alright three vessel disease, CABG. I always ask how they started and what happened. The amazing thing is that every single one of them will tell you they started with alcohol or marijuana. Every single one. I don't ask them if there are issues going on at home. If they want to say it, they will say it. And often times they do. I don't know if they say it because they open up or if because they want to justify why they did in their mind, but I just let them go. But during the discussion, the issue of drug use comes up. And often times they'll tell you they do it to sort of mask deeper symptoms that they have, other people will tell you they just did it because it was cool and everyone else was doing it. So, there is a multitude of answers there because it is a multifactorial issue. I don't think you can categorize it that all people who are addicted for the same reason.	support for patient, patient story, discussing addiction, stigma , societal issue, empathy

	1010	Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar.	societal issue, SUD treatment, accountability, support for patient, collaboration with addiction medicine
	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, tx compared to colleagues, support for patient, support for surgeons, deservingness, administration, frustration
	1019	Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them	pain management, support for patient, risk evaluation, protocol, post-operation care, empathy, lack of knowledge

		opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	
	1019	Um, what do you think about these options: PICC line and go home, PICC line and stay in the hospital, PICC line and go to the nursing facility? Well, they're all appropriate depending on… on [COUGH]… depending on the, uh, you know… depending on our social workers' assessments of the patients, of their level of responsibility, um uh, what their social supports are, um, and also what their own sort of recovery efficacy is.	PICC line risk, support for patient
	1019	You know. Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	PICC line risk, support for patient, risk evaluation, SES, cost, insurance

	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care
	1019	the hospital, PICC line and go to the nursing facility? Well, they're all appropriate depending on… on [COUGH]… depending on the, uh, you know… depending on our social workers' assessments of the patients, of their level of responsibility, um uh, what their social supports are, um, and also what their own sort of recovery efficacy is	PICC line risk, support for patient

	1019	Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	cost, insurance, SES, follow-up care, support for patient, PICC line risk
	1019	Okay [BOTH LAUGHING] Do you typically consult another service for their management? Yes, we usually consult pain service. These patients often end up on, uh… on PCA, uh, and, uh, and that those sorts of things. You know, they may… they may want to be… they might be more interested in controlling their own pain control than most patients and they tend to be more sensitive to it than most patients, so one way to actually reduce doses… uh, I can't quote literature on the subject, but, is to put them in control to some extent and let them control. And of course you put an upper limit on what they can take and then after that we have to decide whether it is reasonable to give them more than what's prescribed on their PCA, but… but, yeah. It's the… the… the… the general thing is that these patients tend to complain of a lot of pain afterwards Right …the pain is very hard to control. Their opioid requirement is higher than most patients, again, for fairly obvious reasons. But, you know, it's… it's… it's not my… I don't believe that it's ethically appropriate to make these patients suffer by not giving them opioids because they have an opioid addiction. I don't believe that's reasonable. I do believe at some point they have to be transitioned off, just like I would	pain management, lack of knowledge, protocol, empathy, support for patient, post-operation care

		any other patient. Umm, but I want to keep them comfortable. I want them to recover from their surgery.	
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	1019	Some patients have this… they bounce back from… they're ready to go home. Umm, you know, they have, uh… they have family that are very invested in… in having them get better and are willing to take care of this individual. And under those sorts of conditions with… with, you know, loving sort of relatives and so forth around the patient, I'm fine with sending the patient home. But there are others that are basically alone: they've got no social support, they have no money, they have no insurance, they still need the antibiotics. Those individuals may be best served either by staying in the hospital or going to a nursing	cost, insurance, SES, follow-up care, support for patient, PICC line risk
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the	follow-up care, support for patient, societal issue, administration, tx compared to broader

		inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, support for patient, stigma , data
	1016	I: Yeah, and that was helpful for the patient, that was able to control their pain? Did they have to have, like, any additional medicines? S: I don't know, I can't remember off the top of my head, if he was supplemented with additional medications, um, or if it maybe reduced the amount of additional medications that we needed. Um, in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners pre	pain management, lack of knowledge, support for patient, multidisciplinary group
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	discussing addiction, support for patient, patient consent, patient story, commitment to recovery, empathy

	1006	terviewer: What are some of the terms you use to discuss addiction? Interviewee: I use the word addiction, try and speak in laymen's terms without standing like I'm standing on a street corner, you know what I mean, 'cause there's a certain lingo. Rather than talking a lot about addiction, it's are you still using, for instance, that's all you have to say. They know what you're talking about, what are your plans to stop, have you ever stopped before. Probe their social network. The last person I spoke with didn't have any plans to go to rehab and seemed kind of resistance to it, but had allegedly strong familial support, and had signed off with a girlfriend who started him with heroin. There's always a certain amount of skepticism. I think by the time they see me they've already talked with several other physicians, so they know about what's gonna be asked, so they have their answers.	support for patient, discussing addiction, commitment to recovery, paternalism, follow-up care, frustration, patient story, priorities, societal issue, SUD treatment
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs. Interviewer: I think it just answered this, it wants me to ask you, do these types of treatment exist alone or do they need to be combined? Interviewee: Oh, absolutely combined.	SUD treatment, multidisciplinary group, support for patient, medical model, follow-up care
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually, they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a	desired changes, SUD treatment, societal issue, medical model, support for patient, changes over time, follow-up care

		method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	
	1006	Interviewer: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements, does your institution use this? Interviewee: I have no idea, I don't go to the meeting. I think having people that are interested, especially involving social workers. Surgeons are really kind of a minor part in the whole thing, it's the social worker, the psychotherapist, the person managing their in house care, that makes a bigger difference. If you discharge 'em back to the same awful environment without a whole lot of support they'll probably fall back in the same way of behaving	multidisciplinary group, support for patient, societal issue, lack of resources, futility, desired changes, follow-up care
	1006	Interviewer: Okay. To close, is there anything I haven't asked you about today that you'd like to add? Interviewee: Well, if we have those guidelines, I'd like to know where they are, 'cause I'd be interested in reading them. My other comment is just to reinforce the statements on what a huge difference the addiction medicine service made—when I heard that talk, it was several years ago, probably five. I thought well halleluiah, now there's some hope, 'cause otherwise just either treating a patient for four to six weeks on your service, or sending 'em back into the world to get reinfected.	collaboration with addiction medicine, protocol, changes over time, support for patient
	1002	Also, maybe I don't think it's going to be a good result, but we can think about – it totally depends. Maybe [Taver] or other – you know, those noninvasive surgeries might be – that's a tough question, but it might be doable for some cases. Then we need to find out the patient's past medical history, background, family drug use, family support – those kinds of things, as well, for the surgery, because even if we do the surgery, if she doesn't have great support, then why do we need to do the surgery? So yeah, those are the first things we come up with.	support for patient, risk evaluation, priorities, futility, patient story

	1002	Interviewer: Okay, and what kind of questions do you ask? Respondent: What kind of questions? The drug use history, how often, and then how much she's addicted, then the possibility of coming off those medications, and then what are the circumstances about family support or the environment of the drug use. How are the friends and family? Those kinds of things are important, I think.	discussing addiction, lack of resources, patient consent, support for patient
	1007	Okay. So have you ever discussed drug use with a patient like this? With a patient similar to this vignette? Speaker 2: Well that patient sounds like they're not stable or, or really alert enough to have thorough conversation. But yes, many times. Speaker 1: Since you've discussed something like this with patients, what questions do you ask and what are some of the terms that you use to discuss addiction with patients Speaker 2: In this particular patient or in general? Speaker 1: In general. Speaker 2: Well, I mean we want to make sure that patients have the support they need postoperatively to make a full recovery…Um, if they have support system where they live, whether they're on a therapy, um, whether the therapies enough to cover their cravings and so forth. That type of…	discussing addiction, patient consent, support for patient, follow-up care, SUD treatment
	1007	What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	support for patient, protocol, lack of resources, societal issue, tx compared to broader, perception of risk in PWID

	1007	All right. So what do you think about drug rehabilitation? Speaker 2: Um… Speaker 1: In general Speaker 2: It's a very open ended questions so I don't know how to answer it correctly for you. Speaker 1: Okay. We just want to know your perspective or what you think about drug rehab, compared to, well, not necessarily compared to, but we want to know your, your perspective on drug rehabilitation and drug detox. Speaker 2: What about it? Speaker 1: It's just about knowledge. I think it's just testing the knowledge from your end. That's it. Speaker 2: I'm not sure. Like, I mean we work with addiction medicine here. We know that there's programs in place, we try to encourage that. That's one of the first things we try to establish because that's what differentiates these patients from everyone else. Is that the have you social issue. So yeah, we were very supportive and tried to get it going early.	rehab v detox, support for patient, collaboration with addiction medicine, defensive
	1007	o you think the treatment for endocarditis in people who inject drugs will change in the future? Speaker 2: Yes. Speaker 1: Are there any changes you would like to see? Speaker 2: More social support. That's where the need is.	support for patient, societal issue
	1017	: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for patient, frustration, administration, follow-up care, lack of resources, multidisciplinary group
	1017	How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate	support for surgeons, desired changes, multidisciplinary group, follow-up care, timing of SUD tx, support for patient

		multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	
	1017	I: Do you think drug rehab is different than drug detox? S: Yes. In my mind, and that's…what my perception is, is that drug detox is more about the medical management of someone that is, um, coming off of, of, of these drugs, dealing with, um, withdrawal and other side effects of, um, removing these, whereas drug rehab, to me, is about long term abstinence and or, you know, addressing some of the other issues that led to their substance abuse.	medical model, withdrawal management, support for patient
	1017	How should this patient's opioid use disorder be treated and when? S: With respect to someone who has an infected valve? I: Um, yeah. Or back to the vignette with Katie, who, uh, yeah, has an infected valve… S: I think it needs to, well, ideally it starts in the hospital with establishing long-term relationships with professionals and a team that is going to manage their addiction. I: What does the role of medications play in that? S: I don't know. I'm sure there is a role. I: And how about psychotherapy? S: I'm a big fan. So, I think, I don't know, but I think there is a role.	support for patient, timing of SUD tx, follow-up care
	1017	So, what do you think about these three options? A PICC line and go home, a PICC line and stay in the hospital, and a PICC line and go to a nursing facility. S: I think they are… I: Like which is the safest option, which one's best for the patient? S: I think it depends on each, I think it's a individual choice, depends what resources they have available to them, and again where are they in their addiction and, you know, what we are doing to support them. So, in the, you know, uh, without any resources, probably the safest thing to do is to literally keep them in the hospital until their antibiotics are up, second safest thing is a nursing home, and third safest thing is home, but I think that is the most vulnerable that they are, although, you know, we have had these patients score drugs in the hospital, have friends bring them in, so, in some respects, for the patients that are truly, um, in the throes of their addiction, it doesn't matter where you send them. There is no safe place.	PICC line risk, support for patient, commitment to recovery, futility

	1017	If she was 5 years clean, so 5 years since she last used drugs? S: Um, yeah, that would be a little bit different, because they, they have a capacity for abstinence, and, um, if they did it because they, they sought treatment, and they had resources to, um, do that again, I think that would mediate things. If it's because they lost resources, they lost a job, they've had, um, family problems, and things that are unresolved that will not be resolved afterwards, then we are still back.	time between operations, deservingness, commitment to recovery, support for patient
	1013	s there someone you can call in the hospital with addiction medicine expertise? Yes, so we have got the addiction service Do you feel supported in your care of people who inject drugs? Yes. How do you think the hospital could support you more in the care of patients who inject drugs? Uh, I think that uh throwing more resources behind the whole addiction medicine effort. I think that um, I think there is a lot of ground to be gained there and I think that we need to continue to strive to be national leaders in that	collaboration with addiction medicine, support for patient, lack of resources
	1013	ome people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I don't think it is a very good parallel. I think, for a bunch of reasons, one is actually maybe the opposite of what one might be thinking. For liver transplant, you are thinking about a scarce resource so I actually think it is harder to defend using a scarce resource in a situation where someone may or may not have recovered from their alcoholism. If they are still using alcohol then I think it is hard to defend doing a liver transplant when it's a scarce resource but we have plenty of valves on the shelf, that's not the issue. So, I don't think it is a great parallel. Now if people want to say its related to, that the parallel has to do with behaviors then I would say a lot of diseases that we treat are related to our behaviors whether its obesity, diabetes which leads to coronary artery disease which we treat all the time, or smoking which leads to coronary artery disease which we treat all of the time I mean a lot of conditions that adults get there are behavioral factors that contribute, so I don't think that's a legitimate criticism.	liver vs heart, deservingness, empathy, societal issue, support for patient

	1013	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	PICC line risk, collaboration with addiction medicine, accountability, commitment to recovery, support for patient, timing of SUD tx
	1013	Do you think that treatment for endocarditis in people who inject drugs will change in the future? I think that, I hope that it will change to the extent that the most important thing is treating the underlying condition and getting source control. I think that every patient who gets this needs to have, needs to be adequately supported in a chance for recovery and I think it's a real embarrassment that in our healthcare system we are willing to spend tens of thousands of dollars to have a patient have a complex heart surgery but we are not prepared to provide them the support that's necessary to maybe keep them from having to have the heart surgery again. I think its just awful.	desired changes, cost, insurance, support for patient, deservingness, SUD treatment
	1003	So, back to the first question, about when I assess these patients; so, I look for medical indications, and then the other thing I have to consider is their social situation, and their ability to deal with the addiction problem. I think if someone is critically ill, they have a life-threatening problem, we will – at least I - will offer them surgery, no matter what their social and addiction situation is. You know, we like to have our patients comply with the programs that we have instituted here with psychiatry and addiction medicine, so that after the surgeries, they'll be in a rehabilitation program	support for patient, post-operation care, SUD treatment, save lives, follow-up care, discussing addiction, multidisciplinary group

		where they can hopefully have their underlying addiction treated successfully.	
	1003	we would recommend surgery. Soon, within the first few days of being contacted and notified. That would – if they're clinically sick, they may be [incubated], so I can't talk to the patient myself; but I would talk to the family members about the fact that this patient has a serious problem and won't survive without surgery, and might undertake the surgery, but then after surgery, she's going to have to be enrolled in a rehabilitation program. So, I would bring that up with the family beforehand. If the patient is awake and conscious, I would bring that up to, but – I would sort of lay the groundwork for that, but if they're critically sick like that, I think the most important thing is we get them to survive.	support for patient, risk evaluation, SUD treatment, priorities, patient consent, paternalism, commitment to recovery, discussing addiction, follow-up care, save lives, empathy
	1003	And then I would ask them what kind of family support they have. And get a sense of, do they have a job, and just get an overall assessment of their current lifestyle, and what their potential is for having a successful response to a rehabilitation. I don't go into great details about boyfriend, girlfriend issues and where they get their drugs from and – they – often times they [don't] want to volunteer that information anyhow. So, it's just – not – I don't really go into a tremendous, you know, half-hour discussion; I just kind of get a sense of where they've been; where they are now; and hopeful – and get a sense of what their potential is for recovering from the addiction problem.	SES, commitment to recovery, support for patient, patient story, empathy
	1003	nd then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards. Interviewer: How do you like, bring him in, into your cases? Respondent: Well, fortunately he's been with us for about a year, so I – when I go see a patient, once I assess them, I, if he hasn't seen the patient yet, I notify the medical team to get in contact with him, and he's pretty good at coming to see a patient within 24 hours.	collaboration with addiction medicine, support for patient, support for surgeons, follow-up care, SUD treatment

		And so, that's great. And then, I stay in contact with him and you know, tell him the surgery is scheduled and he'll see the patient afterwards, too. So, it's been a good collegiality – collegial relationship – colleagues and addiction medicin	
	1003	And what do you think about like, drug rehab? Do you think it's different – is it different than drug detox? Do you think it's - Respondent: Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	stigma , societal issue, timing of SUD tx, multidisciplinary group, medical model, regional differences, follow-up care, changes over time, support for patient

	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone. Interviewer: Interesting. Okay. Respondent: A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months with alcohol before they're willing to – [unintelligible 0:20:49]?	second chance, liver vs heart, save lives, support for patient, paternalism, accountability, commitment to recovery
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the	post-operation care, PICC line risk, futility, frustration, follow-up care, perception of risk in PWID, desired changes, protocol, support for patient

		hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	
	1003	So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates.	support for patient, support for surgeons, tx compared to colleagues, multidisciplinary group, risk evaluation, time constraints
	1009	Interviewer: How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	disagreements (professional), accountability, desired changes, societal issue, support for patient

	1011	I do feel that these patients are in a very vulnerable situation, they have a lot of stresses going on in their life, and there is a lot that they have to figure out, especially someone who comes in who was actively using drugs at the time of their intervention, and the idea that they are going to go through this big operation, they are going to clean themselves up right away is sometimes too much to ask of them. It is not uncommon, I think for us to see some relapses before the patient eventually can fully quit.	relapse, empathy, paternalism, support for patient
	1011	What questions do you ask? Charlie, what drugs were you using? When was the last time you used it? Have you tried quitting in the past? And then I ask them what their social support system is because I think that is what is going to prevent them from using drugs again.	discussing addiction, support for patient
	1011	How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	lack of resources, accountability, post-operation care, data, follow-up care, support for patient
	1011	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Well I guess one of the things that is easier is valve choice. The older they are the choice of putting the bioprosthetic valve rather than the mechanical becomes a little more justifiable from just a guideline perspective. It also, someone who has made it to 55, I don't know what the expected survival of folks who do drugs is, but I think, I would think that this is someone, the 25 year old would be in much worse shape than someone who is 55, because they have a long way to go if they can get there. It is going to be a much harder thing for	age, support for patient, valve preference, stigma , seriousness

		them to clean up, I think, because I think you are in a different place in your life and different priorities and interactions and relationships that are different. I don't know what a definitive answer you are looking for, but I do think those two patients are going to be different.	
	1011	maybe that is where we need more resources from the hospital because these patients are otherwise ok and all they need to do is get antibiotics and not do drugs. I think sending them home with a PICC line is unfair to them. They are just out of a big physical, emotional experience of undergoing heart surgery and to put them in a position where the, I think the temptation is just too great you know, nothing about their social circle has changed, whomever their drug suppliers are, the people who were helping them prior and going to probably still be in their circle it is not necessarily a great social situation most of the time. It's not like these patients are going back to their families, their grandparents, or an aunt, a cousin, they are renting a place, living on their own and to send them out into that situation with a PICC line and to be their own police I think is a little too much to ask of them.	lack of resources, administration, empathy, frustration, support for patient, PICC line risk, paternalism
	1011	Any specific things that help you choose, like housing, insurance, job status, childcare? And I asked about those things just from a standpoint as to where they are in their life, a lot of these patients are, uh, they do have small kids and they're taking care of them or someone else is taking care of them- the whole family, partner situation is not always the stable one, this kind of thing. I do ask about that, but I don't think that necessarily impacts what we do.	risk evaluation, support for patient, insurance
	1011	I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one	pregnancy, medical model, multidisciplinary group, support for patient, support for surgeons

		additional thing that I have to but not let that impact the decision making.	
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	support for patient, timing of SUD tx, multidisciplinary group, follow-up care
	1017	I: How should this patient's opioid use disorder be treated and when? S: With respect to someone who has an infected valve? I: Um, yeah. Or back to the vignette with Katie, who, uh, yeah, has an infected valve… S: I think it needs to, well, ideally it starts in the hospital with establishing long-term relationships with professionals and a team that is going to manage their addiction. I: What does the role of medications play in that?	time of treatment, follow-up care, support for patient
	1017	I: If she was 5 years clean, so 5 years since she last used drugs? S: Um, yeah, that would be a little bit different, because they, they have a capacity for abstinence, and, um, if they did it because they, they sought treatment, and they had resources to, um, do that again, I think that would mediate things. If it's because they lost resources, they lost a job, they've had, um, family problems, and things that are	time between operations, multiple surgeries, commitment to recovery, deservingness, support for patient

		unresolved that will not be resolved afterwards, then we are still back.	
	1013	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I don't think it is a very good parallel. I think, for a bunch of reasons, one is actually maybe the opposite of what one might be thinking. For liver transplant, you are thinking about a scarce resource so I actually think it is harder to defend using a scarce resource in a situation where someone may or may not have recovered from their alcoholism. If they are still using alcohol then I think it is hard to defend doing a liver transplant when it's a scarce resource but we have plenty of valves on the shelf, that's not the issue. So, I don't think it is a great parallel. Now if people want to say its related to, that the parallel has to do with behaviors then I would say a lot of diseases that we treat are related to our behaviors whether its obesity, diabetes which leads to coronary artery disease which we treat all the time, or smoking which leads to coronary artery disease which we treat all of the time I mean a lot of conditions that adults get there are behavioral factors that contribute, so I don't think that's a legitimate criticism.	liver vs heart, support for patient, societal issue, deservingness, empathy
	1013	So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	priorities, commitment to recovery, PICC line risk, collaboration with addiction medicine, timing of SUD tx, support for patient

	1007	So you operate on Katie from the first vignette and she does well, she's linked to a Methadone maintenance program. About one year later, she's back to the hospital and she has prosthetic valve endocarditis. So have you seen prosthetic valve endocarditis in people who inject drugs? Speaker 2: Yes. Speaker 1: Okay. Any specific cases come to your mind? Speaker 2: Too many there. Speaker 1: Tell me your thoughts about management decisions for these relapse cases. Speaker 2: Well, I mean we manage them the same as any other patient. You um, you know, assessing the risk, the benefit, surgery, support system. Speaker 1: Okay. So does it impact your decision to operate if the endocarditis is related to drug use? Speaker 2: Yeah, everything impacts our decision to operate.	patient story, relapse, pre-operation care, support for patient
	1001	Interviewer: For Katy, do you think her opiate use disorder should be treated? Respondent: I believe so. I think drug use is not just a social issue. It is a disease, you know? I don't know if there is currently a definition for that, but that's just my personal opinion. I think they should be fairly treated, offered all the options, and carefully monitored with follow-up. It's a complex medical issue, not just a social issue.	SUD treatment, societal issue, empathy, deservingness, support for patient, follow-up care
	1004	R: It's complicated, there's a risk/benefit. Is she willing to do rehab, does she have a supportive family, has she been hospitalized before for her substance use or for her endocarditis?	commitment to recovery, deservingness, discussing addiction, priorities, support for patient, risk evaluation
	1004	I: is there someone you can call in the hospital with addiction medicine expertise? R: yes, he's added psychiatry and psychology support to patient care, the hospital has really only treated the acute physical needs before him. He's great, especially if the patient doesn't have a lot of social support.	collaboration with addiction medicine, support for patient, support for surgeons
	1005	Interviewer: Do you feel supported in your care of people who inject drugs? Interviewee: Yes. Interviewer: How do you think the hospital could support you more? Interviewee: I think we have a great addiction program here. We have trouble getting these patients admitted to the hospitalist service,	support for patient, support for surgeons, pre-operation care

		and the hospitalist service could support us more in admitting these patients as they typically require prolonged preoperative evaluation and time before we take them into surgery.	
	1005	The role of medications is hopefully to deter the patient from reusing their drug of choice and managing cravings and symptoms of desire for drugs.	desired changes, support for patient
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we should, but I think without it the problem will always return. People can rarely do this on their own.	SUD treatment, data, support for patient, stigma
	1018	And to close, is there anything I haven't asked you about today that you would like to say? I have had friends, good friends suffer this, none with endocarditis, but I have seen what it did to their lives and maybe that is why I have a slightly different perspective on it. No one in my family has had that or endocarditis, so that is the personal side of it.	patient story, empathy, support for patient, societal issue
	1012	How did you approach that case? I replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	protocol, priorities, support for patient, accountability, defensive
	1012	The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous	accountability, societal issue, lack of knowledge, support for patient, empathy, follow-up care, lack of resources

		antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	
	1012	ave you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	empathy, discussing addiction, support for patient, training, mechanical problem, societal issue, save lives
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so	administration, cost, accountability, insurance, support for patient, support for surgeons, SUD treatment, follow-up care, societal issue

		therefore I think it has to be a government program to prevent the problem.	
	1012	What do you think about drug rehab? Uh, I think it's, I think it's necessary for most patients to get over this problem, intense rehab, drug rehabilitation, I think it's necessary. And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	rehab v detox, follow-up care, support for patient, timing of SUD tx
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	contract, collaboration with addiction medicine, paternalism, multiple surgeries, tx compared to colleagues, support for patient, frustration
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	follow-up care, support for patient, societal issue, administration, tx compared to broader
	1018	What do you think about drug rehab? Hm. Well it's vital, I don't have information on its efficacy. I don't know if there are other components of it that we are not using as we	SUD treatment, support for patient, stigma , data

		should, but I think without it the problem will always return. People can rarely do this on their own.	
	1005	Interviewer: Do you feel supported in your care of people who inject drugs? Interviewee: Yes. Interviewer: How do you think the hospital could support you more? Interviewee: I think we have a great addiction program here. We have trouble getting these patients admitted to the hospitalist service, and the hospitalist service could support us more in admitting these patients as they typically require prolonged preoperative evaluation and time before we take them into surgery.	support for patient, support for surgeons, pre-operation care
	1005	The role of medications is hopefully to deter the patient from reusing their drug of choice and managing cravings and symptoms of desire for drugs.	desired changes, support for patient
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	support for patient, timing of SUD tx, multidisciplinary group, follow-up care
	1017	I: How should this patient's opioid use disorder be treated and when? S: With respect to someone who has an infected valve? I: Um, yeah. Or back to the vignette with Katie, who, uh, yeah, has an infected valve… S: I think it needs to, well, ideally it starts in the	time of treatment, follow-up care, support for patient

		hospital with establishing long-term relationships with professionals and a team that is going to manage their addiction. I: What does the role of medications play in that?	
	1017	I: If she was 5 years clean, so 5 years since she last used drugs? S: Um, yeah, that would be a little bit different, because they, they have a capacity for abstinence, and, um, if they did it because they, they sought treatment, and they had resources to, um, do that again, I think that would mediate things. If it's because they lost resources, they lost a job, they've had, um, family problems, and things that are unresolved that will not be resolved afterwards, then we are still back.	time between operations, multiple surgeries, commitment to recovery, deservingness, support for patient
	1004	yes, he's added psychiatry and psychology support to patient care, the hospital has really only treated the acute physical needs before him. He's great, especially if the patient doesn't have a lot of social support.	collaboration with addiction medicine, multidisciplinary group, support for surgeons, support for patient
	1016	in terms of narcotics, um, but there are, there are anesthetics, you know, if you really want to engage the, like the anesthesia team, there are blocks and other kind of local things that they can do. I will say that the majority, I think, my protocol for my team is that, if I do have a patient with IV drug use, um, we are very proactive in consulting the pain service, so that it is not all on my nurse practitioners so that there's, um, there's the pain service. And I don't know, from the patient perspective, if they, because it is the official pain service, if they, um, follow, I don't want to say follow their recommendations more, but are more likely to listen to their recommendations, um, versus just having one of my nurse practitioners prescribe.	pain management, multidisciplinary group, support for patient, lack of knowledge
	1006	Interviewer: Have you ever discussed drug use with a patient like this? Interviewee: If they're not intubated. Yes, I do a lot. Interviewer: If so, which questions do you ask? Interviewee: Oh, how long they've been using, whether they've been in a rehab program previously, what their social situation is, whether they knew that valve infections were a risk using intravenous heroin, what their plans were for rehabilitation.	commitment to recovery, discussing addiction, empathy, follow-up care, relapse, perception of risk in PWID, societal issue, second chance, support for patient

