Appendix 2: Sample Quotations Illustrating "*The Nimble Approach*"

FAST – Acting quickly to address rapidly accelerating crisis - making decisions about suspending or continuing programs, deploying ad hoc strategies to expedite communication with teams, other programs	
…you know, it's interesting to see how people responded but like we operate in a very large and bulky and cumbersome healthcare system, right? Like nothing happens fast in the healthcare, new decisions don't happen quickly in the healthcare system. You know everything with COVID was happening like rapidly, in rapid time and like, you know, I kept on referring to COVID time like if you did something last week it was as if, in the before times, before COVID it would be like it was, you know, years old but last week would be equivalently old too, you know, years old, so trying to sort of be nimble in the way that we needed to be nimble is very challenging in this healthcare system.	Pr4, P2
I think really the lack of information, that no one had about what was going to happen and what the future held. So, it felt like things were, you know we were having to sort of re-evaluate where we were at constantly because there would be new information coming through.	Pr5, P6
… Flexible and nimble and just listening to, you know, see on a daily basis what's going on, what the environment is like. I don't think any of these things are etched in. And we're all living- learning to live with a little bit of uncertainty.	Pr5, P5
I think, for instance all through the- those very rapid changes during the height of the pandemic, we were constantly talking with each other and saying "are you considering to do, for instance not refer onwards for colonoscopy or are you considering to stop the invitations", or- we have shared, for instance materials that we have produced for informing participants and how the appointment will look like in COVID situations.	Pr6, P10

…and I have close connections with many of the other [locations] in terms of, as we were all making decisions there was a fair number of emails back and forth, like "what are you doing for this?", "how are you handling this?"	Pr1, P4
…we halted all of that in early March when there started to be restrictions in place. And that was just a decision that was just made unilaterally by our OD.	Pr5, P6
We stopped sending out new invitations and first of all we said, 'If you still have an invite at home, if you still have a test, you're still able to send in the test and we'll analyze it and we'll make sure that you'll, you'll be seen.' So that's what, what we first stopped, like new invitations. But the program went on with the tests we already had been sending out.	Pr9, P9
There's two elements to the program that ultimately ceased but were not formally ceased because of a particular position that was taken, but in practice they came to an end. And in fact, the way the media handled it, they saw this as being the program ceasing but it just wasn't formally described as such.	Pr3, P7
… I think creating the communication materials is always a challenge and making sure there's consistency and that all of our stakeholders are comfortable with the communication that's happening.	Pr5, P5
… we have to get our communications pieces all lined up in a good way… we would make sure that the comms from [first level authority] and the comms from the [second level authority] are comfortable… with respect to the content and the timing, and we would really- our part of it would be to make sure that the various, let's call them stakeholders are not surprised by it. … we're not an isolated program, we're integrated with the other aspects of the health system. …we're asking of ALL the various actors in the process that is screening, from family docs, to labs, to pathologists, to endoscopists, to ah, imaging, ah, hospitals, ahm, private offices, clinics, you name it. All of those folks, all of those settings and facilities, and all of those various physicians and their staff all need to be taken into account….	Pr4, P1

It seemed like a long time; it could have been three weeks I'm not sure, to FINALLY get that document approved, and to FINALLY be able to circulate it. And in the end it was never really broadly circulated, it sounds like, to those you know, to all levels of people involved in cancer care and screening. So it's very unfortunate. And it was, I think by now it got to the appropriate recipients and it's had its effect but it could have had even more impact if we, if a communication strategy had been ironed out. I think this was really a witness of this	Pr1, P3
So, I don't know who thought of the virtual connects, but, you know, that was very rapidly suggested as possible. We called it technical guidance to get around the idea that we were making policy or giving them instructions. But, you know, there's a whole ton of technical guidance that went out.	Pr3, P18
If you create what we call a 'tip sheet,'… then you can actually disseminate it, send it around as much as you want to whoever you want; the tip sheet. [Yeah] So there's been, I would say now there's probably been around 20 tip sheets from all of the areas …trying to tell their group, 'do this, do that, don't do this, don't do that.' [Laughs] [Yeah] So it's been weird. But that's what we found. So this week, actually just yesterday and today, it's been disseminated, we've sent this tip sheet about prioritisation` of procedures as you resume activities. And also about considerations as you restart, you know, that, the important infection control and prevention measures that any unit needs to consider.	P1, P3
So, we tried to create ways to communicate, and so we learned that to have guidance, if you publish such a thing as a guidance or a guideline, [organisation] needs to have its say about it. And then you add weeks and weeks of review and this and that. But if you create what we call a 'tip sheet,' 'tip sheet', very bad name, then you can actually disseminate it, send it around as much as you want to whoever you want; the tip sheet. [Yeah] So there's been, I would say now there's probably been around 20 tip sheets from all of the areas of [organisation] trying to tell their group, 'do this, do that, don't do this, don't do that.' [Laughs] [Yeah] So it's been weird. But that's what we found. So this week, actually just yesterday and today, it's been disseminated, we've sent this tip sheet to Endoscopy Services about prioritisation of procedures as you resume activities. And also about considerations as you restart, you know, that, the important infection control and prevention measures that any unit needs to consider.	Pr4, P3

