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Beliefs Associated with Pharmacy-Based Naloxone: a Qualitative Study of Pharmacy-Based Naloxone Purchasers and People at Risk for Opioid Overdose

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Abstract Drug overdose is the leading cause of unintentional death in the USA and the majority of deaths involve an opioid. Pharmacies are playing an increasingly important role in getting naloxone—the antidote to an opioid overdose—into the community. The aim of the current study was to understand, from the perspective of those who had obtained naloxone at the pharmacy, whose drug using status and pain patient status was not known until the interviews were conducted, as well as those who had not obtained naloxone at the pharmacy but were at risk for overdose, factors that impact the likelihood of obtaining pharmacy-based naloxone (PBN). Fifty-two participants from two New England states were interviewed between August 2016 and April 2017. We used a phenomenological approach to investigate participants' beliefs about pharmacy-based naloxone. The social contextual model was chosen to structure the collection and analysis of the qualitative data as it takes into account individual, interpersonal, organizational (pharmacy), community, and societal influences on a specific health behavior. Of the 52 people interviewed, 24 participants had obtained naloxone from the pharmacy in the past year, of which 4% ($n = 1$) self-disclosed during the interview current illicit drug use and 29% ($n = 7$) mentioned using prescribed opioid pain medication. Of the 28 people who had not obtained naloxone from the pharmacy, 46% ($n = 13$) had obtained an over the counter syringe from a pharmacy in the past month and had used an opioid in the past month, and 54% ($n = 15$) had used a prescribed opioid pain medication in the past month but did not report a syringe purchase. Several main themes emerged from the interview data. Individual-level themes were as follows: helplessness and fear, naloxone as empowerment to help, and past experiences at the pharmacy. Interpersonal-level themes were as follows: concern for family and friends, and sources of harm reduction information. Themes associated with pharmacy-level

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influence were as follows: perceived stigma from pharmacists, confusion at the pharmacy counter, and receptivity to pharmacists' offer of naloxone; community-level themes were as follows: community caretaking and need for education and training. Finally, themes at the societal-level of influence were as follows: generational crisis, and frustration at lack of response to opioid crisis. Overall our findings reveal factors at multiple levels which may play a role in likelihood of obtaining naloxone at the pharmacy. These factors can be used to inform interventions seeking to increase provision of pharmacy-based naloxone.

Keywords Opioid · Overdose · Naloxone · Pharmacy · Qualitative · Interviews · USA

Introduction

Drug overdose is the leading cause of unintentional death in the USA. From 1999 to 2016, more than 630,000 people died from a drug overdose, and in 2016 the majority of these deaths (66%) involved an opioid, including prescription opioids and illegal opioids such as heroin and illicitly manufactured fentanyl [1].

Naloxone can reverse an opioid overdose and save lives. A safe drug, naloxone restores normal respiration to a person whose breathing has slowed or stopped as a result of overdosing with an opioid [2]. When naloxone and overdose education are available to community members, overdose deaths decrease in those communities [3]. Therefore, increasing the availability of naloxone is critical to reducing opioid-related overdose deaths. Given these findings, leading health authorities such as the American Medical Association [4] and the Surgeon General [5] have called for access to naloxone to be expanded.

States have responded by adopting pharmacy-based prescription models to make naloxone more widely available. Currently, all 50 states allow prescribers to prescribe naloxone to patients at risk for overdose, and 45 states allow prescribers to prescribe to individuals not at personal risk but requiring naloxone to administer to someone else at risk for overdose. Finally, 49 states permit non-patient specific models of distribution, for example, standing orders, which are written by prescribers and authorize pharmacies to dispense naloxone to patients without an individual prescription from a provider. The evaluation of this latter and more expansive model shows promise in terms of expanding access to naloxone [6].

Despite the fact that access to naloxone through pharmacies is expanding, barriers to access exist. Many pharmacies do not stock or dispense naloxone [7–9]. In addition, people at risk for opioid overdose report barriers to obtaining it at the pharmacy. Although few qualitative studies exist, a survey of 100 treatment seekers at methadone/buprenorphine Medication Assisted Therapy (MAT) clinics in North Carolina found that patients reported not knowing where to get naloxone. Of those who had received naloxone, reasons for not carrying it included no longer being around drugs, forgetting it, and the kit being too large [10]. In a series of eight focus groups conducted in Massachusetts and Rhode Island, that included people who use drugs (PWUD) and people who had been prescribed opioid medication, barriers to obtaining naloxone included perceived pharmacist and societal stigma [11].