	1006	Interviewer: What do you think about drug rehab? Interviewee: It's really their only chance if you don't do it. This goes back a experience in my residency, there was a young woman—I don't want to identify, if I tell you I was a resident. This young woman came with mitral valve endocarditis, terrible mitral insufficiency, and the person who was rotating in front of me replaced her valve. She was discharged without any rehab, she was back in my service, she was found in a woman's bathroom in a bus station. She still had a needle in her arm, and she had re-infected her valve. Actually, she'd had another valve in the interim, so this was her third infected valve, one native and two prosthesis in the course of about six to eight months. I got into a pretty spirited with the cardiologist because I refused to operate on her. The cardiologist said of course you have to, the patient's gonna die. I said without adequate treatment for addiction she's dead anyways, so what's the point of putting her through another operation. The data from that year supported, there was a paper out of—it was Detroit, I think Henry Ford Hospital, but it was definitely from Detroit where they talked about recidivism rates in IV drug abusers, and they're terribly high. Then by the time your second time recidivism with an infected valve, the mortality was essentially 100 percent, you're gonna keep relapsing.	patient story, SUD treatment, commitment to recovery, deservingness, disagreements (professional), follow-up care, frustration, futility, relapse, perception of risk in PWID, risk evaluation, save lives, second chance, societal issue, stigma , support for patient, multiple surgeries
	1006	Interviewer: What is the role of medications? Interviewee: As they say like the three legged stool, social services, psychotherapy and drugs.	SUD treatment, support for patient, follow-up care, medical model, multidisciplinary group
	1006	Interviewer: Any other changes, any other ideas for improvements in the system as it is? Interviewee: Well the scary thing is the emergence of multidrug resistant organisms that are common, that's gonna be a challenge. Surgical methods, if you could develop a truly viable valve, it'd probably have a better chance of—especially the infected prosthetic valves. Really, surgical methodology, there's room for some improvement, but not huge. I think there's huge chance for improvement in—sort of a sweeping statement, alleviating rural poverty and despair, it's a huge problem. I was talking to somebody who's in industrial medicine, and there are factories that actually,	support for patient, SUD treatment, changes over time, desired changes, follow-up care

		they fold and just go somewhere else, because the prevalence of drug screen positive applicants to their implants is so high, they say we can't hire any of these people. How do you fix that? It's a rather large problem. Then the addiction medicine, like I said if you had a method probably combined psychotherapy and medical—or medication that really eliminated the craving would help a lot.	
	1012	I replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	support for patient
	1012	eah. The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that support and they often will fall right back into the same um, situation that got them there in the first place.	medical model, follow-up care, support for patient
	1012	Have you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're	support for patient, training, mechanical problem

		going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	support for surgeons, administration, cost, accountability, support for patient, insurance, societal issue
	1012	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	timing of SUD tx, follow-up care, support for patient

	1010	What do you think about drug rehab? Do you have thoughts on drug rehab? Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar. How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service. And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	SUD treatment, accountability, societal issue, support for patient, collaboration with addiction medicine
	1014	I: Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions. How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social	second chances, deservingness, support for patient, SUD treatment, insurance, risk evaluation, SES

		means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that. Am I confusing you?	
	1003	Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	changes over time, support for patient, SUD treatment, stigma , societal issue, collaboration with addiction medicine, multidisciplinary group
	1003	Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously. If it's some	follow-up care, post-operation care, relapse, SUD treatment, support for patient

		of that's going back to using drugs again, and that's thought to be the source of the new infection, I will talk to them and get a sense of the – if they have any remorse about using drugs again, or are they - sincerely accept the fact that they made a mistake and are they willing to once again, are they willing to undergo an attempt to treat their underlying addiction after the second surgery.	
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	PICC line risk, desired changes, medical model, protocol, support for patient, tx compared to broader

	1003	Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive. So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates. I just wish there was more – I just wish all the people involved in the care of these patients realize that there's certain times you've got to move ahead and intervene soon. So, it's part of my job, actually, to educate people. And it's been a struggle. Yeah.	support for surgeons, support for patient
	1005	Interviewer: How do you think the hospital could support you more? Interviewee: I think we have a great addiction program here. We have trouble getting these patients admitted to the hospitalist service, and the hospitalist service could support us more in admitting these patients as they typically require prolonged preoperative evaluation and time before we take them into surgery.	support for surgeons, pre-operation care, support for patient
	1005	Interviewer: What is the role of medications, they mean for opioid use disorder? Interviewee: The role of medications is	SUD treatment, desired changes, support for patient

		hopefully to deter the patient from reusing their drug of choice and managing cravings and symptoms of desire for drugs. May I have a quick break to answer this page?	
	1014	We're, we're not, we should not be in the trenches dealing with these patients. We are the wrong people. The fact that we offer them a, um, a big, traumatic, you know, therapy with surgery, involves big cut and a big operation doesn't mean that we are the people who can manage them long-term. We are the most ill-equipped people to do that. We don't understand addiction disorders. We don't understand drug abuse. We don't under…we're heart surgeons. The fact that we are in the trenches dealing with these patients just because we have to, at some point in their lives, but this should just be short-lived and other people should take over	lack of knowledge, lack of resources, follow-up care, desired changes, frustration, post-operation care, support for patient
	1014	Does it impact your decision to operate if their endocarditis is related to drug use? S: Second time around? I: Mm-hmm. S: I mean, yeah. Because, I mean, this is the second time around, and then what? And then what? In here, you start, in here, there is a bias, there is a little bit of a, um, insidious, um, bias that we need to be careful because sometimes, and then sadly my patients, my partners, I can hear, uh, this one comes from a good family, they have good support, they can go to good rehab, so maybe I give them a shot. And, this patient, no, he is coming from under a bridge, he has no support, so probably likely he is going to fail, so why am I going to operate? So here, those decisions, we are not supposed to make them. We are ill equipped to make those decisions.	second chance, support for patient
	1014	How do we know that the son of a wealthy family, that they are going to send him to a phenomenal rehab center, and, maybe that's the truth, because we know from other stuff, like people with schizophrenia, you know, people that, there's very famous studies, I mean, I've known it since medical school, schizophrenics who are high up on the social scale do better than, than, than poor people with limited social means because those have good support. They get their, you know, and they live longer, whereas the other ones degenerate and they die earlier. So, and maybe from that, we transpose it to this disease. Maybe we're wrong, we just don't know. Maybe patients from good families, you know, yeah they will get a better, you know, rehab, therapy and all these things, and ensure	support for patient, deservingness, insurance, SUD treatment, risk evaluation, SES

		that families will be all over them and money will be available and stuff like that, but then again, those are the guys with maybe more problems and more funds to buy more drugs and go back to square one. So, we're not sure that we're doing the right thing, I think, this is, at a minimum, a judgmental decision and biased and likely wrong, and we just don't know about it, but sometimes those decisions, those components for a decision-making act and play, and we, I don't have the answers for that.	
	1009	What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back.	frustration, support for patient, SUD treatment, follow-up care, reinfection, support for surgeons, administration, desired changes
	1009	In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery.	support for patient, multidisciplinary group, post-operation care, follow-up care
support for surgeons			
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons

		good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that area it would be good, then they would undoubtedly spring up another block away, so.	
	1010	We don't have that in medicine, you don't have the option to say I do not feel comfortable exposing myself to this, I mean I am willing to take a chance when I don't know a patient has it, but if I have you know a drug addict with a high viral load I don't have the right in paper at least to say I do not feel comfortable operating. And maybe I shouldn't. I don't know. But it is something I think about. And the second thing that I think about is if you are a police officer and you get shot on the job, there is a huge mechanism to support you and your family, to support your family because you are gone, same if you are a firefighter and you are killed in fire. I think if something happened to me, my family would have a very hard time getting through. Because we as a profession lack the mechanisms to support each other. We actually do the opposite we don't treat each other well. So, because of these three reasons it does cross my mind a lot when I operate.	infection risk to surgeons, support for surgeons, disagreements (professional)
	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, tx compared to colleagues, support for patient, support for surgeons, deservingness, administration, frustration

	1010	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes Who comes to these meetings and has it been helpful? Surgeons, cardiologists, infectious disease, and then addiction slash psychology and social workers. And yes, it is helpful.	multidisciplinary group, support for surgeons
	1010	I would like people in various consulting services to use discourse and open-mindedness not as a talking point but as a good thing, as a virtue, something that has to happen when you take care of patients. I think that sometimes people are rushed to uh, you know they come in with preconceived ideas about who you are and what you are going to do, and I don't think that is fair, I don't think that is right.	support for surgeons, collaboration with addiction medicine, desired changes, disagreements (professional), multidisciplinary group
	1019	Um, do you feel supported in your care of the people who inject Absolutely. …drugs here? Okay, good. Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium, uh, these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is	cost, support for surgeons, lack of resources, age, SES, insurance

		making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	
	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	administration, support for surgeons, PICC line risk, futility

	1019	Um, do you feel supported in your care of the people who inject Absolutely. …drugs here? Okay, good. Um, is there anything that the hospital could support you more with? I don't think so. You know, the only… the only issue to my mind, um, you know it's… it's… it's, uh… it's a resource issue, is that a lot of these patients unfortunately are young. You know, they don't exactly how their life together. I don't know how to put it any other way. So, you know, they often don't have steady jobs, they don't have insurance, that sort of thing. So, we do these operations and they end up on 6 weeks of intravenous antibiotics. They've got nowhere to go. So, they… they clog up hospital beds. Um, I don't know how to say it any other way. You can't discharge them. So they are basically bound to a hospital bed for six weeks, which, in a place like this, which… in which beds are… beds are at a premium, uh, these patients take up a lot of beds and they use a lot of resources. You know, and… and again, um, speaking purely logistically… you know, purely unemotionally about this…. but just purely logistically, they're expensive patients because they require a lot of therapy for a long time and the hospital is making nothing for it. Um, you know… other than whatever state subsidies we… we receive for the care of so-called indigent patients [COUGHING]. Does that influence my decision to operate on them? Absolutely not. But, my point is, that, um, when you… when you ask a question about hospital resources… you know, our hospital resources are at a premium and, you know, these patients are, uh… they do tax those resources. There's just no doubt. They do, more so than most patients we take care of.	cost, support for surgeons, lack of resources, age, SES, insurance
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons

		endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams	multidisciplinary group, pain management, lack of knowledge, support for surgeons, post-operation care
	1016	I: Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	support for surgeons, pain management, follow-up care, post-operation care, multidisciplinary group
	1006	Interviewer: Do you worry about getting viral infections like hep C and HIV? Interviewee: Me personally? Interviewer: Mm-hmm. Interviewee: No, I take every vaccine that comes along, and there's a cure for hep C now, hope they'll be one for HIV.	infection risk to surgeons, changes over time, support for surgeons

	1006	Interviewer: Is there someone you can call in the hospital with addiction medicine experience and expertise? Interviewee: We have a whole service. Actually, a few years ago I went to—it was a small group, kind of grand rounds type thing, I can't remember who sponsored it. It may have been infectious disease where the person from addiction medicine spoke, it was quite interesting.	collaboration with addiction medicine, multidisciplinary group, administration, support for surgeons
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good.	support for surgeons, changes over time, follow-up care, PICC line risk, administration, collaboration with addiction medicine, futility, societal issue
	1002	Interviewer: Do you feel supported right now when you care for this patient population? Respondent: I think so. Interviewer: Is there anything the hospital could do more to support you? Respondent: I don't know.	support for surgeons
	1007	Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect because it's not, it's not so much a surgical…	support for surgeons, cost, data, societal issue, lack of resources

	1017	How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	support for surgeons, desired changes, multidisciplinary group, follow-up care, timing of SUD tx, support for patient
	1017	How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	tx compared to broader, multidisciplinary group, support for surgeons, administration
	1017	Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	frustration, desired changes, multidisciplinary group, support for surgeons, accountability, disagreements (professional)

	1003	nd then we have, you know, Dustin Patil, our new psychiatrist. I would make sure he's involved and I may – sometimes I bring up his name, then he'll be involved in their care, while they're in the hospital and perhaps afterwards. Interviewer: How do you like, bring him in, into your cases? Respondent: Well, fortunately he's been with us for about a year, so I – when I go see a patient, once I assess them, I, if he hasn't seen the patient yet, I notify the medical team to get in contact with him, and he's pretty good at coming to see a patient within 24 hours. And so, that's great. And then, I stay in contact with him and you know, tell him the surgery is scheduled and he'll see the patient afterwards, too. So, it's been a good collegiality – collegial relationship – colleagues and addiction medicin	collaboration with addiction medicine, support for patient, support for surgeons, follow-up care, SUD treatment
	1003	Respondent: Well, I would like to see his efforts supported. Right now, he's the only one we have. I think – this is going to - I want the hospital to support him. In terms of me, my efforts, well I've got no major issues there. I mean, if I book someone up for surgery, then I don't [meet] any resistance from the hospital. They, you know, they don't – they trust our judgement about who needs an operation, and then our job to do a – execute, and do a good operation. So not particularly. I don't have any outstanding conflicts with the hospital in terms of support for the program.	collaboration with addiction medicine, support for surgeons, administration, discussing addiction, multidisciplinary group
	1003	So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates.	support for patient, support for surgeons, tx compared to colleagues, multidisciplinary group, risk evaluation, time constraints

	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	multidisciplinary group, collaboration with addiction medicine, support for surgeons, accountability, frustration, futility, lack of resources, post-operation care

	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to	support for surgeons, administration, tx compared to broader, accountability, desired changes, follow-up care, frustration, lack of resources, post-operation care, multidisciplinary group

		do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	
	1011	Do you worry about getting viral infections like Hep C and HIV? Um, I do. I worry not only for myself but also for the staff that is taking care of these patients, I worry for my family if I were to get infected. So, I think those are just normal human reactions, but I worry about that stuff for anybody who has hepatitis C.	infection risk to surgeons, support for surgeons
	1011	Do you feel supported in your care of people who inject drugs? Yes, so I, you know I think this is a great issue that we have started that we have this multidisciplinary team now that we meet, we schedule, we meet scheduled once a month but we can also call for ad hoc meetings if there is a patient that was extremely challenging and we needed help managing that. Its composed of the addiction treatment team, the ID team, cardiothoracic surgeons, their primary care providers or whomever is taking care of the floor, and really when we started the process it was interesting to watch how the team has evolved, because I remember when we started the process a couple years ago, everyone was coming at it from different perspectives and everyone had	multidisciplinary group, support for surgeons, empathy, changes over time, collaboration with addiction medicine

		the patients best interest in heart but I don't think they were seeing what the other teams were seeing. You know the addiction team most of the time was saying you need to operate on these patients because that is what needs to happen and the surgeons were reluctant because of obvious reasons but what I find very interesting is that more often than not recently everyone is on the same page, or trying to get on the same page. There is much less arguments or disagreements as to what the best plan of care is for these patients might be.	
	1011	How knowledgeable do you feel about the available treatments for people who use drugs? Um, I've learned some going to our multidisciplinary team meetings. Um, I don't consider myself to be an expert or even a specialist in that, but I am glad that I know people, I know who to call. Would you want to receive more training on this? In my current situation I feel very well supported by the teams that we have put together. I think that what that allows me to do is to focus on what I need to do, and I can completely rely on them to, let them do what they do best.	support for surgeons, knowledge, time constraints, multidisciplinary group, training
	1011	I mean pregnancy in cardiac surgery is a very emotional and touchy topic, but um, but I think what to do in that situation is take care of Katie first. You would get the other teams involved and would do everything that needs to be done to protect the baby and you know there are medical things that would determine- if it was early first trimester, then you can't really focus your attention on that, if it is late third trimester and the baby is viable then sometimes , you would get the teams involved to do whatever they think is needed. So, you would do whatever needs to be done but I don't think that, I would, I would try to separate the two things, take care of that one additional thing that I have to but not let that impact the decision making.	pregnancy, medical model, multidisciplinary group, support for patient, support for surgeons
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration

		one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	
	1017	I: How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	tx compared to broader, multidisciplinary group, support for surgeons, administration
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group
	1013	Do you feel supported in your care of people who inject drugs? Yes.	support for surgeons
	1013	How do you think the hospital could support you more in the care of patients who inject drugs? Uh, I think that uh throwing more resources behind the whole addiction medicine effort. I	support for surgeons, lack of resources

		think that um, I think there is a lot of ground to be gained there and I think that we need to continue to strive to be national leaders in that	
	1015	: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	support for surgeons, accountability, follow-up care, administration, frustration
	1007	Speaker 1: Yeah. Thank you. So is there someone you can call in the hospital with addiction medicine expertise? Speaker 2: Absolutely. I mean, at our hospital, very… probably the best in the city for addiction. So it's good to be working carefully with them. Speaker 1: Um, do you feel supported in your care of people who inject drugs? So do you have a very good support system from the hospital? Speaker 2: We um, yes and no. Um, there's a lot of room for improvement, but we, we are focused on developing that and we do have some of the resources. Speaker 1: Okay. That's good. Um, how do you think the hospital can support you more? Since as you said yes and no? Is there, what are your suggestions for better support from the hospital? Speaker 2: Um, more, um, well, one, one would be more funding for the social aspect because it's not, it's not so much a surgical… Speaker 1: Okay. So I had asked you about suggestions for the hospital to improve. Speaker 2: Support? Speaker 1: Yea, support Speaker 2: What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these	support for surgeons, societal issue, lack of resources

		patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	
	1001	Do you worry about getting viral infections like hep C or HIV? Respondent: Myself? Of course. Yeah, I think everybody is concerned, you know? But these days it's a little bit better. We do notice that there have been improvements in the therapies. With HIV and hep C, a lot of people can carry the virus for a longer period of time without obvious sign of infection. I think [unintelligible 00:05:18] now, so making the surgeons feel better or healthcare professionals feel better when we deal with the patient when they clearly have the disease.	infection risk to surgeons, changes over time, support for surgeons
	1001	Interviewer: Okay, and do you currently feel supported when you're caring for patients in this population? Respondent: Yeah, and I think most of my colleagues share the same perspective. You know, there is really no conflict among us. We have our own standards, and if we need help – that's usually the case from the effects of the disease – you know, ethic committees. So they're around. They are available.	support for surgeons, tx compared to colleagues, multidisciplinary group
	1001	nterviewer: Okay, is there anyway you think the hospital could support you more? Or you feel quite supported? Respondent: I wouldn't say – I think [unintelligible 00:14:13]. We've been waiting to take on the [tough] cases, the patients who are not covered. Certainly this is not just our problem; this is society's issue. It's going to be	support for surgeons, societal issue

		the focus. I don't think there's anything that could be done better so far.	
	1001	Interviewer: Do you find yourself consulting other services for pain management issues? Respondent: I almost routinely consult, yeah. So the two services – this is why I would hope there would be a program here. That way there would be a multidisciplinary care on each single patient who has such a history, but currently we have to call the individual [consult service] – for example, the drug addiction service and psychiatry. I cannot [tell you] how much they are able to help if they are willing, just because this group of patients always is challenging to everybody. So I think overall we are doing the best we can.	support for surgeons, pain management, multidisciplinary group, stigma , collaboration with addiction medicine
	1001	Interviewer: Can you tell me about your experience managing withdrawal in this population? Respondent: You know, I've seen that before. I've seen all kinds of withdrawal, not just from narcotics – also alcohol, you know? But when it occurs, or clinically we suspect withdrawal, then we bring in the specialist. Certainly those patients will be carefully monitored and medicated.	withdrawal management, support for surgeons, multidisciplinary group, collaboration with addiction medicine
	1001	Interviewer: Have you ever personally experienced conflict with your team or other staff members in working with these patients? If so, how was it resolved, and what was the outcome? Respondent: I don't think so. Yeah, I am more interested in taking care of a patient surgically, but I know it's a challenging process. So I have been relying on the specialists who help me take care of these patients. So there are things I don't know, and try not to interfere there in the area where I have not much knowledge.	support for surgeons, lack of knowledge, disagreements (professional), collaboration with addiction medicine

	1001	Interviewer: This is the final question. Some hospitals have a multidisciplinary group to evaluate people who inject drugs. Do you know if that's done here? Any times that you're ever meeting with a multidisciplinary group? Respondent: I'm not sure if we have an official team. I think we've been talking about it for some time. Since I'm not taking care of a lot of these patients [off-mic], I may take care of an endocarditis patient once or twice a year. It's just not my own personal interest. So I'm not aware if we have a formal, interdisciplinary team, but certainly the process is something that requires a team approach. And that's being done, but I just don't know if we officially have such a team. Interviewer: Okay, but you think it would be helpful? Respondent: Yeah, absolutely. I think those patients should be taken care of by surgeons, medical specialists, psychiatrists, pharmacists – from every perspective to develop a plan.	support for surgeons, multidisciplinary group, follow-up care
	1004	I: is there someone you can call in the hospital with addiction medicine expertise? R: yes, he's added psychiatry and psychology support to patient care, the hospital has really only treated the acute physical needs before him. He's great, especially if the patient doesn't have a lot of social support.	collaboration with addiction medicine, support for patient, support for surgeons
	1005	Interviewer: Do you feel supported in your care of people who inject drugs? Interviewee: Yes. Interviewer: How do you think the hospital could support you more? Interviewee: I think we have a great addiction program here. We have trouble getting these patients admitted to the hospitalist service, and the hospitalist service could support us more in admitting these patients as they typically require prolonged preoperative evaluation and time before we take them into surgery.	support for patient, support for surgeons, pre-operation care
	1005	No, I think there's two of us on staff that do the majority of this work. One of our surgeons isn't as comfortable with valve operations, so naturally he doesn't do as many endocarditis operations as others of us do. Some of our junior staff aren't as comfortable with the reoperations or the aortic roots. We just pass	disagreements (professional), support for surgeons

		these patients amongst ourselves if we feel like they need to be treated by a different surgeon.	
	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	collaboration with addiction medicine, support for surgeons, PICC line risk, administration
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons
	1018	Tell me about your experience with managing pain in this population. Well usually I hand it off to a specialized team which I know is very important because I really believe that control of pain is absolutely critical to our surgical patients and requires someone with a much more sophisticated understanding of control of pain than I have. And who do you usually rely on for that? Well, it starts in the ICU and frankly the intensivists they take the lead in calling the right people. We had a pain team at [another institution], I don't know if a pain team exists here but I just know that there are these teams Tell me about your experience with managing withdrawal in this population. It's the same, you call the pain team to ask them for their help.	pain management, lack of knowledge, support for surgeons, post-operation care, multidisciplinary group

	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	administration, cost, accountability, insurance, support for patient, support for surgeons, SUD treatment, follow-up care, societal issue
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons
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	1005	No, I think there's two of us on staff that do the majority of this work. One of our surgeons isn't as comfortable with valve operations, so naturally he doesn't do as many endocarditis operations as others of us do. Some of our junior staff aren't as comfortable with the reoperations or the aortic roots. We just pass these patients amongst ourselves if we feel like they need to be treated by a different surgeon.	disagreements (professional), support for surgeons
	1017	I: Ok…Do you feel supported in your care of people who inject drugs? S: Um, more so lately but no. In general, no. I think that the surgical services bear an unreasonable burden of managing these patients once we operate on them. In other words, there is a lot of pressure to operate on them and it feels like, as soon as we do, everyone disappears. And that it, uh, what began as a multidisciplinary approach becomes one service managing surgical complications, managing addiction, managing placement, managing families, um, and we don't have any of those resources, frankly.	support for surgeons, lack of resources, multidisciplinary group, follow-up care, support for patient, administration, frustration
	1017	I: How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know,	tx compared to broader, multidisciplinary group, support for surgeons, administration

		um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group
	1004	yes, he's added psychiatry and psychology support to patient care, the hospital has really only treated the acute physical needs before him. He's great, especially if the patient doesn't have a lot of social support.	collaboration with addiction medicine, multidisciplinary group, support for surgeons, support for patient
	1016	Do you feel supported in your care of people who inject drugs? S: Yes, very much so. I feel that BLANK does a really good job having a multidisciplinary team from that perspective. I: How do you feel the hospital could support you more? S: Um, one of the things that we've been working on is when these patients go to surgery, they can be very challenging to take care of post-operatively. Um, and once they are out of the ICU phase and, and doing more, stepdown level care, um, transitioning them back to, um, either the medicine service or the infectious disease service, or the recovery service, um, helps us because there is a lot of other issues, um, involved, um, with, um, discharge planning and discharge follow-up for	support for surgeons, post-operation care, follow-up care, pain management, multidisciplinary group

		addiction recovery and, um, managing, um, pain after, um, open heart surgery, um, that's kind of more involved than what we generally deal with. So, having that system, um, in place, is really helpful and improving upon that as well.	
	1006	Interviewer: Do you worry about getting viral infections like hep C and HIV? Interviewee: Me personally? Interviewer: Mm-hmm. Interviewee: No, I take every vaccine that comes along, and there's a cure for hep C now, hope they'll be one for HIV.	infection risk to surgeons, changes over time, support for surgeons
	1006	Interviewer: Is there someone you can call in the hospital with addiction medicine experience and expertise? Interviewee: We have a whole service. Actually, a few years ago I went to—it was a small group, kind of grand rounds type thing, I can't remember who sponsored it. It may have been infectious disease where the person from addiction medicine spoke, it was quite interesting.	administration, collaboration with addiction medicine, multidisciplinary group, support for surgeons
	1006	Interviewer: Do you feel supported in your care of people who inject drugs, and do you think there are ways the hospital could support you more? Interviewee: I'd say the support's pretty good. We've got ID consultants in the addiction medicine service. Now, we didn't have that—I'm in here my whole professional career, and it always bothered me to operate on these people who were desperately ill and then have them on my service for weeks getting IV drugs, and if it was up to me, they would wander out of the hospital, and we knew where they were going. No, it's much better than it was, and actually the current state, I think the support is good. Interviewer: Are there any ways you think the hospital could support you more? Interviewee: To answer you honestly, no, it's a really difficult problem, and being a little facetious, everybody knows where you go to buy your heroin, if they could clean up that	administration, changes over time, collaboration with addiction medicine, futility, societal issue, support for surgeons

		area it would be good, then they would undoubtedly spring up another block away, so.	
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	support for surgeons, administration, cost, accountability, support for patient, insurance, societal issue

	1008	Interviewer: Yeah. Do you feel like the hospital administration is supporting you and the addiction medicine folks in your attempt to provide care? Respondent: I think so, yeah. Interviewer: Yeah. Okay. Is there anything they could do to be more supportive? Respondent: They pretty much let us do what we want. Not really. It's a problem because, you know, we've had them go outside and shoot up through their PICC line. And their friend's coming in to shoot up. You can't have a police officer there all the time. I don't know. I think the hospital's pretty supportive.	collaboration with addiction medicine, support for surgeons, PICC line risk, administration, blame (secondary), disassociation (secondary)
	1015	I: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	support for surgeons, multidisciplinary group, administration, frustration, follow-up care
	1010	Does a history of injecting drugs impact what type of valve you would choose? It does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point	discussing addiction, follow-up care, post-operation care, accountability, support for surgeons

		on this is a new beginning for the rest of their lives.	
	1010	I think about is if you are a police officer and you get shot on the job, there is a huge mechanism to support you and your family, to support your family because you are gone, same if you are a firefighter and you are killed in fire. I think if something happened to me, my family would have a very hard time getting through. Because we as a profession lack the mechanisms to support each other. We actually do the opposite we don't treat each other well. So, because of these three reasons it does cross my mind a lot when I operate.	support for surgeons
	1010	Do you feel supported in your care of people who inject drugs? Supported by whom? Potentially that service? I can't say I have sought their support. We have the multidisciplinary meeting where I hear their views, you know listen to what they have to say. I have sought their medical advice and I think they are always available to give medical advice, but that is just one piece of the puzzle that you need to put together to decide what is the best course. Do you think the hospital could do more to support you in the care of these patients? No, I feel supported by the hospital.	support for surgeons, collaboration with addiction medicine, multidisciplinary group, administration
	1010	Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this? Yes Who comes to these meetings and has it been helpful? Surgeons, cardiologists, infectious disease, and then addiction slash psychology and social workers. And yes, it is helpful. Anything specifically that has been worthwhile? The one thing that I have found useful in these meetings is that many people who may have thought that you are like the cold-hearted surgeon because you just wrote a note that no I don't think this person should have an operation hopefully, they will see that you are actually a human being. They're the ones that	multidisciplinary group, support for surgeons

		talk about being open minded and all this stuff but sometimes I don't think they are. So, if they meet you in person and have a discussion maybe they will see your viewpoint too, if they want to. So, I think they are very good. I think every time you bring people together and discuss something it is always good and people who hide behind an email, keyboard, app, I think that is bad.	
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	support for surgeons, insurance, follow-up care, changes over time
	1011	Do you worry about getting viral infections like Hep C and HIV? Um, I do. I worry not only for myself but also for the staff that is taking care of these patients, I worry for my family if I were to get infected. So, I think those are just normal human reactions, but I worry about that stuff for anybody who has hepatitis C. Now the, you know, the, I don't know what the circumstances are, or what the data shows that uh, what the data shows in terms of incidence of hepatitis C or HIV in patients who use drugs verses patients who don't use drugs but you think that they share some of the same risk factors for transmission, needles, and you know whatever. So, when we see a patient with injection drug abuse, we screen them, but I would be worried about getting hepatitis C in the same way that I would for a	risk evaluation, support for surgeons, empathy

		drug abuse patient than I would be for someone else who has hepatitis C for an unrelated reason. I think that is something that we ask the staff to be careful about as well because these are sharps that we are going to be handling, we are going to be dealing with bodily fluids, not only operating but perioperatively in the ICUs and floors pre and after the operation.	
	1011	Do you feel supported in your care of people who inject drugs? Yes, so I, you know I think this is a great issue that we have started that we have this multidisciplinary team now that we meet, we schedule, we meet scheduled once a month but we can also call for ad hoc meetings if there is a patient that was extremely challenging and we needed help managing that. Its composed of the addiction treatment team, the ID team, cardiothoracic surgeons, their primary care providers or whomever is taking care of the floor, and really when we started the process it was interesting to watch how the team has evolved, because I remember when we started the process a couple years ago, everyone was coming at it from different perspectives and everyone had the patients best interest in heart but I don't think they were seeing what the other teams were seeing. You know the addiction team most of the time was saying you need to operate on these patients because that is what needs to happen and the surgeons were reluctant because of obvious reasons but what I find very interesting is that more often than not recently everyone is on the same page, or trying to get on the same page. There is much less arguments or disagreements as to what the best plan of care is for these patients might be. How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or	support for surgeons, multidisciplinary group, collaboration with addiction medicine

		some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	
	1002	Interviewer: Do you feel supported right now when you care for this patient population? Respondent: I think so. Interviewer: Is there anything the hospital could do more to support you? Respondent: I don't know.	support for surgeons
	1003	Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive. So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often –	support for surgeons, support for patient

		sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates. I just wish there was more – I just wish all the people involved in the care of these patients realize that there's certain times you've got to move ahead and intervene soon. So, it's part of my job, actually, to educate people. And it's been a struggle. Yeah.	
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do. I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation. We understand what the hospital is, and, um, you know, but now, we have a couple of guys, one psychiatry and one infectious disease that come in, that are new, that just thought that if we let them not too long ago, you know, BLANK and BLANK, um. I: I'm not sure about the other one but I know	support for surgeons, insurance, follow-up care, changes over time, responsibility (secondary), rationalization (secondary)
	1005	Interviewer: How do you think the hospital could support you more? Interviewee: I think we have a great addiction program here. We have trouble getting these patients admitted to the hospitalist service, and the hospitalist service could support us more in admitting these patients as they typically require prolonged preoperative evaluation and time before we take them into surgery.	support for surgeons, pre-operation care, support for patient