Well looking back, I think what we, what was difficult was that everybody was working from home all of a sudden, which made it really difficult to quickly connect and communicate with, with everyone in the team. And, you know when [Name of colleague] talks to, to me and I talk to somebody else and that person talks to somebody else, it goes, it really, the message won't be as clear as it comes from either top down, or from the down to the top… it's not so easy when everybody all of a sudden at home and who's talking with who? And normally we have like easy contacts and now .. that made it, made it quite difficult I would say. [Okay] That was a- was a challenge, because normally we are all in the same room, you know [Okay] and you could just say, "Hey, what's this?"	Pr7, P9
So, very quickly our multidisciplinary team meetings moved from face-to-face to virtual. And systems came in place to allow clinicians to continue to discuss patients and to plan treatment schedules in a virtual way and reduce their own risk of infection. …There was also a lot of very quickly established collaborations across the oncology sector that really allowed people to work together in a way that we had never seen before. … there were a number of changes that really were quite significant and happened fast in a way that health reform hasn't occurred in the past. …There were a number of different organisations and agencies came together who had not done that before. And I think that was quite significant…. a year ago the concept that I could work from home and have Zoom meetings with people … incredible really. We could never have done this and yet we very quickly established those systems and the same with Telehealth with patients and with MDT's.	Pr1, P15
… it's a bit of a facility by facility, so what I've seen in my institution is very promptly they would be assessed by video and you know, by telemedicine by the cancer surgery team.	Pr4, P3
The one thing we have noticed with Telehealth though is that the majority of Telehealth consultations in [country] are by telephone, not by video. [Yes] And there are significant limitations to that, to do with patient health, to do with diagnosis of symptoms and signs that are difficult to see. To do with establishing empathy and trust between doctors and patients, particularly in situations where the patient didn't have a relationship with that doctor beforehand. [Yes] And so, I think really the use of Telehealth with video conference is really something that should be encouraged.	Pr1, P15

ADAPTING – Responding flexibly and creatively to manage challenges brought by the pandemic. How program leaders adapted and adopted their management of testing/diagnosis/colonoscopy capacity, access and backlogs during COVID19.	
So first time around, as I say we were, you know, having to adopt and adapt, you know, almost- and things, policies were changing and evolving and being consolidated pretty much day-by-day. …It wasn't the easiest of things to do but we did go, we, we attempted to set national guidelines as to how that [*prioritisation*] should be done. But basically, we, we were able to ask screening centres to identify all those individuals who had submitted a test and had been told that they had a positive test and that they needed to have something done. So that immediately starts to narrow it down to all those that had a positive FIT test. And then we said, "Fine. Can you then tell us how high was their FIT test and whether this was their first, or second, or third, or fourth, or fifth round of screening? [Okay] Because clearly, if people had been through a previous round, so for example, you know we call them up every two years so if people had had a test two years ago that had led to a colonoscopy, [Right] and the colonoscopy was normal, we advised that those individuals, regardless of their level of their FIT test, probably did not need to come for another colonoscopy urgently.	Pr3, P17
So, ther- there were discussions amongst the leads in the screening centers about how you would identify those ones who are particular risk. So one suggestion was that you would base it on the FIT concentration, the higher the FIT concentration the higher the risk and there is truth in that.	Pr3, P7
I mean, normally we're not told what the person's actual numerical FIT value was, we just know this list of people have a FIT value of at least 120. But for a period of time, we were told the numerical value so that we could start scoping the highest FIT values first of all, if required.	Pr3, P16