To take full advantage of the efforts to expand pharmacy-based naloxone (PBN), it is important to understand more about barriers and facilitators to obtaining naloxone at the pharmacy. We interviewed people who had obtained naloxone at the pharmacy. We also interviewed people who were at risk for opioid overdose but had not obtained naloxone from the pharmacy, although some had obtained naloxone from community-based organizations. The main research question driving collection and coding of the interview data was: What are factors that impact the likelihood of getting naloxone from the pharmacy?

Methods

Study Design

We designed a phenomenological qualitative study [12] to elicit in participants' own words their experience and understanding of PBN and to explore factors that influence likelihood of obtaining PBN. We used semi-structured interviews to explore individuals' lived experience.

Participants

The sample was drawn from the greater Providence, Rhode Island area; Boston, Massachusetts; and towns in other parts of Massachusetts. Participants were

purposely recruited so that we could learn from people who had either experienced purchasing naloxone at the pharmacy or may benefit from having PBN because they either use opioid drugs illicitly or are prescribed opioid pain medication. Specifically, we used a criterion-based purposive sampling technique [13] such that we strategically recruited individuals who were at least 18 and English speaking and had either (1) obtained naloxone from the pharmacy in the past year; or (2) not obtained naloxone in the past year but reported a risk for opioid overdose because they had (a) obtained an over the counter syringe from a pharmacy in the past month and had used an opioid in the past month; or (b) had used a prescribed opioid pain medication in the past month, but did not report a syringe purchase.

Recruitment

We used two recruitment strategies. First, flyers were either emailed to, or physically posted in, hospital-based pain clinics, primary care practices, community pharmacies, needle exchanges, and support groups for people with a family member coping with addiction. The text on the flyers was as follows: "If you live in Massachusetts or Rhode Island and: 1. You have purchased syringes from a pharmacy in the past 30 days AND 2. You have obtained naloxone (Narcan®) from a PHARMACY, or have tried to or thought about doing so WE WANT TO HEAR FROM YOU!! Please consider participating in our study to share your experience! You will be compensated for your time and effort" and "If you live in Massachusetts or Rhode Island and: 1. You have obtained naloxone (Narcan®) from a PHARMACY 1. OR 2. You have obtained a prescription pain medication from a PHARMACY in the last 30 days WE WANT TO HEAR FROM YOU!! Please consider participating in our study to share your experience! You will be compensated for your time and effort." Potential participants contacted the research assistant and were screened for eligibility. Second, for people who currently used illicit opioid drugs, a research staff member scheduled times to recruit, enroll, and conduct interviews at community-based organizations such as needle exchanges. Pharmacy naloxone and prescription opioid purchases were verified by research staff by viewing the medications, either physically prior to commencing the interview, or by reviewing an image sent to the research staff by the interested participant by email or text.

Development of the Interview Guide

Given our interest in hearing participants discuss their own experience with, and thoughts about, PBN, we used a phenomenological approach to the way we designed interview questions to understand the meaning of the study topics to participants [12]. We developed a core list of open-ended questions and probes informed by both the published literature on barriers and facilitators to purchasing PBN [10, 11] as well as the social contextual model [14], which served as the guiding theoretical framework for the study. The social contextual model (SCM) is based on social and behavioral research as well as social epidemiology. The model includes psychosocial factors at the individual found to be predictive of behavior change, including self-efficacy, attitudes and beliefs about risk, intentions to perform a behavior, and the skills needed to do it; as well as the social level, including social support, social norms, and other factors in the social context. The model was used to structure the collection and analysis of the qualitative data into individual, interpersonal, organizational (pharmacy, in this case), community, and societal influences on likelihood of obtaining naloxone at the pharmacy, with the goal of understanding the range of factors that affect delivery of PBN and to identify potential targets for intervention.

The final interview guides consisted of three sections. For those who had received naloxone from the pharmacy in the past year, the first section included questions about naloxone awareness (e.g., "Why did you get naloxone at the pharmacy?"). The second section included questions about experience obtaining naloxone in the pharmacy, including price, any training received, and interactions with the pharmacist (e.g. "Can you tell me about your experience when you purchased the naloxone?"). The third section included questions about concerns and barriers (e.g., "What do you think would be the best way for a pharmacist to ask you if you wanted naloxone when you pick up your syringes/prescription pain medications?"). For people who had not received naloxone from the pharmacy in the past year, the interview guide had the same sections but rather than asking about purchasing naloxone in the pharmacy, questions focused on other types of interactions with pharmacists and other experiences in the pharmacy.

Data Collection

Interviews were conducted between August 2016 and April 2017 by five research team members (three BA/BS, one MPH, one MDiv) trained in qualitative research methods. One-on-one qualitative interview appointments took place in public but semi-private settings including libraries, coffee shops, hospital cafeterias, and community-based organizations in Rhode Island and Massachusetts. All participants provided informed consent for the approximately 20-min long interview. We terminated interviews after 52 had been conducted, having reached thematic saturation where no new information was obtained [15]. Interviews were audio-recorded, professionally transcribed, and de-identified for analysis. Participants received a $40 gift card for their participation. The study was approved by institutional review boards of Boston Medical Center and Rhode Island Hospital.