	1005	Interviewer: Have you experienced conflict within your team or with other staff members? I think this is regarding approaches to these types of patients? Interviewee: No, I think there's two of us on staff that do the majority of this work. One of our surgeons isn't as comfortable with valve operations, so naturally he doesn't do as many endocarditis operations as others of us do. Some of our junior staff aren't as comfortable with the reoperations or the aortic roots. We just pass these patients amongst ourselves if we feel like they need to be treated by a different surgeon	support for surgeons, disagreements (professional)
	1014	I: Do you feel supported in your care of people who inject drugs? S: Now, we do.	changes over time, support for surgeons
	1014	I: How do you feel the hospital could support you more? S: I mean, it, we've been talking about if for the last seven, eight years, that's, it's, uh, it's not that straightforward, you know. More often than not, these patients have insurance, or not, no insurance at all, insurance issues. They're young, they don't have Medicare. Uh, hospitals are, um, you know, they're under a lot of stress providing for these guys, the long-term care that they need, whether it's rehab, whether it's, uh, you know, continuing monitoring by the, by the necessary specialists. It is a challenging conversation.	support for surgeons, insurance, follow-up care, changes over time
	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility

		heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, “Oh, they need the valve surgery.” And then when it’s time for someone to take care of these patients, long term, there’s no one there. Part of it is patients don’t follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they’re not there to take care of the patient afterwards. There’s a saying “Beware of the courage of the noncombatant.” You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	
	1009	What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It’s one thing when we do the initial operation. The most frustrating thing is when these patients come back.	frustration, support for patient, SUD treatment, follow-up care, reinfection, support for surgeons, administration, desired changes
	1009	What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can’t just be here’s a card and go to this meeting if they’re going to take the problem seriously then there has to be something where it’s ensured that the patient is going to get that follow up.	support for surgeons, administration, SUD treatment, follow-up care

	1009	I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	tx compared to broader, multiple surgeries, futility, tx compared to colleagues, support for surgeons, reinfection, protocol, frustration, patient story
	1001	Myself? Of course. Yeah, I think everybody is concerned, you know? But these days it's a little bit better. We do notice that there have been improvements in the therapies. With HIV and hep C, a lot of people can carry the virus for a longer period of time without obvious sign of infection. I think [unintelligible 00:05:18] now, so making the surgeons feel better or healthcare professionals feel better when we deal with the patient when they clearly have the disease.	changes over time, infection risk to surgeons, support for surgeons
time constraints			
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem

	1008	nterviewer: Yeah. So, how did you approach that case? Respondent: Emergency surgery. Interviewer: Oh, okay. Respondent: Yeah. They're going to die if you don't do the operation. I mean say they come in at 2:00 in the morning. Can you wait till the morning or do you just take them right then? I mean it depends on the situation. If the blood pressure is above 100 and, you know, they're breathing on their own, I would probably wait till the morning. But if their pressure is 60, you just take them right to the operating room and hope for the best. Interviewer: What do you do like while -- I mean, presumably, you're at home at 2:00 a.m. So, like what happens as you -- Respondent: Well, we do emergency operations all the time. Interviewer: Okay. Respondent: But personally, I'd like to get a couple extra hours of sleep. You know, if it's good for the patient, we do the surgery right then. Interviewer: Okay. Respondent: Usually, it can wait. It's good to treat them with antibiotics for a while [unintelligible 00:05:03] If somebody's in cardiogenic shock, you just -- do the surgery.	priorities, risk evaluation, pre-operation care, save lives, time constraints, patient story
	1019	How did you approach that case? How would you approach this case? Yes. Emergent operation with homograft root replacement. And I have done that.	priorities, time constraints, save lives, defensive, post-operation care, mechanical problem
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, lack of knowledge, training, time constraints

	1006	Interviewer: Okay. How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: At best, moderate. Interviewer: What are some of the available treatments for opioid use disorder? Interviewee: Well, I think psychotherapy, suboxone, methadone. I don't even know that much about suboxone, I think it's a combination drugs, buprenorphine with something else, social services, that's about all I know. Interviewer: Do you want to receive more training on this? Interviewee: If it's concise.	knowledge, SUD treatment, time constraints, training
	1002	So if you have a patient who comes in who uses drugs, how much knowledge do you feel you have about the treatments they can use for someone who is trying to get off of it? Respondent: I don't know. I don't have that much knowledge, except for the surgical part. Interviewer: Would you ever want more training on this? Respondent: What's the benefit of doing the training? I'm happy to do it, but the amount of time – what's the rush now of doing the training events?	time constraints, SUD treatment, lack of knowledge, priorities, training, mechanical problem
	1007	Who do you think needs to make these changes on how much time is needed for these changes? Speaker 2: The administration at the hospitals needs to have more commitment to it, if, if that's what they're gonna do. The time depends how well they're up there and executing it.	administration, time constraints, accountability
	1013	How did you think about that decision? So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	priorities, save lives, SUD treatment, time constraints

	1013	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not very knowledgeable. I really don't, um, I'm not qualified to prescribe the pharmacologic treatment for it, its not what I do. Would you want to receive more training on this? To be honest with you um, probably not. Its kind of interesting to hear about at grand rounds but where I am in my practice, I don't even write post-op, I don't even write discharge medications for my patients, the PAs do so understanding it to the degree that is necessary to incorporate it into our standard practice would be useful but the exact details I don't need to know	lack of knowledge, training, time constraints, administration
	1003	Respondent: Based on their clinical presentation, the presence of fevers, the presence of [bacteremia]; and we look at the echo images of a particular valve that's infected, to determine how badly infected the valve is, whether or not medical therapy will be sufficient or, on the other extreme, the valve is so destroyed, the patient [that's] [unintelligible 0:00:53] compromised from the valve destruction that surgery clearly is indicated. Other times, it's not so clear, it's not a black and white issue. In some cases, we're – requires clinical judgement as to whether or not surgery is indeed indicated. And then the timing is also an important issue. We need to move ahead soon, or can we afford to wait a period of time to feed them antibiotics and see how they respond.	risk evaluation, mechanical problem, seriousness, time constraints
	1003	. And how knowledgeable do you yourself feel about like, available treatments for people who use drugs? You know, do you know of any – of the available treatments for opioid use disorder, is that something you'd be interested in getting more training on? Respondent: Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be interested in doing that, but it's you know, right now, not practical. For me.	SUD treatment, time constraints, training, follow-up care, protocol

	1003	Respondent: Well, I'll let – my philosophy, and I wish it was more accepted, is that you need to intervene sooner than later, when they come in with endocarditis, and they have a big vegetation, clinically, they're not doing well. I think historically, we try antibiotics and see what happens. But there's certain times you just need to move ahead; you know, just know in your gut, and then by looking at the images and looking at the patient they're not going to respond to antibiotics, and if you wait and then they develop complications, then they could potentially die from the complications. Or they, when they come to surgery, the operation is much more complicated, because the infection is much more invasive.	desired changes, risk evaluation, save lives, pre-operation care, time constraints, frustration, seriousness
	1003	So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates.	support for patient, support for surgeons, tx compared to colleagues, multidisciplinary group, risk evaluation, time constraints
	1003	I just wish there was more – I just wish all the people involved in the care of these patients realize that there's certain times you've got to move ahead and intervene soon. So, it's part of my job, actually, to educate people. And it's been a struggle. Yeah.	frustration, time constraints

	1009	Interviewer: And some hospitals convene a multidisciplinary group to evaluate people who inject drugs before their valve replacement. Does this hospital do that? Surgeon: No. Interviewer: Is that something you'd like to see? Surgeon: It probably wouldn't matter. Who's in the multidisciplinary group, right? Interviewer: Who do you think should be? Surgeon: I mean, really, when I have patients I speak with the Infectious Disease doctor and the cardiologist. The ultimate decision on whether the patient gets an operation is based on the surgeon, regardless of what the Infectious Disease doctor or cardiologist say. I think when these groups get together I think they spend an hour talking about nothing. You can get to the heart of the matter very quickly and so it would probably be a waste of – you know, there's not enough hours in a day to sit through an hour-long meeting. I think you can really get to the heart of the matter in terms of what needs to be done in just a few minutes.	multidisciplinary group, time constraints, futility
	1011	How knowledgeable do you feel about the available treatments for people who use drugs? Um, I've learned some going to our multidisciplinary team meetings. Um, I don't consider myself to be an expert or even a specialist in that, but I am glad that I know people, I know who to call. Would you want to receive more training on this? In my current situation I feel very well supported by the teams that we have put together. I think that what that allows me to do is to focus on what I need to do, and I can completely rely on them to, let them do what they do best.	support for surgeons, knowledge, time constraints, multidisciplinary group, training
	1013	So, um, as you described her she is in cardiogenic shock so she has an absolute indication for surgical management and you are really much, you are pretty much stuck and then you have to hope that and do everything you can to get her in recovery after you have done the operation	priorities, SUD treatment, save lives, time constraints
	1013	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not very knowledgeable. I really don't, um,	lack of knowledge, time constraints

		I'm not qualified to prescribe the pharmacologic treatment for it, its not what I do.	
	1007	Speaker 1: Who do you think needs to make these changes on how much time is needed for these changes? Speaker 2: The administration at the hospitals needs to have more commitment to it, if, if that's what they're gonna do. The time depends how well they're up there and executing it.	administration, time constraints
	1001	Interviewer: Are you interested in receiving more training on this? Respondent: Yeah, if my schedule allows.	time constraints, training, desired changes
	1004	R: How knowledgeable do you feel about the available treatments for people who use drugs? Not very, there's methadone and suboxone. I don't want to receive more training on this, I don't have the time or the interest.	lack of knowledge, time constraints, training
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, time constraints, priorities, training
	1012	Some people make comparisons between valve replacements people who use drugs and liver transplant in the setting of alcoholism. What do you think about these examples? I think it is a reasonable example. Do you think they are similar? Well in the sense that you know have a life-threatening problem, you know, what's different is the people that are uh, well couple things are different- one thing that is different is that in order to transplant a liver someone who's diseased their liver with chronic alcohol use, you have to get that liver from a donor which is a much more scarce resource than a valve which we can just pick off the shelf. So, in that sense I don't think it is a great example. And usually the valve, you know the endocarditis patients, it's more of an immediate life-threatening problem, whereas the liver cirrhotic is more of a chronic disease that they have developed over time. And another difference is the, when, my understanding is when they transplant	liver vs heart, desired changes, priorities, commitment to recovery, time constraints

		alcoholic cirrhotics, they usually have demonstrated abstinence for a period of time which is generally, I would think 6 months or longer or else they have some other reason to think that they are absolutely not going to do it again. Um, and we don't have that luxury with endocarditis. They come in, they have a life-threatening problem, we can't wait 6 months to get that valve replaced.	
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, lack of knowledge, training, time constraints
	1004	How knowledgeable do you feel about the available treatments for people who use drugs? Not very, there's methadone and suboxone. I don't want to receive more training on this, I don't have the time or the interest.	lack of knowledge, time constraints
	1006	Interviewer: Do you want to receive more training on this? Interviewee: If it's concise.	training, time constraints
	1014	S: She's young. You gotta give her a shot. You can't waffle here, because right now her, to have a serious conversation with her at this point is out of question. She is in shock. The valve needs to be fixed. Mechanical problem that needs a mechanical solution. Unfortunately, you know, it is going to be a little bit more, uh, technically demanding and this is not a straightforward AVR, probably a root replacement, and to see what her outlook looks like on the, on the addiction, uh, on the addiction level is, is not, we don't have time to talk to her. We just have to operate on her. She's too young, can't let her go.	priorities, time constraints, age, save lives
	1002	What's the benefit of doing the training? I'm happy to do it, but the amount of time – what's the rush now of doing the training events?	time constraints

	1005	Okay. I think you're already answering this one as well, some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution use this? Interviewee: Not that I know of. Interviewer: Do you think it would be helpful? Interviewee: Yes. Interviewer: You already answered that. Who needs to be involved and come to these meetings to make it worthwhile? Interviewee: Well it would be a difficult time to try to get all of us together. Perhaps, a once every two weeks or once a month meeting on the difficult cases would be nice. I think that it needs to be cardiac surgery, cardiology, infectious disease, addiction medicine, pain team, social work and discharge planner.	multidisciplinary group, time constraints, desired changes, collaboration with addiction medicine
	1014	She's young. You gotta give her a shot. You can't waffle here, because right now her, to have a serious conversation with her at this point is out of question. She is in shock. The valve needs to be fixed. Mechanical problem that needs a mechanical solution. Unfortunately, you know, it is going to be a little bit more, uh, technically demanding and this is not a straightforward AVR, probably a root replacement, and to see what her outlook looks like on the, on the addiction, uh, on the addiction level is, is not, we don't have time to talk to her. We just have to operate on her. She's too young, can't let her go.	age, time constraints, priorities, save lives
	1014	: Gotcha. Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Good question. The initial treatment, probably not. But afterwards, I hope it does. Because that would minimize recurrence. Again, recidivism is what kills them. I: Who needs to make the changes for that to happen? S: Bunch of people, sitting together, scratching their heads, coming up with dynamic guidelines that keep changing with the data. I: How much time do you think is needed for these changes? S: I mean, we needed them five years ago. I: Some hospitals convene a multidisciplinary group to evaluate people who inject drugs for valve replacements. Does your institution do this?	desired changes, multidisciplinary group, protocol, time constraints, discussing addiction, societal issue

		S: On and off. I: Do you think it's helpful?	
	1009	Re: the treatment of their addiction: How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	priorities, knowledge, time constraints, training, SUD treatment
	1009	And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed.	time constraints, lack of resources, follow-up care, medical model, post-operation care, multidisciplinary group

	1009	And some hospitals convene a multidisciplinary group to evaluate people who inject drugs before their valve replacement. Does this hospital do that? Surgeon: No. Interviewer: Is that something you'd like to see? Surgeon: It probably wouldn't matter. Who's in the multidisciplinary group, right? Interviewer: Who do you think should be? Surgeon: I mean, really, when I have patients I speak with the Infectious Disease doctor and the cardiologist. The ultimate decision on whether the patient gets an operation is based on the surgeon, regardless of what the Infectious Disease doctor or cardiologist say. I think when these groups get together I think they spend an hour talking about nothing. You can get to the heart of the matter very quickly and so it would probably be a waste of – you know, there's not enough hours in a day to sit through an hour-long meeting. I think you can really get to the heart of the matter in terms of what needs to be done in just a few minutes.	multidisciplinary group, time constraints, frustration, futility
time of treatment			
	1017	I: How should this patient's opioid use disorder be treated and when? S: With respect to someone who has an infected valve? I: Um, yeah. Or back to the vignette with Katie, who, uh, yeah, has an infected valve… S: I think it needs to, well, ideally it starts in the hospital with establishing long-term relationships with professionals and a team that is going to manage their addiction. I: What does the role of medications play in that?	time of treatment, follow-up care, support for patient
	1017	I: How should this patient's opioid use disorder be treated and when? S: With respect to someone who has an infected valve? I: Um, yeah. Or back to the vignette with Katie, who, uh, yeah, has an infected valve… S: I think it needs to, well, ideally it starts in the hospital with establishing long-term relationships with professionals and a team that is going to manage their addiction.	time of treatment, follow-up care, support for patient

		I: What does the role of medications play in that?	
	1015	I: How should this patient's opioid use disorder be treated and when? This is going back to Katie. S: Um…I don't think there is a time. I think it needs to be treated throughout the whole hospital stay and post-op. I don't think you say, ok now we've done surgery, now you start treatment. The treatment needs to start the minute they step in the door or become identified as drug users.	time of treatment, follow-up care, commitment to recovery
	1014	S: I mean, uh, it's like, the initial impression for me is like alcoholism. I mean, that, that, that's a lifelong, you know, treatment. It's a lifelong management. They, they, they cannot get cured. I don't think that they'll ever get cured from that disorder. You know, it's like alcoholism, you know, 40 years out, one drink and you go back to where you were, so. It's a problem. It's a problem. So, um…	time of treatment, SUD treatment, futility
	1014	I: How should this patient's–so back to Katie—how should this patient's opioid use disorder be treated and when? S: I mean, uh, it's like, the initial impression for me is like alcoholism. I mean, that, that, that's a lifelong, you know, treatment. It's a lifelong management. They, they, they cannot get cured. I don't think that they'll ever get cured from that disorder. You know, it's like alcoholism, you know, 40 years out, one drink and you go back to where you were, so. It's a problem. It's a problem. So, um…	SUD treatment, futility, time of treatment
timing of sud tx			
	1012	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	timing of SUD tx, follow-up care, support for patient, collaboration (secondary)
	1010	And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	collaboration with addiction medicine, timing of SUD tx

	1019	Right. Right. Um, is there someone you can call in the hospital with addiction medicine expertise? Sure, there's, uh, consult psychiatry and then there's also a… a drug addiction team. There's also a branch of psychiatry that deals specifically with drug addiction. So you can hook these patients up with a… a rehab counselor while they're in hospital.	collaboration with addiction medicine, timing of SUD tx
	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things.	timing of SUD tx, lack of knowledge, risk evaluation, perception of risk in PWID, follow-up care, post-operation care
	1019	Right. Right. Um, is there someone you can call in the hospital with addiction medicine expertise? Sure, there's, uh, consult psychiatry and then there's also a… a drug addiction team. There's also a branch of psychiatry that deals specifically with drug addiction. So you can hook these patients up with a… a rehab counselor while they're in hospital.	collaboration with addiction medicine, timing of SUD tx
	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more	timing of SUD tx, follow-up care, perception of risk in PWID, post-operation care

		challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would…	
	1019	would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, timing of SUD tx, post-operation care, discussing addiction, paternalism
	1008	Interviewer: Rehab before doing the surgery? Respondent: Yeah. Absolutely. Yeah.	timing of SUD tx
	1019	Right. Right. Um, is there someone you can call in the hospital with addiction medicine expertise? Sure, there's, uh, consult psychiatry and then there's also a… a drug addiction team. There's also a branch of psychiatry that deals specifically with drug addiction. So you can hook these patients up with a… a rehab counselor while they're in hospital.	collaboration with addiction medicine, timing of SUD tx

	1019	Ok. Mmhmm. So, would you, back to our patient - how should this patient's opioid use disorder be treated and when should it be treated? Well, uh… well, uh, for starters, so… so once again, you know. I… I would do the operation on this patient, recover the patient. I wouldn't start them on an anti-addiction therapy immediately. I mean, I wouldn't start trying to cure their addiction in hospital. OK I think it's actually potentially dangerous. It actually could make the postop care more challenging. [COUGHING] So now it gets to trying, trying to cure an alcohol addiction, you know, while… while a patient is undergoing heart surgery. You know, they're two different things. Um, and, so you know, I would…	timing of SUD tx, follow-up care, perception of risk in PWID, post-operation care
	1019	would manage the patient appropriately. If they needed opioids for pain, I'd give them. You know, I would keep the patient comfortable. Umm, but, at the time… at a reasonable time, when most of that is over, and I would… I would conjecture to say that would be somewhere in the 2 to 4 week period postoperatively, uh, I would have a serious conversation with the patient about, uh, trans-… you know, transitioning to a rehab program. And… and also I would consider at that point non-… nonopioid medications, which we commonly do for patients because their, you know, uh, prolonged use of opioids, um, for... in the setting of pain is, um, it has a lot of side effects. And not just addiction, it… it's, uh, it causes drowsiness, you know, it causes, uh, problems with the GI tract, so forth. So it's better to transition patients off opiates, off opioids, as soon as possible, you know, I don't… I don't condone them.	pain management, timing of SUD tx, post-operation care, discussing addiction, paternalism
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism

		team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	
	1016	I: How do you think this patient—going back to Katie—how do you think this patient's opioid use disorder should be treated? S: Um, pass. I mean I can say that, to get enrolled in a program, to support her so she doesn't return to using drugs, whether that's with methadone or, um, you know, other medications that may be available. Beyond the specifics of that… I: When do you think that would take place? S: Um, a plan should be in place as they are leaving the hospital, or, you know, instituted before they leave the hospital so there's no drop out in care. I: What is the role of medications in that? S: Um, my understanding is that, um, medications such as methadone can help prevent patients from going back to using IV drugs. Um, and is, I don't want to say a bridge, but to some degree, a nice, um, bridge medication. Um, my bias is that, um, while it prevents them from using illegal drugs, it is still a substance that they become dependent on in the long-term. I: How about psychotherapy? What role do you think that plays? S: I think psychotherapy is very important. Um, I don't know how many patients get that, or, receive it, or, how many patients are willing to participate in it. Um, but I do think it's an important piece to recovery.	SUD treatment, timing of SUD tx, follow-up care
	1006	Interviewer: Back to our clinical vignette of Katie, how do you think that his patient's opioid use disorder should be treated and when? Interviewee: Immediately. I wouldn't discharge her without a stipulate, if I'm gonna operate on her, the addiction medicine service if she survives is going to need to take her on as an inpatient.	collaboration with addiction medicine, post-operation care, paternalism, commitment to recovery, follow-up care, timing of SUD tx
	1017	How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people	support for surgeons, desired changes, multidisciplinary group, follow-up care, timing of SUD tx, support for patient

		who are willing to address, uh, their opioid or whatever substance use disorder.	
	1017	How should this patient's opioid use disorder be treated and when? S: With respect to someone who has an infected valve? I: Um, yeah. Or back to the vignette with Katie, who, uh, yeah, has an infected valve… S: I think it needs to, well, ideally it starts in the hospital with establishing long-term relationships with professionals and a team that is going to manage their addiction. I: What does the role of medications play in that? S: I don't know. I'm sure there is a role. I: And how about psychotherapy? S: I'm a big fan. So, I think, I don't know, but I think there is a role.	support for patient, timing of SUD tx, follow-up care
	1013	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this hospitalization and try to have this person involved with them at the time of discharge. What is the role of medications or psychotherapy, do these types of treatments exist alone or do they need to be combined? I don't know enough details about it. I would rely on our addiction medicine	collaboration with addiction medicine, second chance, commitment to recovery, follow-up care, timing of SUD tx
	1013	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that	PICC line risk, collaboration with addiction medicine, accountability, commitment to recovery, support for patient, timing of SUD tx

		they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	
	1003	However, if someone is critically ill, and time is of the essence, then we will move ahead and do surgery regardless of whether or not I think they're going to be able to be successfully treated from the addiction standpoint. On the other hand, if a patient is not critically sick, and they're having a medical indication for surgery, however if they're not in a program, where I think they're going to be successful in avoiding use of drugs again, I may postpone surgery until they get into a rehab program. So, once we do the surgery, I know they'll be on the road to recovery. But the thing that [certainly] we want to avoid is operating on someone who is not going to be compliant with the rehab, because that just puts them at – once they leave the hospital, at risk for recidivism, which will lead to poor outcomes, and most importantly, the patient will not do well in the long term.	relapse, risk evaluation, timing of SUD tx, commitment to recovery, paternalism, protocol
	1003	And what do you think about like, drug rehab? Do you think it's different – is it different than drug detox? Do you think it's - Respondent: Yeah. Definitely. Well, I think this, in general, the state of Massachusetts has made significant progress in realizing that this – these patients are not criminals; they're actually patients. They're truly patients with ill – underlying, chronic illness, and it's so we've sort of shifted our thinking about this. Well, I've always thought it was an illness. I never thought it was a malicious or criminal act. But fortunately, other people have come around to realizing that, too. At the state level and the hospital level and at the clinician's level. So – and I think most people are aboard with this, that they need an effective rehab for them to really cure this underlying problem. It takes months if not longer, years sometimes, for that to be accomplished. So, you know, truthfully I don't have, I'm not too involved – I mean, I do the surgeries, but I make sure they're – we have case management people involved; the addiction medicine team; infectious disease	stigma , societal issue, timing of SUD tx, multidisciplinary group, medical model, regional differences, follow-up care, changes over time, support for patient

		team. We're all invested in these patients now, to make sure they get channeled into the right rehab program.	
	1003	we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	multidisciplinary group, collaboration with addiction medicine, pain management, post-operation care, timing of SUD tx
	1011	n the case of this vignette how should this patient's opioid use disorder be treated and when? I think form my perspective what she needs right away, or what she needs first is the treatment for her cardiogenic shock and the problem that she has that she will require some sort of a surgical operation based on whatever the imaging suggests and then after that there has to be attention to her acute pain needs because it is a surgical procedure she is going to have some pain but as she weans away from her operation I think that is where the transition needs to happen.	timing of SUD tx, priorities, pain management, follow-up care
	1017	I: How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	support for patient, timing of SUD tx, multidisciplinary group, follow-up care
	1013	So, I think that in the vignette that you've described, what you hope for is that this is a quote unquote teachable moment and then you will be able to give this person's attention and that they will go into recovery right away. So, I would engage addiction medicine on this	timing of SUD tx, commitment to recovery, follow-up care, collaboration with addiction medicine, second chance

		hospitalization and try to have this person involved with them at the time of discharge.	
	1013	So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	priorities, commitment to recovery, PICC line risk, collaboration with addiction medicine, timing of SUD tx, support for patient
	1015	I: How should this patient's opioid use disorder be treated and when? This is going back to Katie. S: Um…I don't think there is a time. I think it needs to be treated throughout the whole hospital stay and post-op. I don't think you say, ok now we've done surgery, now you start treatment. The treatment needs to start the minute they step in the door or become identified as drug users.	timing of SUD tx, pre-operation care, follow-up care, commitment to recovery
	1001	Interviewer: For this patient, when do you think this treatment should be started? Respondent: I would say start it right away, because they should be evaluated even in preop. Then they can be carefully monitored. You know, theoretically I would want those patients to be closely monitored for the first few months after surgery, and that way there's no chance for them to get back into the drug use – because the risk for reinfection within the first few months is very, very high.	timing of SUD tx, pre-operation care, relapse, accountability, follow-up care, post-operation care, perception of risk in PWID
	1005	Interviewer: What if it was five years since she last used drugs? Interviewee: It makes her not need rehab.	timing of SUD tx
	1018	atie, in our vignette, how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced	paternalism, multidisciplinary group, post-operation care, save lives, follow-up care, timing of SUD tx

		team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	
	1012	What do you think about drug rehab? Uh, I think it's, I think it's necessary for most patients to get over this problem, intense rehab, drug rehabilitation, I think it's necessary. And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	rehab v detox, follow-up care, support for patient, timing of SUD tx
	1018	how should her opioid use disorder be treated and what's the timing that you would want to see for her treatment? Well to start it while she's a captive audience inpatient and then make sure that she, that there is a highly specialized, well-resourced team that could hopefully meeting her in the hospital so that the transition is meaningful and impressed to the patient that we are all one team trying to help.	post-operation care, save lives, timing of SUD tx, multidisciplinary group, paternalism
	1005	Interviewer: What if it was five years since she last used drugs? Interviewee: It makes her not need rehab.	timing of SUD tx
	1017	I: How do you think the hospital could support you more? S: So the model should be what we do with transplantation. That is a multidisciplinary approach, um, where if we all agree we are going to operate on that patient, once we operate on them and their surgical issues are done, meaning within three days of surgery, they should be transferred to an appropriate multidisciplinary service that includes people who are willing to address, uh, their opioid or whatever substance use disorder.	support for patient, timing of SUD tx, multidisciplinary group, follow-up care
	1016	How do you think this patient—going back to Katie—how do you think this patient's opioid use disorder should be treated? S: Um, pass. I mean I can say that, to get enrolled in a program, to support her so she doesn't return to using drugs, whether that's with methadone or, um, you know, other medications that may be available. Beyond the specifics of that…	SUD treatment, follow-up care, timing of SUD tx