…we did as a part of the pandemic response issue a document that said, that sort of prioritized all services related to cancer so that would include say, you know, cancer surgeries for people who are having terrible pain, those were considered priority A and would go ahead. And then there was a limited number of things that were in priority A that we recommended that should continue even if a pandemic was on. Then there's a bunch of stuff in priority B, which is sort of the way it was phrased was, you know, these things could continue depending on the impact locally…. you know, priority A should continue and some elements in priority B could continue and then priority C which were things like, included, I think like things like survivorship appointments, like if someone's had cancer and going back for appointments and screening that those were advised that they, in the context of a pandemic, should not be undertaken.	Pr4, P2
… so FIT positive colonoscopies were identified as a Priority B, so patients with those positive FIT results it is highly suspicious for cancer, so we follow up and confirmatory testing is recommended during the pandemic ….	Pr4, P4
So the colonoscopy leads in [country] got together and had a discussion about, 'okay, well, what's considered urgent and emergent services versus not urgent services?'	Pr5, P5
And until …March the colonoscopy services continued to see the people referred from screening. I think from, probably from … March, but let's say from the end of March all colonoscopy services … stopped. It was only EMERGENCY colonoscopy, so only if there was a complete block- blockage of the passage or something like that, so only emergency colonoscopies were being delivered. And we had the agreement with our hospital, with our health boards that individuals that were waiting for colonoscopy, those that are referred from a screening program are of the highest clinical priority as opposed to those symptomatic … we know that the cancer yield from 160 micrograms FIT is quite a lot higher than the cancer yield from someone being referred for symptoms only, without the FIT test. … we worked with all our teams to clear the surveillance backlogs early … [organisation] published the new guidelines for who should be in surveillance which resulted in quite a bit of reduction.	Pr6, P10

…we came up with different priority levels; A being the top, very urgent and B and C but we also increased, added this Category D, for 'DO NOT Perform', at any time, in or out of the pandemic, there's this list of screening, average risk colonoscopy and surveillance for low-risk adenomas that should just never be done, just remove them from your list, you know	Pr4, P3
So certainly there was a backlog, and we undertook, we looked at creating a bit of a lift for the health authorities, of their patients, and we created a bit of an algorithm to risk stratify the patients, incorporating how long they've been waiting since their abnormal FIT, and gender, patient age, and the FIT value.	Pr5, P6

CALCULATING: Modelling and monitoring programs to inform decision-making and support program quality	
And then, what we've been doing is we've conducted some modelling to understand the backlog of colonoscopies in the system to help us understand, as the system ramps up procedures, how long is that going to take and what capacity does the system have… we've done some modeling and looking at it, [catching up on backlogs] and we do feel that eventually we will. I think how soon depends on "do we have more than one wave, um, of the pandemic", as well as how soon do we get a vaccination such that the reduced capacity due to physical distancing at hospitals, etcetera, is no longer impacting care. So, I think that at some point in time we will catch up, but how soon that is, is, ah, depends on many factors that are yet to be seen.	Pr4, P4
…. So I think it's, we start and then we monitor colonoscopy provision and waiting times and there's potentially if colonoscopy starts, if there's, if there's a major effect on colonoscopy by a second wave, we may have to pause the program again. But [Yeah] we're, we're hoping not.	Pr2, P12
So we actually just did an analysis with our macro-simulation model where we looked at, ahm, 'what if there would be a second wave and we wouldn't have full colonoscopy capacity again?' We could do three things, basically. We could say, 'okay, to meet these lower capacity' we could, as I said, 'increase the cutoff for a positive FIT', so increase when we think somebody's positive because that automatically means fewer people are referred. Of course it means that cancers will be missed. The other thing we can do is delay the invitations temporarily so rather than inviting people every two years we're going to invite them every two and a half years, for example, after two and half years. And the third thing we can do, and these are all temporary measures, of course, the third thing we could do is maybe not invite the 55-year-olds yet and wait until they're 57. Or if people have had two negative screens not invite the 61 or 63-year-olds at this time but invite them two years later. So those are all three measures that we could take if we wanted to reduce the colonoscopy demand. And so we used the model to look at these three different measures.	Pr7, P14
… [we're] 'looking at time to colonoscopy and looking at findings of colonoscopies… the rate of colorectal cancer, the state of colorectal cancer was in patients who suffered delays relates to closures.	Pr5, P6