		I: When do you think that would take place? S: Um, a plan should be in place as they are leaving the hospital, or, you know, instituted before they leave the hospital so there's no drop out in care.	
	1012	And for the patient in this clinical vignette how should this patient's opioid use disorder be treated and when? I think they should go home to an inpatient program where they get intensive treatment not just for their infectious problem which is the IV antibiotics they are going to need for 6 to 8 weeks but they should also get inpatient counseling and they should transition to an outpatient support program.	timing of SUD tx, follow-up care, support for patient
	1003	ell, while they're in the hospital, obviously, they're being – well, we rely on Dr. Patil's team whether or not they need to be in methadone while in the hospital. Or Suboxone. And then we have to wean it – not wean – we have to [mold] it while they have the surgery. We get the pain team involved frequently, to help manage the post-op pain. But once they get off the – once their pain starts to resolve within a week after surgery, then we get addiction medicine obviously involved, too, about Suboxone therapy.	multidisciplinary group, collaboration with addiction medicine, pain management, timing of SUD tx
training			
	1010	ow did you approach those cases, how would you approach this case? I operate on them, or I treat them based on what was the correct thing to do. What was the standard treatment for this condition. Which based on what you are describing would have to be surgical at some point early on if not right away after the appropriate treatment with antibiotics. Um. Presence, absence of hemodynamic issues. You said root abscess so probably have to go sooner rather than later.	protocol, priorities, training, risk evaluation, save lives
	1010	Do you want to receive more training on this? I don't think it would change what I do for the patients.	priorities, training
	1010	Do you consult another service for pain management in this population? Not always. If we cannot handle the pain and the pain is affecting let me think. I don't think we always do actually. The addiction services are involved, and I believe they have something to do with that because you don't just want to give someone 50 Percocets and	pain management, collaboration with addiction medicine, training

		send them home. Usually the patients themselves are very scared of taking percocets and uh so I'm trying to remember exactly what we do. We don't always get the pain service, but the addiction service is involved, and I believe they are the ones who decide how much and what kind and that stuff.	
	1010	Are there any guidelines or standards of care used at your hospital when assessing people who inject drugs for valve replacement? Not from a surgical standpoint. We treat them just like any other patient who has endocarditis. I don't if in the medical area there are.	protocol, training
	1019	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not... I'm not very knowledgeable, no, honestly. Do you want to receive more training on this? That's fine. For me it would be an informational thing. Uh, I don't know that it would change the scope of my practice or how I conduct my practice, but maybe it would. But I am… I am… I am relatively ignorant on that, yes.	lack of knowledge, SUD treatment, training
	1019	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not... I'm not very knowledgeable, no, honestly. Do you want to receive more training on this? That's fine. For me it would be an informational thing. Uh, I don't know that it would change the scope of my practice or how I conduct my practice, but maybe it would. But I am… I am… I am relatively ignorant on that, yes.	training, lack of knowledge
	1008	Interviewer: Okay. And then are there any like professional society guidelines for providing -- for doing the surgery in the population? Respondent: You mean for providing what kind of care during the surgery? Interviewer: Yeah. Respondent: No. There's recommendations for -- treatment of endocarditis, with the ACC and the HA probably have the best guidelines. The American Association of Thoracic Surgery has their own guidelines but they're basically the same. I don't think they're as high a quality as the ACC HA. But, yeah, they're all basically the	protocol, lack of resources, training, liability of medical professionals

		same. Interviewer: Okay. Cool. Respondent: But there's no guidelines on specifically how we treat patients with drug abuse.	
	1019	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not... I'm not very knowledgeable, no, honestly. Do you want to receive more training on this? That's fine. For me it would be an informational thing. Uh, I don't know that it would change the scope of my practice or how I conduct my practice, but maybe it would. But I am… I am… I am relatively ignorant on that, yes.	training, lack of knowledge
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, lack of knowledge, training, time constraints
	1016	I: What are some of the available treatments for opioid use disorder? I know that you said you don't really prescribe them, and do you want to receive more training on this sort of thing? S: Um, I think what would be more practical is having my team, who is actually doing the prescribing, the nurse practitioners, receive more training.	training, SUD treatment

	1006	Interviewer: Are there professional society guidelines? Interviewee: Oh, indications for surgery? Interviewer: Yeah, I think they mean with regards to IV drug users versus non-users. Interviewee: To be honest, I don't know There are guidelines if you're talking just about IV drug abuse or endocarditis indications and endocarditis more broadly. I don't think they draw distinctions in those indications between IV drug abusers and non IV drug abusers.	protocol, training, data, lack of resources
	1006	Interviewer: Okay. How knowledgeable do you feel about the available treatments for people who use drugs? Interviewee: At best, moderate. Interviewer: What are some of the available treatments for opioid use disorder? Interviewee: Well, I think psychotherapy, suboxone, methadone. I don't even know that much about suboxone, I think it's a combination drugs, buprenorphine with something else, social services, that's about all I know. Interviewer: Do you want to receive more training on this? Interviewee: If it's concise.	knowledge, SUD treatment, time constraints, training
	1002	So if you have a patient who comes in who uses drugs, how much knowledge do you feel you have about the treatments they can use for someone who is trying to get off of it? Respondent: I don't know. I don't have that much knowledge, except for the surgical part. Interviewer: Would you ever want more training on this? Respondent: What's the benefit of doing the training? I'm happy to do it, but the amount of time – what's the rush now of doing the training events?	time constraints, SUD treatment, lack of knowledge, priorities, training, mechanical problem

	1002	erviewer: Some hospitals can have a multidisciplinary group to evaluate these specific patients and cases. Do you know if [Tess] has that? Respondent: I don't know. Interviewer: Do you think it would be helpful to have? Respondent: I think so. Interviewer: Who do you imagine would be there? Respondent: [The patient], cardiology, and then some other pain control. What else? Like, pharmacists and then coordinators who can reach out to the family. I think that's about it, yeah.	multidisciplinary group, training, follow-up care, lack of knowledge
	1007	Okay. Would you like to receive more training on, you know, medications used to treat opioid use disorder or do you think you're, would you like to receive it? Speaker 2: Sure! We could always learn.	knowledge, discussing addiction, training
	1017	How knowledgeable do you feel about the available treatments for people who use drugs? S: I think, well, on a scale of 1-10, 1 being I don't know anything and 10 being I'm an addiction psychiatrist, I'd say I'm a 6, just because of recent changes here at BLANK, but would say that, um, you know, two years ago, I'd be down to 2 or 3 because I don't think we had a lot of the resources. I: Do you want to receive more training on this sort of thing? S: Um, I think that, uh, yes with an asterisk. What I want to know more about is prognosis, and, you know, what are the, um, demographics or the features of someone that, if we do surgery, will seek treatment and address it, and what are the, um, who are the patients that, uh, have a poor prognosis with respect to their substance abuse. That's what I want to know more about.	knowledge, changes over time, training, perception of risk in PWID
	1013	How knowledgeable do you feel about the available treatments for people who use drugs? I'm not very knowledgeable. I really don't, um, I'm not qualified to prescribe the pharmacologic treatment for it, its not what I do. Would you want to receive more training on this? To be honest with you um, probably not. Its	lack of knowledge, training, time constraints, administration

		kind of interesting to hear about at grand rounds but where I am in my practice, I don't even write post-op, I don't even write discharge medications for my patients, the PAs do so understanding it to the degree that is necessary to incorporate it into our standard practice would be useful but the exact details I don't need to know	
	1003	So, a lot of clinical judgment goes into assessing these patients, and I rely on objective data based on the laboratory values; the presence perhaps of some fevers. But also, some of my previous experience managing these patients; I rely on my own personal experiences and knowing what seems to work and what doesn't work.	data, knowledge, risk evaluation, training
	1003	. And how knowledgeable do you yourself feel about like, available treatments for people who use drugs? You know, do you know of any – of the available treatments for opioid use disorder, is that something you'd be interested in getting more training on? Respondent: Ideally, yeah. [unintelligible 0:11:49] Suboxone, and Vivitrol and the other – obviously, methadone. And I know you have to have a formal training to write prescriptions for Suboxone and, I'm familiar with the doses and – but I don't feel comfortable writing subscriptions for Suboxone or the other medications. Yeah, I mean, I could – if I had time, I would enroll in a – I think in order to administer Suboxone, you have to go through a formal training course. If I had time, I'd be interested in doing that, but it's you know, right now, not practical. For me.	SUD treatment, time constraints, training, follow-up care, protocol
	1003	Interviewer: Okay. Are there any guidelines or standards of care used at this hospital when assessing people who inject drugs for valve replacement? Respondent: [Laughter] No. There should be, but there's not. Interviewer: Okay. Interesting. Respondent: Nor do I think there is nationally. At our societies - cardiac surgery – I'm not seeing anything published about when to offer – how to assess a patient with endocarditis who uses drugs. No, I'm not seeing anything in our literature.	protocol, data, training

	1011	How knowledgeable do you feel about the available treatments for people who use drugs? Um, I've learned some going to our multidisciplinary team meetings. Um, I don't consider myself to be an expert or even a specialist in that, but I am glad that I know people, I know who to call. Would you want to receive more training on this? In my current situation I feel very well supported by the teams that we have put together. I think that what that allows me to do is to focus on what I need to do, and I can completely rely on them to, let them do what they do best.	support for surgeons, knowledge, time constraints, multidisciplinary group, training
	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? I think all of us struggle with it at levels but having a team together trying to bring us to the same page; I think there are some surgeons who are more averse to uh, I think everybody would do whatever is the right thing to help. But the concern about hepatitis C, I have heard that raised, a much higher level of concern than I have, and also different surgeons may have different levels of hope as to how these patients are going to do after the operation.	tx compared to colleagues, infection risk to surgeons, stigma , training
	1011	Do you think that treatment for endocarditis in people who inject drugs will change in the future? From a surgical perspective I don't think we will do anything different for these patients as you would do for patients who are not injecting drugs. Um. I think where the care is going to change is trying to prevent it and trying to treat the drug, but as a surgeon I, you know it may impact the valve choices, you know the complexity of the operation, but I don't foresee um, us making, you know there are new techniques being developed but nothing specific to this. The surgery will evolve, like all surgical techniques evolve, but I think they will evolve across the entire spectrum of cardiac surgery.	changes over time, training
	1017	I: Do you want to receive more training on this sort of thing? S: Um, I think that, uh, yes with an asterisk. What I want to know more about is prognosis, and, you know, what are the, um, demographics or the features of someone that, if we do surgery, will seek treatment and address it, and what are the, um, who are the	training, perception of risk in PWID

		patients that, uh, have a poor prognosis with respect to their substance abuse. That's what I want to know more about.	
	1013	Would you want to receive more training on this? To be honest with you um, probably not. Its kind of interesting to hear about at grand rounds but where I am in my practice, I don't even write post-op, I don't even write discharge medications for my patients, the PAs do so understanding it to the degree that is necessary to incorporate it into our standard practice would be useful but the exact details I don't need to know	training, administration
	1015	I: Gotcha. Um… How knowledgeable do you feel about treatments for people who use drugs? S: Very knowledgeable. I: OK. What are some of the available treatments for opioid use disorder? S: Um, the two that come to mind are methadone and Suboxone. I: Great. Do you want to… S: But you need a, you need a, an X-waiver for Suboxone prescribing. I: Ok. Do you want to receive more training on this? S: Uh…sure.	knowledge, SUD treatment, training
	1007	Speaker 1: Okay. Would you like to receive more training on, you know, medications used to treat opioid use disorder or do you think you're, would you like to receive it? Speaker 2: Sure! We could always learn	training
	1001	Interviewer: All right, and do you feel knowledgeable about available treatments available to people who use drugs? Respondent: I have some knowledge, but I rely on the specialist – that you help me take care of those patients. Interviewer: Do you know what any of the available treatments are for opiate use disorder? Or mainly you work with the specialists? Respondent: I will say I mainly work with the specialists, yeah.	collaboration with addiction medicine, knowledge, SUD treatment, training
	1001	Interviewer: Are you interested in receiving more training on this? Respondent: Yeah, if my schedule allows.	time constraints, training, desired changes

	1001	Interviewer: Do you think that treatment for endocarditis for people who inject drugs will change in the future? Respondent: I don't know. I hope. Interviewer: What kind of changes would you like to see? Respondent: I hope there would be a guidelines. You know, how many times do we do surgery? If they go back to drug use, should we withhold the surgical intervention? Or what would be the process? You know, the medicine is becoming both standardized or individualized. So I think for an endocarditis patient, it should be the future. On one side, we should clearly have guidelines from different perspectives. On the other side, we have to mainly treat an endocarditis patient individually, based on their own needs.	desired changes, protocol, data, changes over time, training
	1004	R: How knowledgeable do you feel about the available treatments for people who use drugs? Not very, there's methadone and suboxone. I don't want to receive more training on this, I don't have the time or the interest.	lack of knowledge, time constraints, training
	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, time constraints, priorities, training
	1012	ave you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	empathy, discussing addiction, support for patient, training, mechanical problem, societal issue, save lives

	1018	How knowledgeable do you feel about the available treatments for people who use drugs? Um, not very knowledgeable. Would you want to receive more training on this? Uh, yes. If it went through listening to another online course or some very watered down bit of information, no, but a couple of good papers that I can read at my convenience more efficiently then yes I would love more information.	SUD treatment, lack of knowledge, training, time constraints
	1017	I: Do you want to receive more training on this sort of thing? S: Um, I think that, uh, yes with an asterisk. What I want to know more about is prognosis, and, you know, what are the, um, demographics or the features of someone that, if we do surgery, will seek treatment and address it, and what are the, um, who are the patients that, uh, have a poor prognosis with respect to their substance abuse. That's what I want to know more about.	training, perception of risk in PWID
	1016	What are some of the available treatments for opioid use disorder? I know that you said you don't really prescribe them, and do you want to receive more training on this sort of thing? S: Um, I think what would be more practical is having my team, who is actually doing the prescribing, the nurse practitioners, receive more training.	SUD treatment, training
	1006	Interviewer: Do you want to receive more training on this? Interviewee: If it's concise.	training, time constraints
	1012	Have you ever discussed drug use with a patient like this? Yes. If so, what questions did you ask? If they have ever tried to quit, how long did they do it, I usually will give them my own weak counseling like you've got to get all new friends, you can't, you know, this is what you have to do, if you come back again you're going to die, you know you sort of go over it, but that's not my training, that's not my role in the healthcare system, so I do what I can, but really my role is to replace the valve and correct their life-threatening problem. We then need another system that's going to prop them up and help them get over their primary problem which is substance abuse.	support for patient, training, mechanical problem

	1015	I: Gotcha. Um… How knowledgeable do you feel about treatments for people who use drugs? S: Very knowledgeable. I: OK. What are some of the available treatments for opioid use disorder? S: Um, the two that come to mind are methadone and Suboxone. I: Great. Do you want to… S: But you need a, you need a, an X-waiver for Suboxone prescribing. I: Ok. Do you want to receive more training on this? S: Uh…sure.	SUD treatment, knowledge, training
	1010	Do you want to receive more training on this? I don't think it would change what I do for the patients.	training, SUD treatment
	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	pain management, empathy, lack of knowledge, deservingness, training
	1011	Would you want to receive more training on this? In my current situation I feel very well supported by the teams that we have put together. I think that what that allows me to do is to focus on what I need to do, and I can completely rely on them to, let them do what they do best.	training, multidisciplinary group
	1005	Interviewer: Are there professional society guidelines? Interviewee: I'm not aware of any strict guidelines for operating on people who use IV drugs.	protocol, training, lack of knowledge, lack of resources

	1014	let's say you operate on them, you can't be cruel, and say, I don't want to give them morphine, or like, I don't want to give them, it's a problem too, and, and, and, it depends, sometimes you stop (inaudible) the patient, and sometimes I call the pain service to come in and give me some ideas, and we start using those, those non-, non-narcotics, as effective as they are, the first 48 hours after an operation, they, they're actually not that effective. They could be, but they're not. Patients need narcotics sometimes for, for pain control. Pain control is good, is good for pain but also good for blood pressure, for heart rate. I mean, this is cardiac surgery. You don't want them to be sitting in pain with a blood pressure of 200 and a heart rate, you know, through the roof. They will not, a physiologic problem. So, yeah, and do we need training with that? Absolutely. I mean, I get a lot of people to help, what do you think I should give this guy? I mean, you know, I don't want to give him morphine, because I don't want to, you know, but he's, you don't want them to suffer. You don't.	pain management, deservingness, empathy, lack of knowledge, training
	1009	Re: the treatment of their addiction: How knowledgeable to you personally feel about the available treatments for people who use drugs. Do you know anything about that process? Surgeon: The basics. We're being asked to learn more about opioid use disorders and everything. There's a lot more online, CMA. There have been talks that the hospitals have given. I have a general sense of – actually, I'm meeting later today with someone from Penn about it. I don't know a lot about it. How important is it for me to know? I'm not sure, to be honest. I mean, at the end of the day I want the patient to do well. But in terms of all the things that I have to know, how essential is it that I get down into the weeds about what the nuances of addiction is?	priorities, knowledge, time constraints, training, SUD treatment
	1009	Are there any guidelines or standards of care used this hospital when you're assessing people who inject drugs for valve replacements? Surgeon: No. I mean, there's no guideline on what to do if someone who injects drugs. The guidelines are based on a patient's medical condition and in terms of whether you think they need an operation or not. Do they have	protocol, futility, lack of resources, training

		an indication but the guidelines – no guideline will every say you have to operate because surgical guidelines always incorporate surgeon judgment. You can have someone that you think has an indication for surgery but that you feel is not indicated for X, Y or Z reasons, or is futile. And so there's nothing that ever says you have to in the surgical guidelines for endocarditis	
transient			
	1016	I: You didn't do the initial one, so they're coming back to you and you're seeing them for the first time… S: Yeah, because they, I don't want to say turned or refused from that hospital that they went to, or they're like, I've already been at this hospital, I'm going to go to a different hospital. I: How often does that happen? S: A lot.	reinfection, frustration, transient, second chance
	1015	I: If it was 5 years since she last used drugs? S: And she's now using again? I: She is not using. S; Oh. It wouldn't change anything. I: Ok. Let's see…Does the time period between endocarditis episodes change whether you would or wouldn't do the operation? S: Uh…it's hard to say. I mean, I don't see a lot of the people who come back that often because they go to other services, so…	time between operations, transient
	1016	You didn't do the initial one, so they're coming back to you and you're seeing them for the first time… S: Yeah, because they, I don't want to say turned or refused from that hospital that they went to, or they're like, I've already been at this hospital, I'm going to go to a different hospital. I: How often does that happen? S: A lot. I: Really? S: I think it depends, too, on, you know, BLANK has a lot of hospitals all in one area. But we do get a lot of doctor shopping and, um, transfers.	frustration, reinfection, second chance, transient
	1015	I: If it was 5 years since she last used drugs? S: And she's now using again? I: She is not using. S; Oh. It wouldn't change anything. I: Ok. Let's see…Does the time period between endocarditis episodes change whether you would or wouldn't do the operation? S: Uh…it's hard to say. I mean, I don't see a lot	time between operations, transient

		of the people who come back that often because they go to other services, so…	
tx compared to broader			
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation

	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more people to operations that in other countries, even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	cost, changes over time, tx compared to broader, lack of resources, deservingness
	1019	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution, Yeah in the country, in the world? yeah, I think… I think, you know… I think, opinions are divided and I can't… I can't tell you how they're divided. But some feel that they would just continue to operate until it's just not technically feasible anymore, and others, uh, would, um… would adopt an approach that incorporates their own personal biases and hospital finances, which I don't think makes sense to me. Just saying it kind of makes me cringe. But it, just… it is what it is.	tx compared to colleagues, tx compared to broader, paternalism

	1019	But, do you have anything else to add about… What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution, Yeah in the country, in the world? yeah, I think… I think, you know… I think, opinions are divided and I can't… I can't tell you how they're divided. But some feel that they would just continue to operate until it's just not technically feasible anymore, and others, uh, would, um… would adopt an approach that incorporates their own personal biases and hospital finances, which I don't think makes sense to me. Just saying it kind of makes me cringe. But it, just… it is what it is.	tx compared to broader, tx compared to colleagues
	1008	ah. What about your sense -- like your sense of your approach compared to like other people in the US? Respondent: I think it's -- ours is pretty much in the middle. A lot of people do what we do. Where everybody gets -- the first valve. But if they re-infect it, a lot of places do not operate. There's other places that they can get five valves. There aren't too many of those. But there are some people that do that.	tx compared to broader
	1019	But, do you have anything else to add about… What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution, Yeah in the country, in the world? yeah, I think… I think, you know… I think, opinions are divided and I can't… I can't tell you how they're divided. But some feel that they would just continue to operate until it's just not technically feasible anymore, and others, uh, would, um… would adopt an approach that incorporates their own personal biases and hospital finances, which I don't think makes sense to me. Just saying it kind of makes me cringe. But it, just… it is what it is.	tx compared to broader, tx compared to colleagues

	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	follow-up care, support for patient, societal issue, administration, tx compared to broader
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, stigma , tx compared to broader
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness

	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons in the country or in the world? I think everybody struggles with this and whatever we see in our division, there is a spectrum of folks who are more sympathetic verses less sympathetic to these patients and I think that would be an index what the world is going to be. This is a microcosm, and the rest of the country probably falls somewhere along the spectrum.	tx compared to broader, responsibility (secondary)
	1016	How do you think your approach differs to other surgeons in the country or other countries in the world? S: Um, I really, I think it is a spectrum, so I think that my approach is similar to some other people's approach. Um, there is some surgeons that are really aggressive and will operate on everybody, um, and there are some that won't touch it at all. I think that I fall on the very conservative side, um, and, um, as far as other surgeons go, um, you know, a lot, I know at least in our group here that, kind of, come back to my clinic, get some antibiotics, and come back to my clinic, um, some of the other surgeons follow that as well, so…	tx compared to broader
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle	tx compared to broader, tx compared to colleagues, frustration, deservingness, empathy, societal issue
	1007	Thank you. So is there someone you can call in the hospital with addiction medicine expertise? Speaker 2: Absolutely. I mean, at our hospital, very… probably the best in the city for addiction. So it's good to be working carefully with them.	collaboration with addiction medicine, tx compared to broader

	1007	What we found is that surgically we, even though everything is customized to the patient surgically, there's very little that's done different from a technical standpoint. We may select a different valve or something like that or repair an abscess, but technically we do the same surgery in the same way and the infrastructures identical. Um, where these patients differ tremendously from an average patient is the social. And so we found that we need help with the social, that's what, that's where the heavy lifting is. Places do not necessarily have that in BMC that has a very good addiction medicine program. Still does not have a lot of resources to help and that's what's needed.	support for patient, protocol, lack of resources, societal issue, tx compared to broader, perception of risk in PWID
	1017	How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	tx compared to broader, multidisciplinary group, support for surgeons, administration
	1013	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Yeah, I think it is quite variable. Surgeons here, and we have certainly not mandated one approach. I think that there are a number of people who feel the way I do, there are some who are much more reluctant to operate. What is your sense about how your approach to treat patients compares to other surgeons in the country or the world? Uh I suspect that I am more willing to operate than others are.	tx compared to colleagues, tx compared to broader

	1003	Interviewer: What is your sense of how like your approach to treating patients who inject drugs with infective endocarditis, compared to like, other people, other surgeons here at Tufts, or other surgeons around the country? Respondent: Me personally? Interviewer: Yeah. Respondent: I think I'm more aggressive. Interviewer: Okay. Respondent: I'm more willing to do it. The first, time, second time, sometimes third time. That's just - my overall philosophy is different than my colleagues.	tx compared to colleagues, tx compared to broader, deservingness
	1003	Interviewer: Okay. And patients – and - Respondent: Around the country? Interviewer: Yeah. Respondent: I still think people like myself are a minority. Unfortunately,	tx compared to broader
	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the	support for surgeons, administration, tx compared to broader, accountability, desired changes, follow-up care, frustration, lack of resources, post-operation care, multidisciplinary group

		patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	
	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons in the country or in the world? I think everybody struggles with this and whatever we see in our division, there is a spectrum of folks who are more sympathetic verses less sympathetic to these patients and I think that would be an index what the world is going to be. This is a microcosm, and the rest of the country probably falls somewhere along the spectrum.	tx compared to broader
	1017	I: How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their	tx compared to broader, multidisciplinary group, support for surgeons, administration

		centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	
	1013	What is your sense about how your approach to treat patients compares to other surgeons in the country or the world? Uh I suspect that I am more willing to operate than others are.	tx compared to broader
	1015	Ok. How do you think, um, your approach compares with other surgeons in the country or other countries in the world? S: I don't know about other countries, but I think that in this country, most groups have the same approach, recurrent active IV drug users typically do not get offered recurrent surg	tx compared to broader, deservingness
	1001	Interviewer: What's your sense about how you approach and treat patients who inject drugs in comparison to your colleagues? Respondent: I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	tx compared to colleagues, lack of resources, protocol, disagreements (professional), risk evaluation, save lives, tx compared to broader
	1001	nterviewer: Do you think the way you feel is also different from the way other physicians around the country or around the world are dealing with this issue? Respondent: It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste	tx compared to colleagues, multiple surgeries, futility, lack of resources, tx compared to broader, second chance

		of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	
	1004	R: What is your sense of how like your approach to treating patients who inject drugs with infective endocarditis, compared to like, other people, other surgeons here at Tufts, or other surgeons around the country? I: I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	tx compared to broader, tx compared to colleagues, disagreements (professional), collaboration with addiction medicine, regional differences
	1004	R: If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato.	insurance, cost, societal issue, accountability, tx compared to broader
	1005	I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	tx compared to broader, cost, desired changes, frustration
	1008	Interviewer: Yeah. What about your sense -- like your sense of your approach compared to like other people in the US? Respondent: I think it's -- ours is pretty much in the middle. A lot of people do what we do. Where everybody gets -- the first valve. But if they re-infect it, a lot of places do not operate. There's other places that they can get five valves. There aren't too many of those. But there are some people that do that.	tx compared to broader, reinfection, multiple surgeries

	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	tx compared to broader, follow-up care, administration, societal issue
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, paternalism, tx compared to broader, stigma
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	tx compared to broader, deservingness, liver vs heart, futility, paternalism

	1012	I actually have a patient I followed in clinic, young guy, I think he was early mid-20s, and he had a tricuspid valve problem with severe TR, which is bad but not life-threatening, and he came to see me in the office, and um, I told him I wanted him to wait longer to make sure he wasn't going to use again, he came back another time, and it seemed like he was much better, had cleaned up, we brought him in for a valve and the day he showed up he just seemed off and we drug tested him and he was positive and we canceled it. I saw him once or twice in the office after that and he disappeared, I don't know where he is. I got a scathing, not a scathing but I would say an unprofessional email from one of the medical residents who was taking care of him, accusing me of not taking care of this guy because of his past history and telling me that the drug test was a false positive, uh, and it turned out that he was wrong, it wasn't a false positive it was a real positive, but I was really upset by that, that someone would accuse me, I operate on these people all of the time. And it is, you know, when you are in the trenches it's a difficult decision sometimes and to get accused of not taking care of someone who doesn't by the way have a life-threating problem at that point, but wanting to be very safe and sure that before I put a valve in him he is going to take care of it, I felt like I acted extremely appropriately, did the safe thing, and I don't think a resident should be emailing an attending cardiac surgeon accusing that person of not taking good care of the patient. You can keep that or delete that I don't care. I just wanted to get that off my chest.	patient story, commitment to recovery, deservingness, disagreements (professional), frustration, futility, liability of medical professionals, paternalism, tx compared to broader, defensive
	1018	How do you think the hospital could support you more in the care of patients who inject drugs? I think the hospital does a very good job at this at least in the inpatient world. What I am learning and hearing at our conferences is that hand offs to outside institutions, the transitions of care, and continuing that level of ancillary support that we do very well in the inpatient setting. In the outpatient setting, it's not so much asking our hospital, but our healthcare system and government to support these people.	follow-up care, support for patient, societal issue, administration, tx compared to broader

	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, stigma , tx compared to broader
	1018	How about in the country? Well there is a spectrum. There are surgeons who wouldn't even give someone a first shot at an operation if the cause of endocarditis was clear, there was a long history of drug use, and the patient was still defiant, they just wouldn't do it, and there are others I know who just keep operating and I liken it to the under privileged people in bad neighborhoods who flirt with the law a little bit, lawlessness, and they keep getting shot and they keep getting brought into the operating room with gunshot wounds to the abdomen, you know we never draw a line and say oh we are never going to operate on these people. This poses the same risk, maybe even more to the operative team but we don't make those kinds of decisions, although we have a little more time provided to reflect but in principle I think we should be trying to figure out ways to treat people right up to the end until it is pure futility.	futility, tx compared to broader, infection risk to surgeons, paternalism, liver vs heart, deservingness
	1005	I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	tx compared to broader, cost, desired changes, frustration

	1017	I: How do you think it compares with other surgeons in the country or other countries in the world? S: I think it differs, because different surgeons have very different environments that they are functioning in. The Europeans, particularly the Spaniards, have a, you know, in some of their centers a truly multidisciplinary, you know, um, more collaborative approach, whereas even the phone calls I get from, you know, places like BLANK are very different, where it's one surgeon in isolation trying to sort out how to take care of somebody with a huge population in BLANK, so I think it is highly variable.	tx compared to broader, multidisciplinary group, support for surgeons, administration
	1004	I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	disagreements (professional), tx compared to broader, tx compared to colleagues, collaboration with addiction medicine
	1016	How do you think your approach differs to other surgeons in the country or other countries in the world? S: Um, I really, I think it is a spectrum, so I think that my approach is similar to some other people's approach. Um, there is some surgeons that are really aggressive and will operate on everybody, um, and there are some that won't touch it at all. I think that I fall on the very conservative side, um, and, um, as far as other surgeons go, um, you know, a lot, I know at least in our group here that, kind of, come back to my clinic, get some antibiotics, and come back to my clinic, um, some of the other surgeons follow that as well, so…	tx compared to broader
	1006	Interviewer: Does it impact what type of valve, bio prosthetic versus mechanical you use? Interviewee: Yes, especially with catheter based valve replacement options, it makes me lean a lot more towards bio-prosthesis, plus patient compliance.	tx compared to broader

	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle. I think it serves a role, a lot of the patients are young and just had that invincibility where they thought someone else would get—have a problem with the drugs, not me, and I won't overdose, I won't get infected. Never crossed their mind that their dealer is giving them nonsterile stuff to shoot in their body. They say, "Oh, here's the sterile." This is the last person I spoke with, I said, "Well yeah, didn't you know you're gonna get infected." He goes, "I wasn't gonna get infected, I was using sterile needles." I said, "What about the powder you were cooking, do you think that's sterile? You're naïve to say the least." They are naïve, they're young. Interviewer: Any sense as to how you compare, in your practices versus worldwide? Interviewee: No, no idea.	tx compared to broader, deservingness, empathy, frustration, futility, paternalism, patient story, reinfection, relapse, risk evaluation
	1008	Interviewer: Yeah. What about your sense -- like your sense of your approach compared to like other people in the US? Respondent: I think it's -- ours is pretty much in the middle. A lot of people do what we do. Where everybody gets -- the first valve. But if they re-infect it, a lot of places do not operate. There's other places that they can get five valves. There aren't too many of those. But there are some people that do that.	tx compared to broader, reinfection, multiple surgeries, rigidity (secondary), responsibility (secondary)

	1010	Do you think that treatment for endocarditis in people who inject drugs will change in the future? What are the changes you would like to see? I think it will change, but for the worse. As, uh, healthcare has to change, there is a lot of money being spent on healthcare, and these patients require a lot of money for a very long time, so my concern is that in an effort to save money many of these patients will have the same fate that they had in an era where no one will touch them. So, I think that will happen. Because the current system no matter what people say, it gives access to more people to operations that in other countries, even though you won't find that in a report, I can guarantee you that, I mean I know for a fact that in England, in Greece, in Germany some of these people they wouldn't touch they would just put them in an institution and put an IV in them, whereas here we operate on them. Not only do we operate on them but if the chief of the division is on call that day then he is the one who operates on them. That does not happen outside. In systems, like in England for example professor [name] is not going to operate on them, he sees private patients. So, I think that as we have that model in the years to come, I think that will impact the care of these patients. They will not receive surgery.	changes over time, cost, deservingness, tx compared to broader
	1013	What is your sense about how your approach to treat patients compares to other surgeons in the country or the world? Uh I suspect that I am more willing to operate than others are.	tx compared to broader, responsibility (secondary)
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So, we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	regional differences, tx compared to broader, lack of resources, stigma

	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons in the country or in the world? I think everybody struggles with this and whatever we see in our division, there is a spectrum of folks who are more sympathetic verses less sympathetic to these patients and I think that would be an index what the world is going to be. This is a microcosm, and the rest of the country probably falls somewhere along the spectrum.	tx compared to broader
	1003	Respondent: Well, historically, I would not send them home. Interviewer: Okay. Respondent: That usually not an option. And historically, we sent them to places like the Shattuck and Tewkesbury, where we think they're getting good observation, but that's not the case. So, it's a dilemma where they should go. Yeah, yeah I think we'll send them to a nursing facility; to me, it makes the most sense. But that's far from perfect, but at least there's someone supposedly there around the clock, keeping an eye on the patient. We haven't had much luck with the Shattuck. Or Tewkesbury, though we've sent plenty of patients there. I mean, most of the patients have done okay, but the environment there, especially the Shattuck, is not conducive to abstinence. Meaning that there's a lot of drugs, I've been told, on the grounds of the hospital. Illicit drug use. Which is frightening. So, I'm not aware of any of our patients who went to Shattuck and started shooting up there, but I've heard of stories of other patients have that happening to. So, I would prefer to send my patient to a good nursing facility, or – where I think they can get good observation; hopefully prevent this being a potential problem. But there's no right answer where to send them afterwards. I just don't think home in general is a good option. So, another facility with around the clock supervision.	PICC line risk, desired changes, medical model, protocol, support for patient, tx compared to broader

	1003	Respondent: I think I'm more aggressive. Interviewer: Okay. Respondent: I'm more willing to do it. The first, time, second time, sometimes third time. That's just - my overall philosophy is different than my colleagues. But, yeah. Interviewer: Okay. And patients – and - Respondent: Around the country? Interviewer: Yeah. Respondent: I still think people like myself are a minority. Unfortunately,	tx compared to broader, tx compared to colleagues, deservingness
	1003	I just wish there was more – I just wish all the people involved in the care of these patients realize that there's certain times you've got to move ahead and intervene soon. So, it's part of my job, actually, to educate people. And it's been a struggle. Yeah.	tx compared to broader
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So, we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	regional differences, tx compared to broader, lack of resources, stigma
	1005	nterviewer: Are there any changes that you would like to see with regards for treatment of endocarditis? Interviewee: I think it would be nice to have some improved maybe surgical guidelines or endocarditis guidelines about when to operate and how many times should we operate. We often get transferred patients from other facilities that—in the hospital for four weeks on antibiotics that aren't operative candidates, and our facility certainly has to eat up that cost. I think it would be nice to have a	desired changes, multidisciplinary group, protocol, cost, insurance, tx compared to broader, frustration

		collaborative team with MIC doctors and infections disease and addiction that could manage these patients to get them more expedited and treated, these patients are often in the hospital for so long that it's almost a burden to our medical system these days, so that would be nice.	
	1014	You mentioned somewhere else in the world that you have read or you talked to people in other countries who, um, deal with people who inject drugs who need a valve replacement. How do you think they differ from your approach, or how are they the same? S: Other physicians, and resources, resources. They have a completely different approach with the death, with medicine, so I'm not sure we can transpose to the United States over there. I don't think society is that tolerant, and if it is tolerant the first time around, it definitely is not tolerant…it's just a matter of resources. When you have limited resources, and you know that, life becomes somewhat easy. In the United States, we are not. So, we've never, we've never said, we can't because we don't have enough resources to do something. Resources are always available.	tx compared to broader, lack of resources, stigma , regional differences
	1001	It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to broader, tx compared to colleagues, second chance
	1009	Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the	tx compared to colleagues, reinfection, tx compared to broader

		operation for recurrent drug abuse if they infect the new valve from that.	
	1009	I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	tx compared to broader, multiple surgeries, futility, tx compared to colleagues, support for surgeons, reinfection, protocol, frustration, patient story
	1001	It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to broader, tx compared to colleagues, second chance, rigidity (secondary)

tx compared to colleagues			
	1006	Interviewer: What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? Interviewee: I'm a little more conservative about what I'll do, I think. I mean I need to talk with—you already talked with Dr.	tx compared to colleagues
	1010	If a patient has a 100% mortality without surgery and 50% operative mortality with an operation is it worth taking the patient to the OR? By definition it is, but uh, there is no question that as a surgeon you are penalized for doing operations that carry a 50% mortality. You are penalized by the hospital, you are penalized by the Society of cardiothoracic surgeons, and you make yourself very vulnerable for someone who may have other reasons not to like you to say that this guys mortality is high. So uh, even though people may tell you that they don't care, they do. And even though they may tell you that it doesn't impact their decision, it does. It does impact my decision. Because yes, I have to take care of the patient, but I have to take care of myself as well.	liability of medical professionals, tx compared to colleagues, support for patient, support for surgeons, deservingness, administration, frustration
	1010	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? They seem to uh, they seem to, not everyone, but many of them seem to talk better than I do and have more friends among the consulting services, but they don't end up operating on them I end up operating on them. I think I am a very direct person and that doesn't help me. Uh because I may rub someone the wrong way by telling them what I think, someone else may tell them what they want to hear which may make them feel good, but they don't operate. So uh, I mean I am a very direct person and the only thing that helps is going to bed at night and looking at myself in the mirror and I can say yeah, I am ok. But that doesn't help with your daily interactions.	tx compared to colleagues, disagreements (professional), frustration, multidisciplinary group

	1019	And, you know, for the others… And, you know, it's… it's the circumstances… the circumstances are only relevant to me if they're going to impact how I can treat the patient. The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	risk evaluation, tx compared to colleagues, priorities, save lives, second chance
	1019	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution, Yeah in the country, in the world? yeah, I think… I think, you know… I think, opinions are divided and I can't… I can't tell you how they're divided. But some feel that they would just continue to operate until it's just not technically feasible anymore, and others, uh, would, um… would adopt an approach that incorporates their own personal biases and hospital finances, which I don't think makes sense to me. Just saying it kind of makes me cringe. But it, just… it is what it is.	tx compared to colleagues, tx compared to broader, paternalism
	1019	The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	tx compared to colleagues, risk evaluation, second chances, priorities, save lives

	1019	But, do you have anything else to add about… What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution, Yeah in the country, in the world? yeah, I think… I think, you know… I think, opinions are divided and I can't… I can't tell you how they're divided. But some feel that they would just continue to operate until it's just not technically feasible anymore, and others, uh, would, um… would adopt an approach that incorporates their own personal biases and hospital finances, which I don't think makes sense to me. Just saying it kind of makes me cringe. But it, just… it is what it is.	tx compared to broader, tx compared to colleagues
	1008	ay. What is your sense about how your approach to treating patients who inject drugs who have infective endocarditis compared to like other surgeons here that are in the hospital? Respondent: We pretty much treat people the same -- within our group.There's a lot of variability at other places.	tx compared to colleagues
	1019	The circumstances as they might impart a bias in my own system of beliefs, ethics and morals don't apply, shouldn't apply in this situation, in my opinion. You'll interview other surgeons that will vehemently disagree with me, but I don't agree with them. And I've loudly said it – you've heard me say it in rounds. I… I do not agree with that. In fact I may be the… well, I might… I don't know if I am… there might be [REDACTED] other faculty members in this division that agree with me, but I know some definitely don't.	tx compared to colleagues, risk evaluation, second chances, priorities, save lives

	1019	But, do you have anything else to add about… What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution, Yeah in the country, in the world? yeah, I think… I think, you know… I think, opinions are divided and I can't… I can't tell you how they're divided. But some feel that they would just continue to operate until it's just not technically feasible anymore, and others, uh, would, um… would adopt an approach that incorporates their own personal biases and hospital finances, which I don't think makes sense to me. Just saying it kind of makes me cringe. But it, just… it is what it is.	tx compared to broader, tx compared to colleagues
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons
	1018	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Um, I think they are fairly similar. I think maybe I am just a little more sympathetic to them but it's not a major difference.	tx compared to colleagues
	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? I think all of us struggle with it at levels but having a team together trying to bring us to the same page; I think there are some surgeons who are more averse to uh, I think everybody would do whatever is the right thing to help. But the concern about hepatitis C, I have heard that raised, a much higher level of concern than I have, and also different surgeons may have different levels of hope as to how these patients are going to do after the operation.	tx compared to colleagues, infection risk to surgeons, collaboration (secondary)

	1016	(Repeat of question above). So how does your approach, when you see patients who inject drugs, you decide whether to operate or not, how does that differ from your colleagues? S: Yeah, uh, there are surgeons that are very reluctant to operate on endocarditis. I'm pretty reluctant to operate on endocarditis. Um, I'm not, I don't refuse patients if they have endocarditis, but, um, it's not something I seek out, or, I don't get excited when I get the consults, because they're very difficult cases. Um, there are some surgeons that are more aggressive, and just say let's put the valve in and do it, um, and will even offer that repeat operation and, um, to me, I really draw the line at you get one chance and, you know, I don't approve of doctor shopping and, um, here's your chance, I've been up front with you.	tx compared to colleagues
	1003	So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates.	tx compared to colleagues
	1006	Interviewer: What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? Interviewee: I'm a little more conservative about what I'll do, I think. I mean I need to talk with—you already talked with Dr. Puerra 22:27 and Dr. Davies, they do more of these cases than I do.	tx compared to colleagues
	1006	Interviewer: How do you think your practice compares to others around the country? Interviewee: In the middle. There's many surgeons—that's why we see so many of 'em here, there are a lot of surgeons that don't want to deal with it at all. There was actually an article, I think it was in the New York Times that I read about a surgeon in Knoxville who—a good bit of what he did, because they have a terrible opioid problem there. He was	tx compared to broader, tx compared to colleagues, frustration, deservingness, empathy, societal issue

		actually—just said I've done all that I can, it's somebody else's turn, and he was moving back to Texas. He was pretty aggressive, or I guess however you want to call it, more forgiving and was doing a lot of reoperations, etcetera. I think I'm about in the middle	
	1006	Interviewer: Have you experienced conflict within your team or with other staff members surrounding these patients and their care? Interviewee: Yeah, usually the referral doctors, and fortunately, we had multiple surgeons here, so I can just say well if you don't like my opinion, you can ask someone else. 'Cause like I said I tend to be the one that says no because the chance of recidivism is too high, the risk is too high. Interviewer: I think this is just asking the same things, how is the conflict resolved, just by— Interviewee: Get another opinion. Generally, the service here, whether it's addiction medicine, internal medicine, ID, once you have two opinions, they respect the opinion and they'll go along with it	tx compared to colleagues, stigma , perception of risk in PWID, disagreements (professional), collaboration with addiction medicine, deservingness, multidisciplinary group
	1002	Interviewer: What is your sense about how you approach these patients in this population compared to your colleagues? Do you think it's similar? Different? Respondent: Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	tx compared to colleagues, second chance, reinfection, relapse, deservingness, commitment to recovery, frustration, futility, perception of risk in PWID
	1002	Interviewer: Have you ever had any conflict with any staff members about deciding what's right for any patient? Respondent: Conflicts? I don't think so.	tx compared to colleagues, disagreements (professional)
	1007	Okay. Thank you. Um, please, what's your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to surgeons at your institution, in the country and in the world in general? Speaker 2: Similar to the other surgeon I work with here. And, um, there's such a wide range of opinions. Speaker 1: Yeah. Speaker 2: It's hard to tell.	tx compared to colleagues

	1007	Have you ever experienced conflicts within your team or with another staff when it comes to treating patients with injection drug use disorder? Speaker 2: Within our surgical team? Speaker 1: Yeah. Speaker 2: No. Speaker 1: Okay. Speaker 2: With, with the rest of the hospital, I mean, not conflicts, but you know, disagreements, in management style. Speaker 1: So were these disagreements in management style resolved. Were they resolved? Speaker 2: Yeah, it's always resolved.	tx compared to colleagues, disagreements (professional), administration, defensive
	1017	I: Tell me about the operative risks of reoperation vs. the original operation. S: Uh, they are generally double. It depends on how experienced the center is, what the original operation is	risk evaluation, tx compared to colleagues
	1017	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? (Repeated) S: Uh, we are still a little bit more, honestly we are more of a collaborative group. I think that, uh, just because I have a little more experience, my willingness to operate on someone with a complex surgical problem may have a different threshold.	tx compared to colleagues
	1013	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Yeah, I think it is quite variable. Surgeons here, and we have certainly not mandated one approach. I think that there are a number of people who feel the way I do, there are some who are much more reluctant to operate. What is your sense about how your approach to treat patients compares to other surgeons in the country or the world? Uh I suspect that I am more willing to operate than others are.	tx compared to colleagues, tx compared to broader
	1013	Have you ever experienced conflict within your team or other staff members and if so how was it resolved? So certainly, there have been instances where one member of the team declines to operate on a patient and I or someone else agrees to operate. But I don't see that as a conflict. This is such a difficult question that I think every person has to answer for themselves. And we never, I have never seen a situation where one surgeon says I don't want to operate and another surgeon gave them a hard time, or	tx compared to colleagues, disagreements (professional)

		told them they were wrong, told them that they were immoral or anything like that. I think everyone appreciates how incredibly complex this problem is.	
	1003	Interviewer: What is your sense of how like your approach to treating patients who inject drugs with infective endocarditis, compared to like, other people, other surgeons here at Tufts, or other surgeons around the country? Respondent: Me personally? Interviewer: Yeah. Respondent: I think I'm more aggressive. Interviewer: Okay. Respondent: I'm more willing to do it. The first, time, second time, sometimes third time. That's just - my overall philosophy is different than my colleagues.	tx compared to colleagues, tx compared to broader, deservingness
	1003	So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates.	support for patient, support for surgeons, tx compared to colleagues, multidisciplinary group, risk evaluation, time constraints
	1009	Interviewer: When talking to the patient, how does their commitment treatment sort of play into your surgical decisions, if it does? Surgeon: The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on patients. But I think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that	commitment to recovery, futility, protocol, tx compared to colleagues

		far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	
	1009	Interviewer: Interesting. Thank you. So back to the Katy example. Imagine that you've operated on Katy, she does well, she's linked into methadone maintenance program and one year later she's back in the hospital and now she has prosthetic valve endocarditis. Have you seen this case, before? Surgeon: Frequently. Interviewer: What are your thoughts about management decisions in these kinds of cases? Surgeon: I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	futility, frustration, deservingness, protocol, tx compared to colleagues, reinfection, commitment to recovery

		Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	tx compared to colleagues, deservingness, collaboration with addiction medicine, multidisciplinary group, lack of resources, frustration, accountability, desired changes, follow-up care
	1009		

		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	
	1011	Where it becomes very very difficult for us to make the decision is um somebody who had a prosthetic valve, who had endocarditis because of injecting drugs, you do an operation, you provide them all the support they needed and they still go back to injecting drugs and they come back again with prosthetic valve endocarditis at that point you have to question what failed and why are we in this situation again and if it is something that is not modifiable then you really have to question that operation. This becomes a debate at our society's every time, how many operations does a patient get, and surgeons fall all over the spectrum, some people would say everybody gets one redo, or someone would say I would keep operating every time they come back, and other people would say one and done. They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	deservingness, follow-up care, relapse, futility, frustration, tx compared to colleagues, reinfection, defensive

	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? I think all of us struggle with it at levels but having a team together trying to bring us to the same page; I think there are some surgeons who are more averse to uh, I think everybody would do whatever is the right thing to help. But the concern about hepatitis C, I have heard that raised, a much higher level of concern than I have, and also different surgeons may have different levels of hope as to how these patients are going to do after the operation.	tx compared to colleagues, infection risk to surgeons, stigma , training
	1017	I: Tell me about the operative risks of reoperation vs. the original operation. S: Uh, they are generally double. It depends on how experienced the center is, what the original operation is.	risk evaluation, tx compared to colleagues
	1017	I: What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? (Repeated) S: Uh, we are still a little bit more, honestly we are more of a collaborative group. I think that, uh, just because I have a little more experience, my willingness to operate on someone with a complex surgical problem may have a different threshold.	tx compared to colleagues
	1013	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Yeah, I think it is quite variable. Surgeons here, and we have certainly not mandated one approach. I think that there are a number of people who feel the way I do, there are some who are much more reluctant to operate.	tx compared to colleagues
	1013	Have you ever experienced conflict within your team or other staff members and if so how was it resolved? So certainly, there have been instances where one member of the team declines to operate on a patient and I or someone else agrees to operate. But I don't see that as a conflict. This is such a difficult question that I think every person has to answer for themselves. And we never, I have never seen a situation where one surgeon says I don't want to operate and another surgeon gave them a hard time, or told them they were wrong, told them that they were immoral or anything like that. I think everyone appreciates how incredibly complex this problem is.	tx compared to colleagues, disagreements (professional)

	1015	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I don't necessarily share that opinion in every case, but I do see the rationale in it, so…	tx compared to colleagues, deservingness, changes over time, defensive, second chance
	1007	Speaker 1: Okay. Thank you. Um, please, what's your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to surgeons at your institution, in the country and in the world in general? Speaker 2: Similar to the other surgeon I work with here. And, um, there's such a wide range of opinions. Speaker 1: Yeah. Speaker 2: It's hard to tell. Speaker 1: Okay. Have you ever experienced conflicts within your team or with another staff when it comes to treating patients with injection drug use disorder? Speaker 2: Within our surgical team? Speaker 1: Yeah. Speaker 2: No. Speaker 1: Okay. Speaker 2: With, with the rest of the hospital, I mean, not conflicts, but you know, disagreements, in management style. Speaker 1: So were these disagreements in management style resolved. Were they resolved? Speaker 2: Yeah, it's always resolved.	tx compared to colleagues, disagreements (professional)
	1001	Interviewer: Okay, and do you currently feel supported when you're caring for patients in this population? Respondent: Yeah, and I think most of my colleagues share the same perspective. You know, there is really no conflict among us. We have our own standards, and if we need help – that's usually the case from the effects of the disease – you know, ethic committees. So they're around. They are available.	support for surgeons, tx compared to colleagues, multidisciplinary group

	1001	Interviewer: What's your sense about how you approach and treat patients who inject drugs in comparison to your colleagues? Respondent: I don't know. Yeah, I think it'll be different between us. Everybody approaches that differently. For example, my perspective – the endocarditis patient with the history of drug use will be different [unintelligible 00:36:54]. I think everybody's perspective here is a little bit different. You know, he's pretty interested and is very aggressive, I would say, on taking care of those patients, but I respect his operative decision-making and his willingness to take care of those top patients. But on the other side, everybody has their own opinions. There's really no guidelines, so I have to abide by the recommendation, and certainly everybody has his or her own practice. We have our own guidelines for ourselves – so, what we should do, you know?	tx compared to colleagues, lack of resources, protocol, disagreements (professional), risk evaluation, save lives, tx compared to broader
	1001	nterviewer: Do you think the way you feel is also different from the way other physicians around the country or around the world are dealing with this issue? Respondent: It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to colleagues, multiple surgeries, futility, lack of resources, tx compared to broader, second chance
	1004	R: What is your sense of how like your approach to treating patients who inject drugs with infective endocarditis, compared to like, other people, other surgeons here at Tufts, or other surgeons around the country? I: I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	tx compared to broader, tx compared to colleagues, disagreements (professional), collaboration with addiction medicine, regional differences
	1005	I think that those of us that treat endocarditis at this institution are all pretty aggressive surgeons and not shy of operations or reoperations. I think that we all, for the most part, think that patients should be adequately	tx compared to colleagues, second chance

		worked up and tuned up preoperatively, go to rehab and that they only have one chance at operation. Every now and then we'll offer a second operation, but that is extremely rare.	
	1008	Interviewer: Okay. What is your sense about how your approach to treating patients who inject drugs who have infective endocarditis compared to like other surgeons here that are in the hospital? Respondent: We pretty much treat people the same -- within our group.There's a lot of variability at other places.	tx compared to colleagues
	1008	Interviewer: Yeah. Totally. And have you ever -- has there ever been like a conflict between -- within your team or with other staff members at the hospital? Respondent: Not within our team but with like the psychiatrist or the internal medicine doctors. "What do you mean you're not going to re-operate?" Well, they're shooting drugs. We're not going to operate because they're going to infect the next valve. Not too much. They generally respect our opinion. Interviewer: Yeah. How do those conflicts get resolved? Respondent: We explain to them our approach and they pretty much accept it. We don't have the ethicist come in or anything like that. I think everybody sort of knows our approach. Interviewer: Yeah. Yeah. Makes sense if you see a lot of patients. Respondent: Yeah. Interviewer: They get the gist.	disagreements (professional), multidisciplinary group, paternalism, deservingness, commitment to recovery, follow-up care, futility, protocol, risk evaluation, tx compared to colleagues
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons
	1018	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution?	tx compared to colleagues, empathy

		Um, I think they are fairly similar. I think maybe I am just a little more sympathetic to them but it's not a major difference.	
	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	contract, collaboration with addiction medicine, paternalism, multiple surgeries, tx compared to colleagues, support for patient, frustration
	1012	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Uh. I do a little bit less of it because of, because my practice is different. I don't get as many of the inpatient consults. So, I don't do much of the endocarditis here. My prior job I did a ton of endocarditis. I would say I am a little more aggressive in offering surgery than some. There are some surgeons that give people one chance and that's it, there is a lot that do that, and there are even some that don't give them any chances. Um and I am not making a judgement; my Catholic guilt will usually push me to operate a little bit more than some of the others.	tx compared to colleagues, defensive
	1018	Are there professional society guidelines surrounding this particular patient population? I haven't seen many widely-adopted protocols or guidelines on this specific population, there are of course some for the management of endocarditis. And the decision to when to operate, every institution I have worked as has had some kind of local policy about this but it was always softly enforced, it was more to protect the physician or surgeon making a decision to or offer intervention or not, but it really wasn't proscriptive.	protocol, tx compared to colleagues, liability of medical professionals, support for surgeons
	1018	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Um, I think they are fairly similar. I think maybe I am just a little more sympathetic to them but it's not a major difference.	tx compared to colleagues
	1005	I think that those of us that treat endocarditis at this institution are all pretty aggressive surgeons and not shy of operations or reoperations. I think that we all, for the most part, think that patients should be adequately	tx compared to colleagues, second chance

		worked up and tuned up preoperatively, go to rehab and that they only have one chance at operation. Every now and then we'll offer a second operation, but that is extremely rare.	
	1017	I: Tell me about the operative risks of reoperation vs. the original operation. S: Uh, they are generally double. It depends on how experienced the center is, what the original operation is.	risk evaluation, tx compared to colleagues
	1017	I: What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? (Repeated) S: Uh, we are still a little bit more, honestly we are more of a collaborative group. I think that, uh, just because I have a little more experience, my willingness to operate on someone with a complex surgical problem may have a different threshold.	tx compared to colleagues
	1004	I'd say I'm in the middle between surgeons at Tufts, and probably in the US as well. I wouldn't say that there's conflict within the team but we have had disagreements about treatment methods. I'd adjudicate. We know who consults.	disagreements (professional), tx compared to broader, tx compared to colleagues, collaboration with addiction medicine
	1016	o how does your approach, when you see patients who inject drugs, you decide whether to operate or not, how does that differ from your colleagues? S: Yeah, uh, there are surgeons that are very reluctant to operate on endocarditis. I'm pretty reluctant to operate on endocarditis. Um, I'm not, I don't refuse patients if they have endocarditis, but, um, it's not something I seek out, or, I don't get excited when I get the consults, because they're very difficult cases. Um, there are some surgeons that are more aggressive, and just say let's put the valve in and do it, um, and will even offer that repeat operation and, um, to me, I really draw the line at you get one chance and, you know, I don't approve of doctor shopping and, um, here's your chance, I've been up front with you.	tx compared to colleagues
	1006	Interviewer: What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? Interviewee: I'm a little more conservative about what I'll do, I think. I mean I need to talk with—you already talked with Dr.	tx compared to colleagues