… the other things that we are doing is making an assessment of how many people will have died because the screening process was not in place.	Pr3, P7
… we used the model to see how we could reduce the colonoscopy demand in such a way that it would have the least impact on preventive deaths and preventive cancer cases. And we looked at different measures to decrease colonoscopy demand. We looked at skipping an age group for invitation, we looked at extending the interval, and we looked at lowering the cutoff. And we found that lowering the cutoff was the best way to reduce colonoscopy demand without, well at least with the least impact on preventive deaths.	Pr7, P14
We did initially commission some modelling work that would tell us what the impact would be of any pause to the bowel cancer screening program…. we did that in advance of any changes to the, to the decision, to know how we might mitigate those risks…. modelling would suggest there's a significant reduction in lives saved because of the cancer screening, if we were to have paused it.	Pr1, P8
I think part of the issue is that people are a bit scared to come in for colonoscopy, and I think one of the things that we're anticipating once the colonoscopy starts again, is we may actually not have as good an uptake of colonoscopy as we were expecting, because I think people are still very wary about coming into hospitals.	Pr2, P12
We are monitoring the response of individuals… how the uptake is going but also, we are actually working with our research team to try and see whether we can measure any impact of the delay and of change of attitudes.	Pr6, P10
We'll be able to compare our previous retention rate to current retention rate to see if there's been a change in behaviour of the population, you know, presumably due to COVID but we don't know that yet.	Pr5, P5

ETHICALLY MINDFUL - Considering the effects of the 'nimble response'. Program access challenges - delays, bottlenecks created in program process (invitations, testing, diagnosis, capacity management) and quality assurance concerns (emotional well-being and safety of program patients).	
… and we measure and evaluate the quality of the program in every step of the process. So the concept is that cancer screening is a process. First of all, its population based and organized…. Number 2, *it's not a single test, it's a process*. It's a series of steps and as we run and operate the program we measure and report on the quality and performance of every step in the path.	Pr4, P1
And particularly you see, unlike other jurisdictions we have standards that are, you know, they're cast in stone, they're written in stone so you know, you can't, you can't really say, "oh well, you know we, you'd normally do four colonoscopies in a session, can you just squeeze in another couple? That will process them more quickly". Well, that's, that's not available. So what are we doing?	Pr3, P7
…this is what we've done in conversation with the [cancer screening organisation] "Okay this is what we see, this is what the field is giving us, this is what the colonoscopy centers tell us what is possible…. What is worse and what is important?" We more or less worked together to *figure out an ethical, an ethical and doable way*, yeah.	Pr7, P11
It was a- well, it was [organisation's] decision to reduce service provision in the [region]. And so, without having certainty about colonoscopy services being available for non-urgent indications, the recommendation was to not offer FIT screening as there is no follow up available.	Pr5, P5
… the risk in pausing is obviously that you have a delay in diagnosis. And we know that bowel cancer screening is effective in reducing deaths from bowel cancer. So if you have a delay in diagnosis and a delay in the finding and responding to a positive [FIT], then it will have an impact on increased deaths from bowel cancer in the long term. And that's what we found from our modelling.	Pr1, P15
It became very clear early on in the pandemic that colonoscopy had just stopped. People weren't getting colonoscopies, except under extreme emergency situations. And it became, you know, pretty clear that we were building up a backlog of people who weren't going to get their colonoscopy for the foreseeable future…. I think it's ethically unsound to say to	Pr2, P12