	1012	And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? It's hard. There are some surgeons that wouldn't operate a second time. I probably would operate a second time. But I would be more forceful in my making sure that they agree to this that and the other thing. I would talk to the substance abuse team and explain how they need better supports and we can't do what we did the last time, dut du dut du duh. Go through it all over again and operate again.	tx compared to colleagues, frustration, paternalism, multiple surgeries, contract
	1012	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compares to other surgeons at your institution? Uh. I do a little bit less of it because of, because my practice is different. I don't get as many of the inpatient consults. So, I don't do much of the endocarditis here. My prior job I did a ton of endocarditis. I would say I am a little more aggressive in offering surgery than some. There are some surgeons that give people one chance and that's it, there is a lot that do that, and there are even some that don't give them any chances. Um and I am not making a judgement; my Catholic guilt will usually push me to operate a little bit more than some of the others.	tx compared to colleagues, defensive
	1015	I: Yeah, sorry… What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compare to other surgeons at your institution? S: Um, I think, I don't know, I can't speak for the other guys in the group because I don't, um, I haven't talked to them although my, my, my thought is that the longer you do this, the less inclined you are to reoperate on injection, uh, IV drug users, recurrent IV drug users. I mean, I would offer them an operation, but there is, um, I guess, I'm not sure how to say this, but there's an understanding that, um, recurrent drug users typically don't get offered a second operation if they're using. Although, I don't necessarily share that opinion in every case, but I do see the rationale in it, so…	tx compared to colleagues, changes over time, deservingness, defensive, second chances
	1015	I: Ok. How do you think, um, your approach compares with other surgeons in the country or other countries in the world? S: I don't know about other countries, but I think that in this country, most groups have the same approach, recurrent active IV drug users typically do not get offered recurrent surgery.	tx compared to colleagues, deservingness

	1010	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? They seem to uh, they seem to, not everyone, but many of them seem to talk better than I do and have more friends among the consulting services, but they don't end up operating on them I end up operating on them. I think I am a very direct person and that doesn't help me. Uh because I may rub someone the wrong way by telling them what I think, someone else may tell them what they want to hear which may make them feel good, but they don't operate. So uh, I mean I am a very direct person and the only thing that helps is going to bed at night and looking at myself in the mirror and I can say yeah, I am ok. But that doesn't help with your daily interactions.	tx compared to colleagues, multidisciplinary group
	1013	Have you ever experienced conflict within your team or other staff members and if so how was it resolved? So certainly, there have been instances where one member of the team declines to operate on a patient and I or someone else agrees to operate. But I don't see that as a conflict. This is such a difficult question that I think every person has to answer for themselves. And we never, I have never seen a situation where one surgeon says I don't want to operate and another surgeon gave them a hard time, or told them they were wrong, told them that they were immoral or anything like that. I think everyone appreciates how incredibly complex this problem is.	tx compared to colleagues, disagreements (professional)
	1014	So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those	paternalism, tx compared to colleagues, multiple surgeries, risk evaluation, seriousness

		operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very calcified, taking them off, and putting it, is it doable, absolutely, but is it fraught with problems, absolutely. All the scar tissue comes in, you know, on top of the scar tissue that comes in from regular operations. So, clearly, it gets worse.	
	1014	I: Basically, how does your approach to treat these patients who inject drugs who have infective endocarditis, how is it differ or how is it the same as… S: So, I'm conservative. Because, I've been doing this for a while, I've seen them come back, so I'm very conservative. I operate only when I absolutely have to.	tx compared to colleagues
	1011	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? I think all of us struggle with it at levels but having a team together trying to bring us to the same page; I think there are some surgeons who are more averse to uh, I think everybody would do whatever is the right thing to help. But the concern about hepatitis C, I have heard that raised, a much higher level of concern than I have, and also different surgeons may have different levels of hope as to how these patients are going to do after the operation.	tx compared to colleagues, infection risk to surgeons
	1002	Tough question. I think it's similar, but not so – I do not favor to take the patient with – I mean a patient that comes back with the recurrent drug use. Yeah, I don't favor [to do] those cases compared to others.	commitment to recovery, deservingness, frustration, futility, risk evaluation, tx compared to colleagues, disagreements (professional)
	1003	Respondent: I think I'm more aggressive. Interviewer: Okay. Respondent: I'm more willing to do it. The first, time, second time, sometimes third time. That's just - my overall philosophy is different than my colleagues. But, yeah. Interviewer: Okay. And patients – and - Respondent: Around the country? Interviewer: Yeah.	tx compared to broader, tx compared to colleagues, deservingness

		Respondent: I still think people like myself are a minority. Unfortunately,	
	1003	So, I've always felt that you got to make a decision soon, you've got to make the right decision, and if your gut feeling tells you how to move ahead, move ahead. Don't wait a week or two or three. But I wish that was more accepted amongst the people in the community. My infectious disease colleagues sometimes will drag their feet. It's often – sometimes, it's myself that's pushing to get the patient in sooner. Another circumstance is infectious disease colleagues on my, in my camp, who says yes, we need to move ahead, and usually I'm willing to do that. However, my concern is my colleagues don't have that approach. They want to treat conservatively with antibiotics for a few weeks. In the meantime, the patient deteriorates.	tx compared to colleagues
	1014	So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very	paternalism, tx compared to colleagues, multiple surgeries, risk evaluation, seriousness

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	1014	I: Basically, how does your approach to treat these patients who inject drugs who have infective endocarditis, how is it differ or how is it the same as… S: So, I'm conservative. Because, I've been doing this for a while, I've seen them come back, so I'm very conservative. I operate only when I absolutely have to.	tx compared to colleagues
	1005	Interviewer: Okay. What is your sense about your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution, what about compared to those around the country or around the world too? Interviewee: I think that those of us that treat endocarditis at this institution are all pretty aggressive surgeons and not shy of operations or reoperations. I think that we all, for the most part, think that patients should be adequately worked up and tuned up preoperatively, go to rehab and that they only have one chance at operation. Every now and then we'll offer a second operation, but that is extremely rare.	tx compared to colleagues, second chance
	1014	I: Right. Um, ok, great. So, tell me about the operative risks of reoperation vs. the original operation. I know you mentioned the first time… S: The first time, an AVR on a 25-year-old, you know, even if it is, 1% risk to their life, ok, 2, even if it is an abscess, you have to do the whole root, 3, 4%, 5% literally. We are in a high volume setting so we are comfortable with those kinds of operations. Re-dos, you are up, even for a re-do valve, it's 5%, it could be higher. Re-do root, it's 10, 10% risk to their life, that's twice as much. You know, and a re-do homograft is a lot of fun, because that operation is, you know, the homograft, especially several years out, you know, becomes calcified, re-do, re-do homograft is not, that's an operation that separate men from boys. You, you lose sleep on it the night	risk evaluation, seriousness, paternalism, tx compared to colleagues, multiple surgeries

		before, it's a tough operation, and those are not straightforward operations. You have to be careful, especially, as young as you are, those operations could be harrowing, because the homograft calcifies with time, 5, 7 years down the road, you know, they become very calcified, taking them off, and putting it, is it doable, absolutely, but is it fraught with problems, absolutely. All the scar tissue comes in, you know, on top of the scar tissue that comes in from regular operations. So, clearly, it gets worse.	
	1014	Basically, how does your approach to treat these patients who inject drugs who have infective endocarditis, how is it differ or how is it the same as… S: So, I'm conservative. Because, I've been doing this for a while, I've seen them come back, so I'm very conservative. I operate only when I absolutely have to.	tx compared to colleagues
	1001	It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to broader, tx compared to colleagues, second chance
	1009	Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that.	tx compared to colleagues, reinfection, tx compared to broader
	1009	The initial time around I've never had a patient say they weren't going to stop or they weren't committed to not having this happen again. And so my partners I think they've had patients who say I don't care. You know, I'm gonna keep doing what I'm doing and I know they've declined to operate on patients. But I	commitment to recovery, discussing addiction, patient consent, pre-operation care, futility, tx compared to colleagues

		think you're going to be meeting with them and speaking with them. But to me I've just never had someone who's been that far gone where they're like I don't care what you do I'm gonna keep using. If they did say that, I would really have to pause and think about whether to offer surgery because again it may be futile.	
	1009	I think you look to see why they had prosthetic valve endocarditis and if it's secondary to intravenous drug abuse I would not offer a second operation. Have I done it in the past? Yes. I've operated on patients two times, three times, but now I'm moving away from them. My partners are all generally one and done. So that's kind of where I'm at now. I think if you have – if you reinfect the valve and you've been using again, even if it's a fatal outcome, I would not feel comfortable offering the operation. This is a situation that we encounter, again, unfortunately not infrequently, now. And the patients with oftentimes get admitted to a medical service and medical doctors will say, oh, they need to have surgery and everything and we'll tell them, you know, we'll say no, we're not going to do it and then they'll kind of get up in arms and they'll say, well, we're going to call another hospital and we say fine. And they do and the other hospitals say, Okay, sure, we'll do it. I recall one patient. The patient went up to Boston and they sent the patient back three hours later saying, yeah, we're not going to do the operation. I can understand from a medical doctor's perspective they say why not just do it? Just do it. But they don't understand our perspective. And so sometimes it's kind of futile in that setting.	tx compared to broader, multiple surgeries, futility, tx compared to colleagues, support for surgeons, reinfection, protocol, frustration, patient story
	1009	Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around.	tx compared to colleagues

	1010	What is your sense about how your approach to treat patients who inject drugs with infective endocarditis compared to other surgeons at your institution? They seem to uh, they seem to, not everyone, but many of them seem to talk better than I do and have more friends among the consulting services, but they don't end up operating on them I end up operating on them. I think I am a very direct person and that doesn't help me. Uh because I may rub someone the wrong way by telling them what I think, someone else may tell them what they want to hear which may make them feel good, but they don't operate. So uh, I mean I am a very direct person and the only thing that helps is going to bed at night and looking at myself in the mirror and I can say yeah, I am ok. But that doesn't help with your daily interactions.	tx compared to colleagues, multidisciplinary group
	1001	It's hard to tell, but I think by talking to other people – a group of other surgeons, my surgeon colleagues – share my own opinion on this, but certainly everybody is different. You know, some surgeons would just give those patients just one chance. I cannot agree or disagree, but I wouldn't give them multiple chances for surgery. I know that, because it doesn't make sense. It'd be a waste of our resource, and it'd be endless. Those patients should be evaluated by psychologists first, before we actually take it on, because there are clearly some psychological issues involved.	tx compared to broader, tx compared to colleagues, second chance, rigidity (secondary)
valve preference			
	1019	Right, right. You mentioned that they have a higher risk of infection with their mechanical… does it impact the type of valve you use, whether it's mechanical or bioprosthetic? There's no evidence in the literature to support, um, decreased infection, um, using either a bioprosthesis or a mechanical valve. I would say from my perspective, um, that an intravenous drug user, even… even if an intravenous drug user says that they have stopped and will not do it again, there's still, um, some percentage which will begin and begin injecting again and, if they have a mechanical valve with a blood thinner in - that's a problem. So I generally do not put	data, relapse, perception of risk in PWID, valve preference

		mechanical valves in these patients.	
	1019	Obviously I'd love… I'd love to have more minimally invasive methods. I'd love to have antibiotics that could cure cardiac abscesses and treat things like Staph aureus and Candida and eradicate them. Uh, I'd love to see, uh, prosthetic material that doesn't lend itself to infection, uh, which we don't have.	desired changes, valve preference
	1019	Right, right. You mentioned that they have a higher risk of infection with their mechanical… does it impact the type of valve you use, whether it's mechanical or bioprosthetic? There's no evidence in the literature to support, um, decreased infection, um, using either a bioprosthesis or a mechanical valve. I would say from my perspective, um, that an intravenous drug user, even… even if an intravenous drug user says that they have stopped and will not do it again, there's still, um, some percentage which will begin and begin injecting again and, if they have a mechanical valve with a blood thinner in - that's a problem. So I generally do not put mechanical valves in these patients.	valve preference, data, perception of risk in PWID, relapse
	1008	: Does it impact the kind of valve that you would give them the first time? Respondent: Well, people that inject drugs tend not to live as long as people that don't. So, I would tend to put more tissue valves in. I don't think there's a difference in, you know, re-infection. But I think I would put more tissue valves in these people, which is a reason they're going to be on Warfarin, anyway. Then I would put them in a mechanical valve if they're young.	age, perception of risk in PWID, reinfection, post-operation care, relapse, valve preference

	1008	Does it impact -- does age impact your -- the type of valve you might give someone? Respondent: Yeah. If they're 20 or 30 or 40, I would put in a mechanical valve. If they're above the age of 50 and a drug addict, I would definitely put in a tissue valve. Interviewer: Why? Respondent: Because there is risk of the valve clotting off if you don't take your Coumadin. And drug addicts tend to very unreliable people. On the other hand, you don't want the valve to wear out, a biological valve out. So, you have to do it again in 10 or 15 years. So, with the younger patients, I would put in a mechanical valve.	stigma , multiple surgeries, age, perception of risk in PWID, valve preference
	1019	Right, right. You mentioned that they have a higher risk of infection with their mechanical… does it impact the type of valve you use, whether it's mechanical or bioprosthetic? There's no evidence in the literature to support, um, decreased infection, um, using either a bioprosthesis or a mechanical valve. I would say from my perspective, um, that an intravenous drug user, even… even if an intravenous drug user says that they have stopped and will not do it again, there's still, um, some percentage which will begin and begin injecting again and, if they have a mechanical valve with a blood thinner in - that's a problem. So I generally do not put mechanical valves in these patients.	valve preference, data, perception of risk in PWID, relapse
	1018	Does it impact what type of valve you use- mechanical or bioprosthetic that you would put in? Yes in that in certain say neurologic complications, mycotic aneurysms if present would strongly dissuade me from mechanical valves and anticoagulation but I do think often these patients are best served with bioprostheses, it gives them a period of simpler, less complicated life to see if they can wean themselves from substances. And if they can successfully then later convert to a mechanical	valve preference, commitment to recovery, perception of risk in PWID

	1018	I think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of. And there are things we can explore in the operating room, we have shied, away from homografts but I personally still think they are a good thing. And this whole thing about what to do with the tricuspid valve, my recollections in people it was cut out of was it was tolerated but miserable and very difficult to manage. So, what's the best prostheses for the tricuspid valve that's the kind of question I would like our group to sort out.	data, contract, valve preference, follow-up care, stigma , desired changes, left vs right side, mechanical problem
	1016	: Does it impact what type of valve you use, mechanical vs. bioprosthetic? S: I always generally use, um, bioprosthetic valves. I'm concerned with compliance and there is a lot of additional risk with, um, mechanical valves.	valve preference

	1016	What about the different types of valves? Does age affect on what type of valve you use? S: Yes. Um, in general, um, I am of the school of thought that I prefer, um, biologic valves, um, when I can, so even in younger patients that are in their 60s, um, and I give all my patients the option and say, here are the valve choices, um, these are the pros and cons of each. Some people really just don't want to take anticoagulation. I think there's, um, some people just don't want to worry about their valve failing. Um, but, um, I tend to, to air on the side more of prosthetic valves, uh, especially in the 60 and plus range. When you get into younger patients, it really becomes more of a conundrum, um, and young girls that potentially may want to get pregnant. I think that in the IV drug use population, um, I still favor, um, biologic valves because, um, like I said there's so many negative consequences that can occur with anticoagulation and…and truthfully, if they're able to survive and get through this, get through an addiction recovery program, rehab themselves, and then their valve fails in 10 years, at that point they've proven that they're able to comply and, um, they're always a candidate for a, you know, a mechanical valve at that point.	valve preference, age
	1006	Interviewer: Does it impact what type of valve, bio prosthetic versus mechanical you use? Interviewee: Yes, especially with catheter based valve replacement options, it makes me lean a lot more towards bio-prosthesis, plus patient compliance.	valve preference, perception of risk in PWID
	1002	Interviewer: Do people who inject drugs have different operative and postoperative mortality and complications? Respondent: I think so. Interviewer: Does it impact what type of valve you would use? Does that impact the complications or mortality? Respondent: For [IE], you mean? Interviewer: Yes. Respondent: I don't think so, no.	risk evaluation, valve preference, post-operation care
	1002	Interviewer: So based on someone's age, would you choose one valve over the other? Respondent: Yeah, if the patient is – yeah, I think there is a chance to choose the mechanical valve if the [patient is older]. I	valve preference, protocol

		mean, why not bio? We don't have the clearcut age, but –	
	1015	: Right. Does it impact what kind of valve you use, like mechanical vs. bioprosthetic? S: Um…sometimes. Sometimes it does.	valve preference
	1007	First thoughts? Speaker 1: Yeah. For your patients who injects drugs, and need a valve replacement. Speaker 2: Um, I suppose no different than any other patient. Speaker 1: Do they have different operative and post-operative mortality complications compared to other patients? Speaker 2: Yes. Speaker 1: Okay… Um, can you please tell me my about that? Speaker 2: So, I mean, every patient is individual, but there are trends. A lot of these patients tend to be younger, so in some ways a healthier, which is what we're trying to assess, is the risk of surgery benefit. On the other hand, some social issues make them higher risk. Speaker 1: Okay. Um, does that impact the type of valve you give, so your choice to give mechanical versus bio prosthetic valves? Speaker 2: It does impact it, yes	perception of risk in PWID, age, priorities, valve preference
	1013	Does it impact what type of valve you use- mechanical or bioprosthetic? It does to the extent of where they seem to be in their recovery. So, I have certainly have had patients who are in recovery and have been abstinent for a good period of time and they want a mechanical valve and they believe that they can be good about taking coumadin and consistent about taking their coumadin then they get a mechanical valve. If somebody is early on and we are worried about their ability to be compliant with anticoagulation, then we are more inclined to put in a tissue valve. So, I would say broadly speaking we tend to put tissue valves in them for that reason specifically compliance with coumadin.	commitment to recovery, perception of risk in PWID, valve preference

	1003	Interviewer: What if it was a different kind of valve? Not - like not a prosthetic valve, but I don't know [unintelligible 0:29:20] the other kind of it. Respondent: A native valve? Interviewer: Yeah. Respondent: Another – oh. Well, that's unusual. Most of the time, someone comes back with a second valve operation, the existing valve they have is going to be infected. But in the rare circumstance not the case, we would offer them surgery, certainly. And again, operation does [unintelligible] more risk, because there is scar tissue on the heart and so forth. Interviewer: Mm-hmm. Or, what if it was like a mechanical valve that had been used the first time? Respondent: Yeah. We've seen that. Well, we'd take it out and put another valve in; probably another mechanical, unless they've shown that they can't tolerate Coumadin. But we'll put a mechanical in and if they can – they do tolerate Coumadin, yeah.	valve preference, multiple surgeries, follow-up care, risk evaluation
	1011	Does it impact what type of valve, for example mechanical or bioprosthetic valve? So, the data, um, there is no separate data on that, but it is a very interesting question that comes up every time. And personally, it does impact decision making.	data, perception of risk in PWID, valve preference
	1011	And in addition, to add on the additional burden of the anticoagulation on top of that, sometimes I think might be too much. Because even momentary lapses in anticoagulation management of these valves can be catastrophic. Um, if they take too little anticoagulation and the valve becomes thrombosed, that's a major problem and can be life threatening, can also cause major embolic phenomenon. If they take too much and the overdose themselves, they may find themselves in conditions where they injure themselves then that has a problem as well. So what I generally tell my patients is that um, you know, we will do the bioprosthetic valve and if the valve fails, if you clean yourself up, we would consider another operation to fix that and if they have gotten control of their life by then, then if they are still of the age where mechanical valve would be indicated by guidelines, then the second operation can be a	risk evaluation, multiple surgeries, medical model, protocol, deservingness, paternalism, valve preference

		mechanical valve operation. It is, um, it is a tough choice. It is certainly not what is accounted for by the current valve guidelines that we have.	
	1011	Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? Well I guess one of the things that is easier is valve choice. The older they are the choice of putting the bioprosthetic valve rather than the mechanical becomes a little more justifiable from just a guideline perspective. It also, someone who has made it to 55, I don't know what the expected survival of folks who do drugs is, but I think, I would think that this is someone, the 25 year old would be in much worse shape than someone who is 55, because they have a long way to go if they can get there. It is going to be a much harder thing for them to clean up, I think, because I think you are in a different place in your life and different priorities and interactions and relationships that are different. I don't know what a definitive answer you are looking for, but I do think those two patients are going to be different.	age, support for patient, valve preference, stigma , seriousness
	1013	Does it impact what type of valve you use-mechanical or bioprosthetic? It does to the extent of where they seem to be in their recovery. So, I have certainly have had patients who are in recovery and have been abstinent for a good period of time and they want a mechanical valve and they believe that they can be good about taking coumadin and consistent about taking their coumadin then they get a mechanical valve. If somebody is early on and we are worried about their ability to be compliant with anticoagulation, then we are more inclined to put in a tissue valve. So, I would say broadly speaking we tend to put tissue valves in them for that reason specifically compliance with coumadin.	perception of risk in PWID, commitment to recovery, valve preference
	1015	I: Right. Does it impact what kind of valve you use, like mechanical vs. bioprosthetic? S: Um…sometimes. Sometimes it does.	valve preference

	1015	I: Ok. Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Ok. Does age at all impact your decision to operate on prosthetic valve infections? S: Um, only from a medical standpoint. I: Ok. S: The, you know, obviously the older they get the sicker they are, so yes it does in that respect, but not as a social determinant of whether I should operate. I: What about the different types of valves? Does age determine whether… S: No. I: Ok. So… S: Well, wait, yes it does actually. If, I mean, if you've got native valve endocarditis and you are a young person, you probably want to get a mechanical valve, so age does influence that decision. And likewise, if they are older, you probably want to put a bioprosthetic in.	age, valve preference, defensive
	1015	Yeah. Would your approach change, um, I think it is talking about operating on Katie, if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Yes. Well, the guidelines say that if you want to consider a mechanical valve in a pregnant woman, you are welcome to do so as long as they are stable on a low-dose of warfarin over a period of time. Obviously, that being said, a mechanical valve would not be my first choice.	pregnancy, valve preference
	1001	Interviewer: Actually along that line of thinking, do you look at a 25-year-old with prosthetic valve endocarditis differently than a 55-year-old? Respondent: I [don't]. Yeah, I mean, certainly in terms of their decision-making it's the same, but the operative approach may be a little bit different in anticipation of a different life expectancy regarding the valve choice and their social background. You know, everybody is different, so there will be a difference between taking care of each individual patient.	age, societal issue, valve preference
	1018	Does it impact what type of valve you use- mechanical or bioprosthetic that you would put in? Yes in that in certain say neurologic complications, mycotic aneurysms if present would strongly dissuade me from mechanical valves and anticoagulation but I do think often these patients are best served with bioprostheses, it gives them a period of simpler, less complicated life to see if they can	perception of risk in PWID, valve preference, commitment to recovery

		wean themselves from substances. And if they can successfully then later convert to a mechanical	
	1018	Well yes I have had experience and I would like to think that I have managed them pretty much the way I would any patient with endocarditis and are in shock from whatever cause and that is to get them to the operating room to assess the extent of local destruction as to whether or not one can just replace the valve or if a full root reconstruction needs to be done. And usually offer bioprostheses, sometimes homografts because I believe that that is the best substitute valve particularly in this population.	priorities, mechanical problem, pre-operation care, risk evaluation, valve preference, left vs right side
	1018	think there is a lot more that surgeons can do too, frankly, I mean better operations. And I do think we need more research on this valve choice thing. I don't know if I mentioned to you that there was a study that was done when I was a faculty at [another institution] on drug related endocarditis and it was an internal medicine resident, and I think he published in Annals of Internal Medicine, not something for the ID population necessarily, but he looked at the patients who got mechanical valves verses biological valves and this guy went out into the neighborhoods and tracked these patients down to see how they did, it was most remarkable, this personal level of follow up on these patients and you could probably predict the result but it was a little surprising to us, but the patients who continued to use drugs were all dead in a few years, those who didn't overall did pretty well and the ones, if you were in that category the ones who had biological valves were rewarded for their good behavior for a punishing second operation and the ones who had a mechanical valve were set. And his argument, some what tongue in cheek was everyone should get a mechanical valve, it's part of the test. And if you win, if you score high, you are all set, you have the highest reward, you are alive and you have a long -lasting operation. But we are unfortunately punishing those that did improve their behaviors by biologic. So, that type of research I would like to see more of.	data, follow-up care, contract, deservingness, desired changes, valve preference, stigma
	1018	Does it impact what type of valve you use- mechanical or bioprosthetic that you would put in? Yes in that in certain say neurologic complications, mycotic aneurysms if present would strongly dissuade me from mechanical	valve preference, commitment to recovery, perception of risk in PWID

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	1016	Does it impact what type of valve you use, mechanical vs. bioprosthetic? S: I always generally use, um, bioprosthetic valves. I'm concerned with compliance and there is a lot of additional risk with, um, mechanical valves.	risk evaluation, valve preference

	1016	: Gotcha. What about the different types of valves? Does age affect on what type of valve you use? S: Yes. Um, in general, um, I am of the school of thought that I prefer, um, biologic valves, um, when I can, so even in younger patients that are in their 60s, um, and I give all my patients the option and say, here are the valve choices, um, these are the pros and cons of each. Some people really just don't want to take anticoagulation. I think there's, um, some people just don't want to worry about their valve failing. Um, but, um, I tend to, to air on the side more of prosthetic valves, uh, especially in the 60 and plus range. When you get into younger patients, it really becomes more of a conundrum, um, and young girls that potentially may want to get pregnant. I think that in the IV drug use population, um, I still favor, um, biologic valves because, um, like I said there's so many negative consequences that can occur with anticoagulation and…and truthfully, if they're able to survive and get through this, get through an addiction recovery program, rehab themselves, and then their valve fails in 10 years, at that point they've proven that they're able to comply and, um, they're always a candidate for a, you know, a mechanical valve at that point.	age, valve preference
	1015	: Right. Does it impact what kind of valve you use, like mechanical vs. bioprosthetic? S: Um…sometimes. Sometimes it does.	valve preference
	1015	I: Ok. Do you look at a 25-year-old with prosthetic valve endocarditis different than a 55-year-old? S: No. I: Ok. Does age at all impact your decision to operate on prosthetic valve infections? S: Um, only from a medical standpoint. I: Ok. S: The, you know, obviously the older they get the sicker they are, so yes it does in that respect, but not as a social determinant of whether I should operate. I: What about the different types of valves? Does age determine whether… S: No. I: Ok. So… S: Well, wait, yes it does actually. If, I mean, if you've got native valve endocarditis and you are a young person, you probably want to get a mechanical valve, so age does influence that decision. And likewise, if they are older, you probably want to put a bioprosthetic in	age, valve preference, defensive