somebody, "You've got a positive test but it's not very positive, so you'll just have to wait" because you're going to engender a lot of anxiety by doing that.	
…The big concern… their main concern is that they have not seen as many new cases as they are used to. … it's the knowledge of those undiagnosed cancers out there, [Yeah] that we know are out there, that we're not getting to. … we know these diseases are there and we know they're building up and they're progressing, you know.	Pr4, P3
…in some smaller communities there weren't any cases of COVID. And so those smaller centres wanted to continue with screening…. I think that was a bit difficult for places where they basically had no COVID. They knew there were these patients waiting to have colonoscopies done and they weren't working. They had all these staff, all of these nurses at the endoscopy clinic, these physicians that didn't have anyone to scope. And they felt like, you know, these resources are so precious to us because, you know, they're limited, that they were being wasted now.	Pr5, P6
… In many units they [confirmatory colonoscopies] were not provided during the period of service reduction. But again, that's up to each hospital what they wanted to provide for services based on the directive from the Ministry. [Okay] So some areas were providing follow-up FIT colonoscopies and some were not.	Pr5, P5
…a part of [country] called the [specific location] is experiencing issues, because … we've locked down, any restrictions on travel, it meant they didn't have the workforce supply for a while there to get through their colonoscopies. Whereas in other States, they've actually fast-tracked all their colonoscopies.	Pr1, P8
… I think the ethical question was more, "okay, can we guarantee if someone has an, an inconclusive result that there's still a spot at the colonoscopy centre, so that we can still help that individual and that we do not have this individual unnecessarily worrying about the potential colon cancer"… how much do you let individuals unnecessarily worry? ... how can WE guarantee that if somebody steps into a colonoscopy centre, that there is no CORONA virus, that the colonoscopy centre can guarantee 1-1/2 meters distance, et cetera.	Pr7, P11

THE TENSIONS OF THE NIMBLE APPROACH	
I don't think it [program management] was nimble at all. [Laughter] …it's very clunky because it's actually run from a huge bureaucracy in [capital]. It's not run anywhere local, there's no nimble about it.)	Pr1, P19
The challenge is that we have a program that is designed in a way that we're not really in control of the program... You know, we're really dependent on the activities at the primary care level for what's going on. And so, that's fraught with issues, number 1 being communication…. So, you know, as opposed to being completely autonomous, we're just not autonomous, we're really dependent on primary care and that's a challenge because we can't fine tune our screening activities.	Pr4, P3
…there's always tension between the group that actually runs it [the program] and the people that says you know, "This is what we want". This is the group that monitors the quality of it and such like. So there is tension between [them].	Pr3, P7
I don't know that I would say there are challenges, I think it's just figuring out- or I guess what I would say is, planning to resume screening is more challenging than stopping screening. And part of the reason for that is a lot of our infrastructure is [location] versus COVID is not hitting the province equally. So you know we can't necessarily target certain things to certain regions just because they might be doing better than others. So some of our considerations- or we might be able to do some changes like that, but there would be a lot of background work that would have to be done in order to make our system function more regionally.	Pr4, P4
It seemed like a long time; it could have been three weeks I'm not sure, to FINALLY get that document approved, and to FINALLY be able to circulate it. And in the end, it was never really broadly circulated, it sounds like, to those you know, to all levels of people involved in cancer care and screening. So it's very unfortunate. And it was, I think by now it got to the appropriate recipients, and it's had its effect but it could have had even more impact if we, if a communication strategy had been ironed out.	Pr4, P3
I mean, the overwhelming one [challenge] is the inability for the health boards to provide colonoscopy. That's, that's it really. The, the actual central laboratory runs really well, we don't have any problems with it. The, the turnover is	Pr2, P12

very fast and the quality control checks have all been very good. So, it's not, it's not an issue with the actual screening centre, it's all-around colonoscopy capacity. And one of the challenges … is the variability between the different health boards in terms of colonoscopy waiting times. And that is something that, I suspect will be exaggerated in the coming months.	
I think there will be. I think there, there has to be because, you know, I can tell you that with- over this period of time and probably almost as a direct result, you know, this is anecdote but we've had four missed- or four delayed diagnosis, that, you know, so they, they were on the waitlist and we got them actually later. And they were- had a diagnosis of colorectal cancer.	Pr1, P19
… we don't necessarily have that modelling expertise within the organization so, we commissioned the [---] to do that modelling work for us. So, I guess the challenge is our org-, our capacity within the department to do that modelling work but we were able to get it done…	Pr1, P8
The one thing we have noticed with Telehealth though is that the majority of Telehealth consultations in [country] are by telephone, not by video. And there are significant limitations to that, to do with patient health, to do with diagnosis of symptoms and signs that are difficult to see. To do with establishing empathy and trust between doctors and patients, particularly in situations where the patient didn't have a relationship with that doctor beforehand.	Pr1, P15
Our IT system is not so easy to manage in terms of how it creates people that are coming due for screening. And so it's a lot of work for our analytics team.… there are funny things about our IT system that are challenging from an operations standpoint….	Pr5, P5