	1015	I: Yeah. Would your approach change, um, I think it is talking about operating on Katie, if you learned that when Katie presented with prosthetic valve endocarditis, she was pregnant? S: Yes. Well, the guidelines say that if you want to consider a mechanical valve in a pregnant woman, you are welcome to do so as long as they are stable on a low-dose of warfarin over a period of time. Obviously, that being said, a mechanical valve would not be my first choice.	pregnancy, valve preference
	1005	nterviewer: Does it impact what type of valve, mechanical versus bioprosthetic valve you place? Interviewee: It doesn't necessarily what valve is placed when we think about our general population here, but I do think that we tend to place more tissue valves in younger patients if they use IV drugs.	age, perception of risk in PWID, valve preference, deservingness
withdrawal management			
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group
	1010	ell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their	withdrawal management, pain management, collaboration with addiction medicine, accountability, liability of medical professionals, deservingness, follow-up care, protocol, risk evaluation

		withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	
	1019	Do you… tell me about any experiences you've had with managing withdrawal in this population? I've had limited experience with it. Um, you know, it's generally… uh, it's genrally… uh, hypera-, hyperactivity in the cardiovascular system, tachycardia, hypertension, that sort of stuff. It's usually pretty easy to control Okay because we have great medicines. It's not generally a problem.	withdrawal management
	1019	o it doesn't impact your ability to operate or manage their pain, you think? No… no… uh, not at all. Um… that… I've… I've never canceled an operation because a patient was going through withdrawal that… that I can recall.	withdrawal management, pain management
	1019	Do you… tell me about any experiences you've had with managing withdrawal in this population? I've had limited experience with it. Um, you know, it's generally… uh, it's genrally… uh, hypera-, hyperactivity in the cardiovascular system, tachycardia, hypertension, that sort of stuff. It's usually pretty easy to control Okay because we have great medicines. It's not generally a problem. So it doesn't impact your ability to operate or manage their pain, you think? No… no… uh, not at all. Um… that… I've… I've never canceled an operation because a patient was going through withdrawal that… that I can recall.	pain management, withdrawal management

	1008	nterviewer: Okay. Cool. And how knowledgeable do you feel about the available treatments for people who use drugs? You know, like available treatment for opioid use disorder or something? Respondent: I refer to the -- there's the -- that team-- that does this. I refer everybody to them. Interviewer: Totally. Yeah. Would you have any thoughts on drug rehab or detox? Respondent: I think everybody should go through it that wants to have their heart valve operation. 100 percent. Otherwise, they have no chance. Interviewer: Do you think -- how should this patient's opioid use disorder be treated? Is that something you would have feedback on? Respondent: I refer to the experts and I usually don't -- get involved too much. I mean we -- we have to give them some opioids often for pain control. And they have a very high threshold, or I said low threshold for pain. They need a lot of drugs. And we try to use a reasonable amount but you got to take care of their pain in the short term. nd then you work on trying to get them off the drugs. It's a terrible problem	SUD treatment, lack of knowledge, commitment to recovery, withdrawal management, pain management, deservingness, collaboration with addiction medicine
	1008	And then what about your experience to manage withdrawal in this population? Respondent: You know, we keep them on opioids. So, we don't see them withdrawal too much. We've not really had that experience a whole lot. Because they're on those kinds of basal level of opioids to keep the withdrawal symptoms, really, to a minimum. I really don't think they -- we have that much on our service, the withdrawal symptoms.	withdrawal management
	1002	Respondent: I don't have that much experience, so I don't know. Interviewer: If someone is experiencing withdrawal, would that make you more or less likely to operate? Respondent: I don't know.	withdrawal management, disassociation (secondary)

	1019	Do you… tell me about any experiences you've had with managing withdrawal in this population? I've had limited experience with it. Um, you know, it's generally… uh, it's genrally… uh, hypera-, hyperactivity in the cardiovascular system, tachycardia, hypertension, that sort of stuff. It's usually pretty easy to control Okay because we have great medicines. It's not generally a problem. So it doesn't impact your ability to operate or manage their pain, you think? No… no… uh, not at all. Um… that… I've… I've never canceled an operation because a patient was going through withdrawal that… that I can recall.	pain management, withdrawal management
	1018	Tell me about your experience with managing withdrawal in this population. It's the same, you call the pain team to ask them for their help.	withdrawal management
	1016	I: Tell me about your experience with managing withdrawal in this population? Again, it might be the same as before, but… S: Um, I would say that I actually don't see much in the withdrawal space, because usually the patients come in and are in the hospital for a little while before they, um, before they, kind of, go to surgery, so it's usually more the ICU that is managing that or the floor. I: With the withdrawal experience maybe you have had in the past, does it affect your ability to operate or manage their pain? S: Um, I can't really answer that.	pain management, withdrawal management, lack of knowledge
	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group

	1002	Can you tell me about your experience with managing withdrawal for patients in this population? Respondent: Withdrawing, you mean? Interviewer: Yeah, when they're withdrawing from drug use. Respondent: I don't have that much experience, so I don't know. Interviewer: If someone is experiencing withdrawal, would that make you more or less likely to operate? Respondent: I don't know.	withdrawal management, lack of knowledge
	1007	Okay. Um, how about your experience with managing withdrawal in this population? Speaker 2: Um, I mean, we don't really manage with withdrawal. Speaker 1: Um, do withdrawal symptoms impact your ability to operate or manage the patient's pain? Speaker 2: Well, uh, uh, opioid withdrawal. Speaker 1: Yeah. Yeah, of course. Everything. The answer is yes to anything and everything.	withdrawal management
	1017	I: Do you think drug rehab is different than drug detox? S: Yes. In my mind, and that's…what my perception is, is that drug detox is more about the medical management of someone that is, um, coming off of, of, of these drugs, dealing with, um, withdrawal and other side effects of, um, removing these, whereas drug rehab, to me, is about long term abstinence and or, you know, addressing some of the other issues that led to their substance abuse.	medical model, withdrawal management, support for patient
	1017	: Tell me about your experience with managing withdrawal in this population? S: I haven't had experience with withdrawal.	withdrawal management
	1013	Tell me about your experience with managing withdrawal in this population. So, I don't think I've ever had to manage anybody in withdrawal from this.	withdrawal management
	1003	espondent: - we've gotten much better at preventing withdrawal. It used to be more of a problem than now. I think again, with addiction medicine involved, we maintain them in some narcotics before surgery, during, and after. We're not stopping things cold turkey. We're much better at that than we used to be. So, I've not seen much withdrawal, tell you the truth. Recently.	withdrawal management, changes over time, collaboration with addiction medicine

	1009	Interviewer: Withdrawal, what has that experience been like, as well? Surgeon: I usually will have the pain service kind of manage that. When these patients come in, especially if they've had a lot of narcotic or opioid use ahead of time, we just let the service know prior to surgery, please come see the patient after the operation and whatever recommends they have we follow.	withdrawal management, pre-operation care
	1011	ell me about your experience with managing withdrawal in this population. It's not a problem that we frequently have to face um, because these patients come in, they are generally managed by services other than ours in the time they are in the face of acute withdrawal. We rely on our teams to help us guide through that when they come in.	multidisciplinary group, withdrawal management
	1017	I: Do you think drug rehab is different than drug detox? S: Yes. In my mind, and that's…what my perception is, is that drug detox is more about the medical management of someone that is, um, coming off of, of, of these drugs, dealing with, um, withdrawal and other side effects of, um, removing these, whereas drug rehab, to me, is about long term abstinence and or, you know, addressing some of the other issues that led to their substance abuse.	rehab v detox, withdrawal management, medical model
	1017	I: Tell me about your experience with managing withdrawal in this population? S: I haven't had experience with withdrawal.	withdrawal management
	1013	Tell me about your experience with managing withdrawal in this population. So, I don't think I've ever had to manage anybody in withdrawal from this.	withdrawal management
	1015	: Ok. Tell me about your experience with managing withdrawal in this population? S: Honestly, I don't manage a lot of that, because it is either something they have already gone through or, you know, they've got a breathing tube in and it's not something that I've dealt with.	withdrawal management
	1007	Speaker 1: Okay. Um, how about your experience with managing withdrawal in this population? Speaker 2: Um, I mean, we don't really manage with withdrawal. Speaker 1: Um, do withdrawal symptoms impact your ability to operate or manage the patient's pain? Speaker 2: Well, uh, uh, opioid withdrawal. Speaker 1: Yeah. Yeah, of course. Everything. The answer is yes to anything and everything.	withdrawal management

	1001	Interviewer: Can you tell me about your experience managing withdrawal in this population? Respondent: You know, I've seen that before. I've seen all kinds of withdrawal, not just from narcotics – also alcohol, you know? But when it occurs, or clinically we suspect withdrawal, then we bring in the specialist. Certainly those patients will be carefully monitored and medicated.	withdrawal management, support for surgeons, multidisciplinary group, collaboration with addiction medicine
	1004	I: What do you think about drug rehab? Compared to Detox? R: well rehab is social and group support, and detox is just withdrawing	rehab v detox, withdrawal management
	1004	I: Tell me about your experience with managing pain in this population R: They require high doses, so I speak with the pain services. I don't know enough about pain management, their tolerance is so high that I don't know what they need I: What has your experience been with managing withdrawal in this population? R: Zero: if the person is actively in withdrawal I will not operate, it's too risky	pain management, perception of risk in PWID, withdrawal management
	1005	I think that by the time we see the patients and operate on them, usually the withdrawal has resolved and been treated by the medical or addiction team. We don't see a lot of withdrawal that we use benzos for in our patients when we operate on them.	withdrawal management, pre-operation care
	1005	Interviewer: You may have already answered this, do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: No.	withdrawal management, pain management
	1008	Interviewer: And then what about your experience to manage withdrawal in this population? Respondent: You know, we keep them on opioids. So, we don't see them withdrawal too much. We've not really had that experience a whole lot. Because they're on those kinds of basal level of opioids to keep the withdrawal symptoms, really, to a minimum. I really don't think they -- we have that much on our service, the withdrawal symptoms.	withdrawal management
	1012	ell me about your experience with managing withdrawal in this population. So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them	withdrawal management, collaboration with addiction medicine, multidisciplinary group

		hemodynamically unstable and it's just not safe.	
	1018	Tell me about your experience with managing withdrawal in this population. It's the same, you call the pain team to ask them for their help.	withdrawal management
	1005	I think that by the time we see the patients and operate on them, usually the withdrawal has resolved and been treated by the medical or addiction team. We don't see a lot of withdrawal that we use benzos for in our patients when we operate on them.	withdrawal management, pre-operation care
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	1017	I: Do you think drug rehab is different than drug detox? S: Yes. In my mind, and that's…what my perception is, is that drug detox is more about the medical management of someone that is, um, coming off of, of, of these drugs, dealing with, um, withdrawal and other side effects of, um, removing these, whereas drug rehab, to me, is about long term abstinence and or, you know, addressing some of the other issues that led to their substance abuse.	rehab v detox, withdrawal management, medical model
	1017	I: Tell me about your experience with managing withdrawal in this population? S: I haven't had experience with withdrawal.	withdrawal management
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	1016	Tell me about your experience with managing withdrawal in this population? Again, it might be the same as before, but… S: Um, I would say that I actually don't see much in the withdrawal space, because usually the patients come in and are in the hospital for a little while before they, um, before they, kind of, go to surgery, so it's usually more the ICU that is managing that or the floor. I: With the withdrawal experience maybe you have had in the past, does it affect your ability to operate or manage their pain? S: Um, I can't really answer that.	withdrawal management, pain management, lack of knowledge

	1006	Interviewer: Tell me about your experience about managing withdrawal in this population? Interviewee: Oh, that's when I would ask addiction medicine, or probably addiction medicine first if they recommended another group, I would call them, but I'm not good at managing narcotic withdrawal. Interviewer: The next question is do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: I've really not had much experience with that. Usually the patients are getting enough postop narcotics that they're not withdrawing, or else they've already gone through it if they're not emergent.	withdrawal management, collaboration with addiction medicine, follow-up care, multidisciplinary group
	1012	So, we, uh, I generally will get transitioned to uh the opiate replacement medications and people usually get substance abuse or pain management to help us manage that. So, we don't purposefully allow them to go through the withdrawal process because it makes them hemodynamically unstable and it's just not safe.	withdrawal management, pain management, collaboration with addiction medicine, multidisciplinary group, disagreements (professional), paternalism, defensive
	1008	Interviewer: And then what about your experience to manage withdrawal in this population? Respondent: You know, we keep them on opioids. So, we don't see them withdrawal too much. We've not really had that experience a whole lot. Because they're on those kinds of basal level of opioids to keep the withdrawal symptoms, really, to a minimum. I really don't think they -- we have that much on our service, the withdrawal symptoms.	withdrawal management, prioritization (secondary)
	1015	I: Ok. Tell me about your experience with managing withdrawal in this population? S: Honestly, I don't manage a lot of that, because it is either something they have already gone through or, you know, they've got a breathing tube in and it's not something that I've dealt with.	withdrawal management
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		or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	
	1014	S: Here we go. I rely on the, again, on people helping us out with this, the critical care, the intensivist, because those, those withdrawal, they can get into trouble, especially if you just rush to an operation for one reason or another. And, um, not rush, but you didn't see that they're gonna go into the throe, and after the operation, they are in bad shape, at a minimum they can rip their breastbone apart, they don't wake up that quickly from the anesthetic, you know, they are still intubated, they're wiggling in bed, and they end up hurting themselves, and the mediastinum, if they tear open their breastbone, they can get infected and go from one thing to another. It is a medical problem more than anything.	withdrawal management, medical model, multidisciplinary group
	1011	Tell me about your experience with managing withdrawal in this population. It's not a problem that we frequently have to face um, because these patients come in, they are generally managed by services other than ours in the time they are in the face of acute withdrawal. We rely on our teams to help us guide through that when they come in.	withdrawal management, multidisciplinary group
	1002	Respondent: I don't have that much experience, so I don't know. Interviewer: If someone is experiencing withdrawal, would that make you more or less likely to operate? Respondent: I don't know.	withdrawal management
	1003	we've gotten much better at preventing withdrawal. It used to be more of a problem than now. I think again, with addiction medicine involved, we maintain them in some narcotics before surgery, during, and after. We're not stopping things cold turkey. We're much better at that than we used to be. So, I've not seen much withdrawal, tell you the truth. Recently.	withdrawal management, multidisciplinary group, collaboration with addiction medicine

	1005	Interviewer: Okay. Tell me your experience with managing withdrawal in this population? Interviewee: I think that by the time we see the patients and operate on them, usually the withdrawal has resolved and been treated by the medical or addiction team. We don't see a lot of withdrawal that we use benzos for in our patients when we operate on them. Interviewer: You may have already answered this, do withdrawal symptoms impact your ability to operate or manage pain? Interviewee: No.	withdrawal management, collaboration with addiction medicine, pre-operation care, pain management
	1014	Tell me about your experience with managing withdrawal in this population? S: Here we go. I rely on the, again, on people helping us out with this, the critical care, the intensivist, because those, those withdrawal, they can get into trouble, especially if you just rush to an operation for one reason or another. And, um, not rush, but you didn't see that they're gonna go into the throe, and after the operation, they are in bad shape, at a minimum they can rip their breastbone apart, they don't wake up that quickly from the anesthetic, you know, they are still intubated, they're wiggling in bed, and they end up hurting themselves, and the mediastinum, if they tear open their breastbone, they can get infected and go from one thing to another. It is a medical problem more than anything.	withdrawal management, medical model, multidisciplinary group
	1009	Withdrawal, what has that experience been like, as well? Surgeon: I usually will have the pain service kind of manage that. When these patients come in, especially if they've had a lot of narcotic or opioid use ahead of time, we just let the service know prior to surgery, please come see the patient after the operation and whatever recommends they have we follow.	withdrawal management, pre-operation care
Accountability			
	1008	Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that	societal issue, deservingness, frustration, accountability

		do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school.	
	1011	I like the fact that it is a definitive thing, that you fixing the problem will fix them if it is a definitive problem it will have a definitive fix so most of the time you are able to see definitive results. So, I like that aspect of it. It also is sometimes stimulating to figure out how to put back together what you have just taken apart. Sometimes it is really artistic, and it is really fun to do and at the same time the results that you see are, uh, can be separated at the time of that operation. Unlike some of the non-interventional fields where the process is more gradualized, so part of it is selfish too, self-gratification, it also is a definitive treatment, kind of a thing in my mind, you know there are things that medicine can fix, but there are things that you really just have to physically fix them.	accountability, knowledge, mechanical problem
	1014	If the options were to have a PICC line and go home, have a PICC line and to a nursing facility, or have a PICC line and stay in the hospital, what do you think is the safest option for the patient? S: Hospital is, I don't know if it is safe, to be honest. We had, we had a patient that arrested on the floor, he was using in the bathroom after a valve operation. It was not my patient, it was one of my partners' patient. I walked in, and I saw them doing CPR, they found a needle, they found a syringe and needle in the bathroom. So, somebody, these things happen, you know. Probably safer, than home, you know. Maybe nursing home or a rehab facility, I don't know. I mean, again, it all depends on, on social, you know, insurance, and all these things. And, can you believe, you know, keeping somebody in the hospital for six weeks, getting antibiotics, occupying a bed? Nobody going to be happy, the hospital not going to be happy, the patient won't be happy, the third-party payer won't pay for it even if they have it, so, here we go.	PICC line risk, insurance, administration, accountability, relapse

	1012	replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	save lives, priorities, accountability
	1015	To close, is there anything I haven't asked you about that you would like to say? S: Uh…I think that, um, people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	liability of medical professionals, disagreements (professional), multidisciplinary group, frustration, accountability
	1001	will certainly ask if any potential possibility for the patient to just stop – you know, that is something I recommend. I would like to hear from the patient's perspective if there is anything that would potentially stop the patient from at least pursuing that. So I will be very concerned if a patient openly says there is no such plan, because I know the risk of reinfection will be coming, and that would be even wors	commitment to recovery, accountability, discussing addiction, paternalism, reinfection, priorities, risk evaluation
	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in	accountability, changes over time, collaboration with addiction medicine, commitment to recovery, follow-up care, multidisciplinary group

		the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	
	1015	: Ok. Do you feel supported in your care of people who inject drugs? S: Yes. Well, yes. I: Ok. How do you feel the hospital could support you more? S: Um…uh, the biggest thing I've noticed in changing jobs or changing locations is there were understandings at other hospitals where by the surgeon would take the patient to the operating room, do the operation, and these patients who were not candidates for outpatient antibiotics would sit in the hospital for 6 weeks but would be transitioned back to a psychiatry service or medicine service, where here once they are on our service, I have had a lot of difficulty, if not it's been impossible to, you know, put them on someone else's service once their surgical problems are over.	support for surgeons, accountability, follow-up care, administration, frustration
	1004	: So, what are some of the first thoughts that you consider when you're asked to evaluate a person who injects drugs for a valve replacement? R: sad. Tough decisions. These people come in sick and don't take care of themselves. I do worry about getting viral infections like Hep C and HIV. There are no professional guidelines.	infection risk to surgeons, stigma , accountability, protocol, lack of resources, deservingness, commitment to recovery
	1008	And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, post-operation care, liability of medical professionals, follow-up care, accountability, paternalism

	1003	And we've made a lot of important strides. There's more available now. In fact, in the past, we've just would ship them to Shattuck or Tewkesbury, and never hear from them again. But that's no longer the case. We have good follow up, make sure they have good follow up, with the people locally or [at their] homes and if not that, then Dr. Patil and his team will – [see them as] outpatients, so – and infectious diseases always seen these patients afterwards, keep an eye on their infections. But I think the follow-up now is much better than it was in the past. So, the patients tend not to fall through the cracks. Get – you know – the last thing I want them to do is go back in the community and get hooked up with their old network of drug users. They need a new environment and a clean slate, and I think we're doing a better job of making sure that happens.	follow-up care, multidisciplinary group, changes over time, second chance, accountability, screening for ID, commitment to recovery, relapse
	1017	Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	frustration, desired changes, multidisciplinary group, support for surgeons, accountability, disagreements (professional)
	1010	Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar.	societal issue, SUD treatment, accountability, support for patient, collaboration with addiction medicine

	1009	Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	support for surgeons, societal issue, post-operation care, frustration, follow-up care, lack of resources, medical model, multidisciplinary group, collaboration with addiction medicine, accountability, futility

	1008	Do you think that the treatment for endocarditis in the people who inject drugs is going to -- will change in the future? Respondent: I hope so, but I doubt it. Interviewer: Okay. Respondent: I don't see any wonder drug coming around or other therapy. I think it's going to be this way for the next 10 years. Interviewer: And then maybe in the 10 years after that? Who knows? Respondent: Who knows. Interviewer: Are there any changes you would like to see? Respondent: I'd like to see this opioid epidemic go away. It's multi-factorial. It's not just the drug companies. It's the doctors, it's the -- you got to blame the patients. I've put 80 percent of it on the patients. They did this to themselves. And, you know, doctors over-prescribe Dilaudid and Percocet and things like that. And they have like the Sackler family that do pharma -- actively marketing these drugs to people that don't really need them or shouldn't need them. Everybody's at fault here. But I have to blame the patient. Like with the French existentialist philosopher. You got to take responsibility for your own actions and I'm sort of in that school. Interviewer: So, who like -- I don't know. Who would need to make changes then? Everyone? Respondent: Everybody. Interviewer: Yeah. Okay. What kind of changes would you want to see? Respondent: Well, more restricted use of opioids. I personally don't even prescribe them. I let my PAs do that. You know, the pharmaceutical companies can't take such aggressive marketing approach. Doctors have to be aware that there's other options besides opioids for pain control. And patients have to realize that, if they do these things, it could be bad for them. More education, I think, would be good.	changes over time, pain management, accountability, cost, deservingness, frustration

	1010	Does a history of injecting drugs impact what type of valve you would choose? It does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	discussing addiction, follow-up care, post-operation care, accountability, support for surgeons
	1011	Does the patient's commitment to treatment impact your surgical decisions? This is a hard one to answer. And that's because I think all these patients truly want to commit to treatment at the time they're having, they're facing the dilemma but it's going to be unclear if they are actually going to carry on with their promise. This may sound a little distrusting, I don't think they're actually trying to deceive or lie it's just the situation they're in. They're in a bad situation and they truly feel like they are not going to do drugs anymore once they get the operation. They really want to lead their life and get their act together but once the operation is done then they are back out on the street and they are not feeling as miserable as they were before the operation I think that that becomes a thing of the past and then the temptations of the problem that they are faced with come back again. So, it is really hard to make a judgement as to what is going to happen based on their commitment. The way it does impact it is that somebody who is up front about that they are not going to stop using drugs and they're going to continue to use drugs in that case you have to question the utility of intervening.	commitment to recovery, relapse, perception of risk in PWID, accountability

	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes.	discussing addiction, commitment to recovery, accountability, frustration, futility, patient consent, contract
	1012	Does the patient's commitment to treatment impact your surgical decisions? Yes. How so? They have to at least agree that they want to quit. Which they almost always do. But, you know the honesty with which they agree to it is uh, you know, often suspect. And how do you go about those conversations and determining that? Well I tell that that their problem is their substance abuse and if they keep using they are going to get more infections, that we can fix the problem but they have to they have to quit. Do you understand that- "yeah, yeah", have you tried to quit "yeah I've tried before", are you willing to try again "yeah I am willing to do it again", but that is how the conversation usually goes. Tell me about your experience with managing pain in this population. They're often, they often are difficult to take care of because their pain tolerance is very low and they require large doses of medications which the nurses and some of the doctors are sometimes uncomfortable giving those doses of medications so, uh, they can be challenging.	commitment to recovery, discussing addiction, frustration, accountability, patient consent, contract
	1010	ell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue	withdrawal management, pain management, collaboration with addiction medicine, accountability, liability of medical professionals, deservingness, follow-up care, protocol, risk evaluation

		or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	
	1011	Have you ever discussed drug use with a patient like this? Every time. So, any patient that we know is using drugs and this patient is able to participate in the discussion for the operation, this is something that I discuss with them very frankly and candidly and sometimes even in, um, in black and white. So, we do discuss the fact that their drugs are probably the cause of why their valve in infected, that the valve operation may fix the mechanical problem that they have, but if they go back to doing drugs again, the new valve will likely get infected and they will be worse off than they are right now. What questions do you ask? Charlie, what drugs were you using? When was the last time you used it? Have you tried quitting in the past? And then I ask them what their social support system is because I think that is what is going to prevent them from using drugs again.	discussing addiction, accountability, paternalism, SUD treatment
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, contract, commitment to recovery, deservingness, paternalism, accountability
	1018	Have you ever discussed drug use with a patient like this? Uh, I discuss it with all patients because that's the background. Sometimes you don't have a chance to do that pre-operatively but if it's not an emergent operation If so, what questions did you ask? Well I ask them first of all what are their thoughts on the role of the substance use and the infection and uh, what are their plans to get that part of the problem under control. And usually I try to make them verbally commit that they will work as hard as we will.	discussing addiction, commitment to recovery, contract, accountability, paternalism, deservingness

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	1008	Have you ever discussed the drug use with a patient like this? You know, like what kinds of questions would you ask? Respondent: Oh, every case. Interviewer: Okay. Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	pre-operation care, patient consent, discussing addiction, deservingness, paternalism, accountability
	1015	Have you ever experienced conflict within your team or other staff members about this… S: No. Because at the end of the day, it's whatever you want to do as, you know, the surgeon treating the patient, so, no one is going to fault you, um, so… I'll leave it at that.	disagreements (professional), accountability, paternalism
	1012	How did you approach that case? I replaced the valve and or the root. How did you think about that case? So, when they first come in you have someone with a life-threatening problem and it's like any other life-threatening problem you don't make judgements about whether or not how they got to where they got you have someone with a lesion that is correctable um, and you fix it, and then you try to put the necessary social supports in place to help them get over their illness so that it doesn't happen again and that is where the system fails.	protocol, priorities, support for patient, accountability, defensive
	1012	How do you think the hospital could support you more in the care of patients who inject drugs? Again, I think that when you're, when you're going through the intensity of fixing somebody's valve that has a life-threatening problem, their primary issue is substance abuse, it's like somebody coming in with cancer, taking out their primary tumor, and sending them out without any follow-up for chemotherapy or radiation therapy. That is what it's like and so they come back with	administration, cost, accountability, insurance, support for patient, support for surgeons, SUD treatment, follow-up care, societal issue

		recurrent disease because we haven't treated their problem, we've only gone after the obvious lesion. And, and, the reason we don't have that is because it doesn't make any money. What does make money is chemotherapy and radiation therapy- that makes a lot of money- and so the hospital will pour resources into that because it brings back money to the hospital. This kind of stuff makes no money, it's a social problem, it requires government support because no private enterprise is going to pour money into it. What actually makes money is the heart surgery they come in with, to get the valve replaced, so there is no financial benefit to the hospital putting resources in that kind of a program so therefore I think it has to be a government program to prevent the problem.	
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	1011	How do you think the hospital could support you more? Um, one of the things we struggle with is that we don't have way, the resources, it always comes down to resources, right, we don't have a good way to even tabulate these patients, or to go back and find these patients in the database so it would be really good to have a dedicated clinic for these patients where they could meet the infectious disease doctors, and you know the addiction people to sort of help reinforce these recommendations. I know a lot of times we had rely on the other facilities to help us do this, you know even some rehab or some other clinics that provide this care, I think our team does do a good job of sort of communicating with them but where we are going to make the difference in these patients life is less in the operating room and more so what happens to them once they're discharged, you know, once they are back on the street.	lack of resources, accountability, post-operation care, data, follow-up care, support for patient
	1012	How knowledgeable do you feel about the available treatments for people who use drugs? Um, again I, that's not my area of expertise, um, uh I can only, I am not very knowledgeable about it, I can only say that I can never remember being impressed about a patient who comes in with a problem, I've got an LVAD patient that keeps on coming in intoxicated from alcohol, I can't find him an inpatient program, no one will take someone with an LVAD, it's often true of someone who needs IV antibiotics with a history of drug abuse, nobody wants to take them, because they are a risk. And they don't bring in any money.	lack of knowledge, SUD treatment, cost, accountability, liability of medical professionals
	1009	How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really	disagreements (professional), accountability, frustration, multidisciplinary group, follow-up care, societal issue, desired changes

		paying attention to what's going on in that case.	
	1003	I have to say that's a minority [of] cases. Most patients I've found have gone on and been clean for a x number of months, sometimes years, and then gone back using drugs again. Chances are I'll offer them a second operation. If I get a sense they're going to try once more to fight the disease, and hopefully overcome it. So, it's - I know – I don't have a set answer; it depends on the set of circumstances, but I have to say, more often than that, we will offer them a second operation. Provided it get - I know that they tried in the past, and I think the capacity to try again.	follow-up care, relapse, prevalence of endocarditis, multiple surgeries, second chance, accountability, empathy
	1003	I mean, it's a good analogy. I think yeah, I think they have a life-threatening problem. We all have our foibles; we all make mistakes and bad decisions. And our goal is to give them a new lease on life and hope that the decisions they make down the road will be smarter decisions, and wiser decisions. So, everyone deserves another chance at that. And certainly, yeah, I mean, I don't have problems with alcoholics getting – former alcoholics - getting a liver transplant. I have no problem with that. I don't have any problem offering valve surgery to a patient who uses intravenous drugs who is willing to undergo therapy afterwards. And as I mentioned, if they're dying, I'll offer it to them without that reassurance, because they deserve a second – we're here to help people [unintelligible 0:20:18]. So, that's a good analogy. Liver transplants and patients with alcohol use. As long as they're willing to [unintelligible] abstain, I think they have to abstain for a period of time before the liver team's willing to put a liver in someone. Interviewer: Interesting. Okay. Respondent: A period of six months, I don't know what the rules are hear. Or we don't do liver transplants, but we used to do liver transplants. But I think it's they have to abstain for a period of time. Six months to 12 months	second chance, liver vs heart, save lives, support for patient, paternalism, accountability, commitment to recovery

		with alcohol before they're willing to – [unintelligible 0:20:49]?	
	1009	I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around.	discussing addiction, patient consent, accountability, deservingness, multiple surgeries, paternalism, reinfection, futility
	1017	I: Do you think treatment for endocarditis for people who inject drugs will change in the future? S: Yes. I: Are there any changes you'd like to see? S: What I talked about before. That, um, that surgical services are not unilaterally burdened with managing all of these problems afterwards, that the true abandonment is of the surgeons, and that if, um, internal medicine, teams, and infectious disease specialists, and um, the addiction psych people need to come back and actually take over the care of the patient and let the surgeons just manage tubes and incisions, and that kind of thing. If you did that, I think that you would	lack of resources, desired changes, frustration, support for surgeons, disagreements (professional), accountability, multidisciplinary group

		see a much different, um, approach and you will see more consistency. We wouldn't run into this problem of Doctor BLANK won't operate so I'm going to find someone that will still operate, and that's not the patients, that's physicians, um, doctor shopping just to get the answer that they want. I think that would change. And again, the model is transplant, it's a good model for how to make a good call, the best with a limited resource.	
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	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	commitment to recovery, deservingness, futility, stigma , contract, accountability, relapse

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	1017	I: Does the patient's commitment to treatment impact your surgical decisions? S: Yes, I think so. I: And why is that? S: I could at least, you know, current state gives us some hope that they are willing to, um, you know, avoid behaviors that will, um, limit their life expectancy. Just getting back to, you know, our whole problem with, surgeons' problem with this is futility and the agony that comes when someone gets a big operation that is successful and then resorts to habits and, and their disease, that, um, kills them.	futility, commitment to recovery, accountability, relapse, contract, deservingness
	1015	I: Ok. Have you ever experienced conflict within your team or other staff members about this… S: No. Because at the end of the day, it's whatever you want to do as, you know, the surgeon treating the patient, so, no one is going to fault you, um, so… I'll leave it at that.	disagreements (professional), accountability
	1014	If the options were to have a PICC line and go home, have a PICC line and to a nursing facility, or have a PICC line and stay in the hospital, what do you think is the safest option for the patient? S: Hospital is, I don't know if it is safe, to be honest. We had, we had a patient that arrested on the floor, he was using in the bathroom after a valve operation. It was not my patient, it was one of my partners' patient. I walked in, and I saw them doing CPR, they found a needle, they found a syringe and needle in the bathroom. So, somebody, these things happen, you know. Probably safer, than home, you know. Maybe nursing home or a rehab facility, I don't know. I mean, again, it all depends on, on social, you know, insurance, and all these things. And, can you believe, you know, keeping somebody in the hospital for six weeks, getting antibiotics, occupying a bed? Nobody going to be happy, the hospital not going to be happy, the patient won't be happy,	insurance, relapse, PICC line risk, accountability, administration

		the third-party payer won't pay for it even if they have it, so, here we go.	
	1005	Interviewee: Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary. Interviewer: I think you're already starting to answer this next question, does it impact your decision to operate if the endocarditis is related to drug use? Interviewee: Yes.	multiple surgeries, pre-operation care, deservingness, reinfection, relapse, accountability, commitment to recovery, frustration
	1008	Interviewer: Okay. Cool. And then for post-operative care, what are your thoughts about these options? So, like giving someone a PICC line and sending them home? Giving them a PICC line and keeping them in the hospital? Or giving them a PICC line and going to a nursing facility? Respondent: We would not put a PICC in and send them home because they, 100 percent of the time, will shoot drugs right in their PICC line. Nursing home or keeping them in the hospital. But they have to be under close surveillance. I mean if you sent somebody home with a PICC line, you're asking for trouble. They will always come back. It's just so easy. They don't even have to stick themselves.	PICC line risk, accountability, commitment to recovery, futility, post-operation care, priorities

	1008	Interviewer: So, we can talk more about that, too. What impact with the patients like commitment to treatment impact your decision? Respondent: To do what? Surgery? Interviewer: Yeah. Respondent: First go around, I will do surgery on everybody. Interviewer: Okay. Respondent: It's the second time. If they've shown that they can't stay off drugs, we don't offer them another operation and we tell them that. But I'm not sure what we tell them really impacts -- what they do very much. Interviewer: When do you have that conversation? Respondent: Before and after. Interviewer: Before and after? Okay. Okay. Respondent: Repeatedly. Interviewer: Okay. Respondent: Especially if we find them shooting up in the hospital.	commitment to recovery, accountability, deservingness, discussing addiction, frustration, futility, priorities, reinfection, relapse, risk evaluation, second chance

	1009	Interviewer: Do you feel supportive in the care of these patients? Surgeon: No. We are asked to see these patients when they are well down the rabbit hole in terms of their disease. And oftentimes surgeons say the disease is not the endocarditis. The disease is addiction. And this is particularly speaking of a subset of patients who have endocarditis secondary intravenous drug abuse. These patients we'll see in and out of the emergency room with infectious of their arm, infections elsewhere. Where you clearly know this patient has a problem. It hasn't affected the heart, yet, but they go in and out. No primary care docs are accepting new patients and so they can't get a primary care doc. The follow up, sometimes they're given a slip of paper to call this number for a primary care doc and patients never follow through. But oftentimes we end up kind of having these patients that are now they have advanced heart disease. We operate on them and then one of the biggest challenges we face is that after the operation, you know, we take care of them for weeks, a month, and then when they leave, you know, where is everybody? Everybody who was wringing their hands, the addiction medicine specialist, everybody, social workers, oh, you have to do this, you have to do this and, you know, the cardiologist, "Oh, they need the valve surgery." And then when it's time for someone to take care of these patients, long term, there's no one there. Part of it is patients don't follow up but the other part is everyone who was so hot to trot insisting that the patient have an operation, they're not there to take care of the patient afterwards. There's a saying "Beware of the courage of the noncombatant." You know, people who are not surgeons, they don't truly understand what it is to do these operations and what it takes to care for them and get them through and that is frustrating. Do we feel supported for caring for these patients? One hundred percent, no.	multidisciplinary group, collaboration with addiction medicine, support for surgeons, accountability, frustration, futility, lack of resources, post-operation care

	1009	Interviewer: Do you think that treatment for endocarditis and people who inject drugs will change in the future? Surgeon: In terms of surgical management? Or? Interviewer: Yeah. Surgeon: No. I think the operations are pretty standard. In the absence of new antibiotics that are much more effective, I think it's still going to be the same. I think you operate on patients with heart failure and mechanical complications. Interviewer: What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	changes over time, desired changes, societal issue, accountability, stigma
	1005	Interviewer: Does the patient's commitment to treatment impact your surgical decisions? Interviewee: Yes. Interviewer: Can you say why or why not? Interviewee: I don't think that we should offer everything to allow a patient's survival if they decline rehab and reuse drugs immediately, even though it's out of our control. I guess I always feel better spending all the time and resources on these folks if they're willing to at least agree to try to do their part.	commitment to recovery, deservingness, paternalism, accountability, cost

	1001	Interviewer: For this patient, when do you think this treatment should be started? Respondent: I would say start it right away, because they should be evaluated even in preop. Then they can be carefully monitored. You know, theoretically I would want those patients to be closely monitored for the first few months after surgery, and that way there's no chance for them to get back into the drug use – because the risk for reinfection within the first few months is very, very high.	timing of SUD tx, pre-operation care, relapse, accountability, follow-up care, post-operation care, perception of risk in PWID
	1009	Interviewer: How would you discuss drug use with a patient like this? Surgeon: So if she's in shock, you're probably not going to be able to speak to her. But for patients who are awake and you can have a discussion, I start by talking about what's wrong. Tell them you have this heart valve infection. The reason this heart infection developed is because bacteria entered the bloodstream from contamination and it's either destroyed the heart valve or caused some problem and that they're going to need surgery to fix it. I tell them at the time of the initial operation that things happened. I never refuse an initial operation just based on the fact that it was secondary intravenous drugs. Everyone should be given that opportunity. Things happen. There's a lot of self-inflicted disease. But in a patient who's stable and I can have the conversation, now I tell them if you use an intravenous drug again and infect the new valve, again, that I would not feel comfortable operating on them, again. And that's kind of been the policy amongst all of our group, all of our partners. So I have that conversation upfront just saying there's no judgment, here, "We're going to do this operation regardless of why you need the operation but this isn't something that's going to happen over and over again." So we set that out and I document that in my notes the first time around. Interviewer: What language do you use to have that conversation. Would you use the term opioid use disorder or like how do you describe the drug use? Surgeon: When I'm speaking with the patient I just say if you use any sort of, you know, if	accountability, discussing addiction, protocol, futility, medical model, paternalism, patient story

		you're injecting something, then we're not going to operate on you. I have had patients that don't inject drugs. I've had patients that have disorders where they'll inject anything in their vein and it can be tap water but they like the – this one patient, in particular, he liked the sensation of the needle going in his arm. And so anything he could get his hand on he would fill a syringe with and he would – his tox screens would come back negative. He infected himself three times. I operated on him twice and it came out that he doesn't care about the drugs. He just like the rush of injecting things. So, yes, he would be using drugs but when he didn't have access to drugs, he would just stick the needle in his arm and shoot things up. So it doesn't necessarily mean drugs.	
	1001	Interviewer: How would you feel about working with someone you used to use ten years ago, and then they get a prosthetic valve endocarditis because of a dental procedure? Would that make you feel differently than Katy's situation? Respondent: Yeah, because it's preventable. I think every surgeon's perspective will be different, but we're not just the surgeons [unintelligible 00:28:26] but we do care about their overall health, care, and the outcome in the long run. We wish to be able to identify the real cause of the underlying disease. For example, here if endocarditis is clearly drug related and there is evidence the patient has been relapsing back into drug use, their clinical suspicion for a reinfection will be very high and predicted. So this is a different scenario from endocarditis, from the routine dental procedure, or [undiagnosis] of the etiology. So this is completely two different scenarios. Even though the surgery itself is the same – the operative short-term outcome might be similar, but their prognosis is different. That	commitment to recovery, perception of risk in PWID, accountability, deservingness, reinfection, follow-up care

		affects the surgeon's perspective of the surgery itself.	
	1009	Interviewer: How would you resolve that kind of conflict? How do you bring it up to someone? Like, hey, you're not doing your job. Surgeon: You really can't these days. The culture is such that where there's no accountability. You know, a patient – whoever is taking care of the patient in the hospital, right, let's say they're on a medical team, that's not going to be their doctor when they leave because the hospital has hospital-based physicians. I'm on taking care of this patient this week and it's a new doctor next week. But it's not as though it's, oh, this is my patient. I'm going to see them I the office and I'm going to provide longitudinal care for them. It's a constant rotation. And so I think there's less of a focus on really paying attention to what's going on in that case.	disagreements (professional), accountability, desired changes, societal issue, support for patient

	1009	Interviewer: Then what's your sense of your approach to treating patients who inject drugs with infected endocarditis compared to other people here at this hospital? Surgeon: In terms of treatment? I think as a group, at least in terms of our surgeons, again, we're always willing to give someone a chance you know that first time around. And so we would like to see a little more support from the addiction medicine services, the general medical services, again, as I said. The Infectious Disease Services, the general medical services, again, as I said, the Infectious Disease Service has been – they're really good here but sometimes the other support services are not as engaged or they're much less engaged after the patient has surgery. And so we'll do that operation the first time around but having teams willing to take care of these patients afterwards because as heart surgeons we're just not equipped or have the time to handle all these other general medical issues afterwards. And, you know, a lot of times they'll keep these patients on our teams for weeks and weeks on end and then, you know, I've had patients – a guy we put two mechanical valves in and big long operation. He had a lot of problems. His aorta needed to get replaced. And he gets through okay. We keep him on our service for about two or three weeks after. He's perfectly stabilized, everything is great. But I can't keep him in the hospital on my floor for a month and a half for his antibiotics because then other patients who need heart surgery aren't getting it because there's not a bed. So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't	tx compared to colleagues, deservingness, collaboration with addiction medicine, multidisciplinary group, lack of resources, frustration, accountability, desired changes, follow-up care

		have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	

	1009	Interviewer: What would you like the hospital to do? What would be better to support them? Surgeon: So follow up. These patients need to have a place that they can go and get treatment. It's one thing when we do the initial operation. The most frustrating thing is when these patients come back. Right? I think that you'll find across the country there's going to be a spectrum. Some surgeons won't operate even upfront if it's secondary to injection drug use. That's one extreme. And then there's another extreme where a surgeon wills say, I don't care, I'll the operation over and over until they're dead. Most people are somewhere in the middle. I think my general sense just from speaking with colleagues is that most people will do the first upfront operation but will not do the operation for recurrent drug abuse if they infect the new valve from that. And so, sorry, I went off on a tangent, there. What was the question? Interviewer: What can a hospital do to better support you? Surgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things. Our infectious disease service, here, is good about following these patients for their antibiotics, afterwards. But it's a lot of the other things. Oftentimes we end up being listed as like their primary doctor when they're discharged and we'll have these patients that we've operated on that are calling us for every medical need and we're just not equipped to	support for surgeons, administration, tx compared to broader, accountability, desired changes, follow-up care, frustration, lack of resources, post-operation care, multidisciplinary group

		do that. Our office is not equipped to handle that. But then when the patient calls and says I need a refill on this medicine or I need an anxiety medication, you know, I don't have an hour to call around to every different primary care office to see whether they'd be willing to see the patient and then they say, "Well, we're not going to see them for a month." I mean, but because we've taken care of them for the bulk of their hospitalization that's what happens.	
	1001	No, I don't think in the Cardiac Surgery Society there would be a guideline regarding how to take care of a patient with active HIV and hep C – for example, the infection – or patients with a history of a drug use. I don't think there is such a guideline for us to follow. If you notice anything, I [would like to read, easily]. [Overlapping noise] if there's such a guideline.	protocol, accountability, lack of resources, lack of knowledge
	1003	nterviewer: You know, what are your thoughts on management decisions in those cases? Respondent: Well, I – we try and figure out it's a new infection, or the old infection that never resolved, from inadequate therapy, or inadequate surgery, the first time around. So, I'll try to get a sense of why they recurred, and then we - the obvious question is, have they started using drugs again. Relapsed. And so, I think certainly it's – if it's a [technical] problem, or in fact, [if] the patient wasn't treated adequately the first time around, then we'll offer them surgery obviously.	accountability, liability of medical professionals, deservingness, relapse, follow-up care, post-operation care

	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care
	1005	Oh, we see a lot of prosthetic valve endocarditis, and my first question always is are they reusing or positive on admission. If they are positive on admission I will not consider re-operating on them immediately. If they are negative on admission then we treat them like any other prosthetic valve endocarditis patient in the hospital, try to sterilize them or do the preoperative workup and whatever is necessary.	relapse, accountability, commitment to recovery, deservingness, frustration, pre-operation care
	1019	OK. So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I don't think it's a valid comparison. In other words, I wouldn't say… I do not think that it's appropriate to say I'm not going to operate on this individual because they're going to destroy this bioprosthesis	liver vs heart, commitment to recovery, futility, accountability, stigma

		Right because we have thousands of bioprostheses on the shelf. Um, not thousands maybe tens of… tens of… maybe a hundred, I don't know. [LAUGHTER] I don't know how many we have on shelf. But, we have lots. Right Point is: I can put the patient back on pump, arrest the heart, take it out, put a new one in. No harm, no foul. And I haven't denied anybody else therapy because of that. Right But, with transplantation, you have to be more thoughtful about this, and you have to be more selective, and you have to be careful to choose your recipients as people who are really going to take care of the organs they're going to get.	
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	1015	people who don't have to operate on these, um, patients, this patient population, um, they, uh, are, feel that they can be more aggressive asking and requesting surgeons to take these patients despite the high risk and the recurrent drug use, um, when really at the end of the day, if something happens, a complication or what not, it is the surgeon's responsibility. I feel like the medicine physicians are absolved of any responsibility in that decision, so, um, that's why I think it's important for internists and physicians, or infectious diseases physicians, to be present at whatever multidisciplinary meeting, um, because they are usually the ones pushing hardest for recurrent operations in these patients, so…	liability of medical professionals, disagreements (professional), accountability, multidisciplinary group, frustration
	1004	R: If the patient doesn't come from within our network or doesn't have insurance, we don't take them, especially if they were referred from another site. MGH can take people from any of their clinics, they have deep pockets, but we're little old Tufts and we don't take them. They get passed around like a hot potato.	insurance, cost, societal issue, accountability, tx compared to broader

	1008	Respondent: I say, "You got to quit taking drugs. Otherwise, you're going to die." "And if you re-infect your valve while taking drugs, you're not going to get another operation."	paternalism, deservingness, accountability, commitment to recovery, discussing addiction, frustration, futility, multiple surgeries, second chance, stigma
	1001	Respondent: So we're not talking about the surgery at this point? This is medical? Interviewer: The medical management, mm-hmm. So the options are we can give her a PICC line and she can go home, we can give her a PICC line and she can stay in the hospital, or we can give her a PICC line and she can go to a nursing facility? Respondent: I'd prefer the patient stayed in the hospital, if possible, but I just don't think if that would actually happen because of the financial issue. I still believe overall the hospital is the safest place for those patients – being medically managed and closely monitored. I personally don't think a patient with a recent history of active drug use should go home with a PICC line. I think it's prohibited. That's just a perfect setup for drug use again at home.	cost, relapse, PICC line risk, accountability, follow-up care, protocol
	1019	So some people make comparisons between valve replacements in the set-… in the setting of infective endocarditis, and liver transplant in the set of alcoholism. What do you think of these examples? Umm, yeah, you know, that… that… that's interesting. So… so, they're not the same. And the reason that they're not the same is because liver or-… liver organ donors are scarce, and, so, when I perform a liver transplant on somebody, I want to know that they are not going to engage in behaviors that are going to cause toxicity and damage to the liver, ok? So, transplanting an alcoholic who might start drinking again is a dangerous business, and it's actually, it's… and you can make the argument, and I think it's a valid one, that you are, um, withholding organs from more suitable recipients by transplanting someone who's an alcoholic who's likely to start again. But that's very different with cardiac surgery, right? Because if the valve fails, I can just take another one off the shelf and put it in? So, I	liver vs heart, accountability, commitment to recovery, deservingness, futility, stigma

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	1009	So these patients sometimes they get moved to a medical team and they're kind of left ignored. You come to find out later, oh, well, their Coumadin wasn't being dosed properly and their valve – you know, are you familiar with Coumadin. Interviewer: Yeah. Surgeon: So basically their Coumadin is not dosed properly and that puts them at risk for thrombosing their valves and it's just frustrating because what you were paying such attention to people don't care as much about anymore and they're like, oh, their Coumadin is so therapeutic. No big deal. We'll do this and for us that matters a lot. But we shouldn't have to micromanage that when the patient is on a medical team. But it's what happens. The care is suboptimal.	post-operation care, follow-up care, frustration, multidisciplinary group, accountability, desired changes
	1010	t does, sometimes because it uh it creates a narrative, creates a conversation about valve to use which would not be there. I always recommend mechanical valves because I think that if the patient at least early on has a reason to go to the doctor to check for coumadin levels and those things, they will be more likely to stay within the system and seek medical care for things other than their addiction. So mentally I think I can help them feel they are seeing someone 3x per week, once a week, not because they are junkies, but because they are young people that have a mechanical valve. You can put the junkies in quotation marks. So I always push for mechanical valves and I always explain it to them as if, you know, I explain to them I am treating them like a 25-year-old who needs an aortic valve. Because hopefully from this point on this is a new beginning for the rest of their lives.	age, accountability, commitment to recovery, follow-up care, second chance, paternalism, discussing addiction, post-operation care

	1010	Tell me about your experience with managing withdrawal in this population. We don't quite withdrawal. Withdrawal from drugs? Yes, withdrawal from drugs. We don't quite see it here because they are medicated because they had surgery. What we do experience is phone calls after they are gone where they ask for pain medication and you don't know if that is a legitimate pain issue or withdrawal and they want to treat their withdrawal. The way I treat that is when someone asks if I can write that guy for morphine who took the call, I tell them absolutely not they need to be seen either by us or their uh primary doctor or addiction doctor. But I would never ever prescribe narcotics over the phone. But I would not do anything unless they saw someone.	withdrawal management, accountability, deservingness, follow-up care, protocol, risk evaluation
	1005	terviewer: Do you look at a 25-year-old with a prosthetic valve endocarditis differently than a 55-year-old? Interviewee: No. Interviewer: Does age impact your decision to operate on a prosthetic valve infection, or what about the type of valve? Interviewee: No. The type of valve depends on a patient's compliance and insurance. As a patient that does not have any insurance is most often not compliant with coumadin and lab checks, so we tend to put more tissue valves in that patient regardless of age.	age, accountability, insurance, discussing addiction, frustration, post-operation care
	1012	The surgical system is well developed, you have someone who comes in with a problem, we have a surgical system that can fix that problem. What we don't have is a social net afterwards to catch them and to help them get over that problem- they have a disease which is a substance abuse problem, and our social net is terrible, and I have never, never, ever been satisfied with the support structure that patients after they have major surgery like this go home with. Cause in most places you'd exp, err, most situations you would expect someone like that needs an inpatient facility where they are going to get intravenous antibiotics, and they are going to get counseling, and they are going to get all that other stuff, but what they get is an inpatient facility for the antibiotics and they don't get any of the other stuff, and so when they are all done they go back and they are with their same group of friends and they don't have that	accountability, societal issue, lack of knowledge, support for patient, empathy, follow-up care, lack of resources

		support and they often will fall right back into the same um, situation that got them there in the first place.	
	1004	These people come in sick and don't take care of themselves	accountability, commitment to recovery, deservingness
	1011	They get one operation and if they don't clean up their act then they are done. And I think it is everybody's individual moral compass which drives them to that decision. Everybody has rules but everybody breaks them as well, so that is something that is very very tricky to come to a decision as a blanket statement.	accountability, protocol
	1009	urgeon: The hospital should ensure that the patients have appropriate follow up with primary care physicians who are going to be managing the patients and taking care of their long-term other medical needs. There needs to be at least some formal process in place for addiction treatment. And it can't just be here's a card and go to this meeting if they're going to take the problem seriously then there has to be something where it's ensured that the patient is going to get that follow up. And, you know, realizing that there has to be some patient accountability, too, and counseling and [unintelligible 0:10:30] saying that, you know, this is your body. You have to make these choices. I think those are probably the most important things.	commitment to recovery, accountability, deservingness, paternalism
	1009	What about for like the wraparound? All of the other medical management? Surgeon: Yeah, I think there's – now, you know, the opioid epidemic, if you will, people are much more aware of what's going on. As physicians we've been seeing this and we saw the uptick a few years ago. I'm sure there are going to be more resources for outpatient counseling and management. I think unfortunately it's taken away a little bit of personal responsibility because now I have patients saying, well, it's not my fault. It's my doctor's fault that I got addicted to this. And they basically – I think that's one problem that we're seeing that people don't want to take responsibility for their actions and now that it's kind of popular on mainstream media to say that, oh, yeah, this was generated by the	changes over time, accountability, deservingness, stigma

		drug companies. And yes there's fault from the drug companies and physicians and everything but they've almost become a scapegoat for the patients to say, yeah, this is not my fault. I didn't do this. Even though they really did.	
	1010	What do you think about drug rehab? Do you have thoughts on drug rehab? Do I think it works? Doesn't work? Well I certainly think that something needs to be done. You can't just do an operation then drop them back into society. As to whether it works or doesn't work and what works better, I am sure that it does that is why it is being offered but in terms of how well it works and what the percentages are, I am not familiar. How should this patient's, Katie, opioid use disorder be treated? Well there are two parts of it. She needs the antibiotic treatment and the surgical treatment to address the current issue. Again, I don't want to say that studies show because I don't know what these studies are. But my understanding is that there is plenty of evidence if that is all you do, then send them back their own way there is a very high likelihood they will go back to their usual habits. So, I think that these services should be available and that they should be followed longitudinally by the addiction service. And when should that treatment for their substance use disorder be initiated? I think the services should be involved throughout the hospitalization.	SUD treatment, accountability, societal issue, support for patient, collaboration with addiction medicine
	1013	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? So, I would be influenced by, so I think that in that scenario the objective of therapy, there are two objectives of therapy one is to control the infection as you can but it may be to hold it in a bance, the second goal and the second far more important goal is to get her sober if she is using again. So, I would rely on my addiction colleagues to tell me what they think is the best option to help her to get sober. Interestingly its not always going to a nursing home so we have places around us here where there is so much drug use in these group homes that actually a person may be more	PICC line risk, collaboration with addiction medicine, accountability, commitment to recovery, support for patient, timing of SUD tx

		vulnerable to continue to use in that setting than they would at home so let's imagine that they have a very supportive family as compared with a group home where there is a lot of IV drug use they may be better off at home with a supportive family to really get sober. On the other hand, if they are homeless then sending them out isn't the best option.	
	1018	What do you think about these options- I am going to give you three? PICC line and go home, PICC line and stay in the hospital, PICC line and go to a nursing facility? Well it will definitely depend on the patient. I think having a PICC line placed in the hospital and keeping them for that length of time I don't know it's just extremely expensive to do that, and um, I think certain patients with very low risk for the recurrent behavior, I would be ok with going home with a PICC line. And then, other skilled nursing facilities, nursing homes, the spectrum is so broad, there are some that just have a revolving door for the patient's friends bringing in drugs I don't trust them at all, and others are practically lock-down prisons, I would obviously prefer the latter.	PICC line risk, cost, commitment to recovery, accountability, stigma , tx compared to broader
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	1008	What other -- are there any other factors that might affect it for other patients in terms of PICC line? Like their housing, their insurance, job status? Respondent: All of the above. Sometimes insurance won't pay for them to go to a nursing facility. [unintelligible 00:15:48] home for that matter. So, they have to stay in the hospital. Yeah, all these things- enter into the, you know, decision. But in general, we still try to do what's best for the patient. And, you know, the fact that they're taking drugs and have actively been taking drugs does affect that decision. You got to keep an eye on them.	post-operation care, liability of medical professionals, follow-up care, accountability, paternalism, insurance
	1007	Who do you think needs to make these changes on how much time is needed for these changes? Speaker 2: The administration at the hospitals needs to have more commitment to it, if, if that's what they're gonna do. The time depends how well they're up there and executing it.	administration, time constraints, accountability
	1012	you have someone that already faced a life threatening problem, you realize the depths of their disease when someone would do that to themselves again, after going through a major heart operation, to fix a problem they have given themselves, you would expect that would be a very eye opening you know, life event and that that would enable them to turn their lives around and it's just amazing to me that time and time again it does not. And you also realize that one of the problems that I mentioned earlier, we don't have the social supports necessary to help these people get through their illness. And then you realize I can do this again, but it is very likely they are going to come back a third time, and when do you stop? I	stigma , seriousness, relapse, reinfection, accountability, deservingness, follow-up care, multiple surgeries, futility, lack of resources