Data Analysis

The goal of the qualitative analysis was to explore factors that influence likelihood of obtaining PBN. As such, the analysis was deductive, informed by the social contextual model [14], current literature on PBN [16, 17], and preliminary readings of the transcripts. Author ED created an initial draft of a code book comprised of theory-based codes [14] with five major sections: individual, social, organization/pharmacy, community, and society-level influencing factors. Further codes were created within each of these sections that reflected details of the model, for example, self-efficacy (for purchasing naloxone) within the individual-level section, and factors specific to PBN (e.g., a code for privacy at the pharmacy within the pharmacy-level section). Research team members reviewed the codebook and offered feedback which was incorporated into the draft. Each code was then thoroughly discussed until the entire team agreed upon the scope of the code. Five members of the research team tested the usefulness of the codes by applying them independently to two randomly selected transcripts. The codebook was modified as needed, before applying the codes to two more randomly selected transcripts. A random sample of 28 transcripts were then each double-coded independently by two members of the research team using the finalized codebook. The two team members then met for approximately 2 h per transcript to compare codes. Discrepancies were resolved with discussion. The remaining 24 transcripts were each coded by a single research team member. After all the transcripts had been coded, they were entered into NVivo qualitative data management software, version 12 [18]. Each of the five team members then independently reviewed the excerpts associated with each code, writing notes to track emerging themes. The notes were used to inform weekly team discussions around emerging themes associated with each code, then with each level identified in the social contextual model [14] (i.e., individual, social, pharmacy, community, and society). Discussions ended when themes had been agreed-upon for each code, and later for each level of the model.

Results

Participant Characteristics

Fifty-two participants were interviewed. Twenty-four participants had obtained naloxone from the pharmacy in the past year. During the interview, 4% ($n = 1$) mentioned current illicit drug use, 29% ($n = 7$) mentioned using prescribed opioid pain medication, and 66% ($n = 16$) did not disclose using either but expressed a desire to be prepared to help family or community members. Of the 28 people who had not obtained naloxone from the pharmacy, 46% ($n = 13$) had obtained an over the counter syringe from a pharmacy in the past month and had used an opioid in the past month, and 54% ($n = 15$) had used a prescribed opioid pain medication in the past month but did not report a syringe purchase. Given that no state differences emerged, the data from both states are presented together. Please see Table 1 for participant characteristics.

Main Themes

Several main themes emerged from the interview data associated with individual, social, pharmacy, community and societal-levels of influence on obtaining PBN. Below, participants are identified by a risk factor (uses illicit opioids or is prescribed opioid medication) and by whether they have obtained PBN.

Individual-Level Influences Associated with Pharmacy-Based Naloxone

Many people who use drugs (PWUD) expressed fear and helplessness associated with use of illicit opioids.

Table 1 Participant characteristics.

	Non-PBN purchaser, $n = 28$		PBN purchaser, $n = 24$			
	People using prescribed opioid medications $n = 15$	People who use illicit opioids $n = 13$	People using prescribed opioid medications $n = 7$	People who use illicit opioids $n = 1$	Other $n = 16$	Total $n = 52$
State, *n* (%)						
RI	7 (47)	6 (46)	2 (29)	1 (100)	8 (50)	24 (46)
MA	8 (53)	7 (54)	5 (71)	0	8 (50)	28 (54)
Gender, *n* (%)						
Male	5 (33)	7 (54)	3 (43)	0	7 (44)	22 (42)
Female	10 (67)	6 (46)	4 (57)	1 (100)	9 (56)	30 (58)
Age in years, mean (sd)	42 (12)	42 (13)	42 (12)	n/a	41 (12)	41 (12)
Race, *n* (%)						
White/Caucasian	10 (67)	8 (62)	3 (43)	1 (100)	15 (94)	37 (71)
Black/African American	3 (20)	3 (23)	2 (29)	0	0	8 (15)
Asian	0	0	0	0	0	0
Other	2 (13)	2 (15)	2 (29)	0	1 (6)	7 (13%)
Ethnicity, *n* (%)						
Not Hispanic	15 (100)	10 (77)	7 (100)	1 (100)	15 (94)	48 (92)
Hispanic	0	3 (23)	0	0	1 (6)	4 (8)

However, some saw naloxone as a way to feel empowered. In addition, both PWUD and people prescribed opioid medication expressed that their expectations for accessing PBN were influenced by past experiences at the pharmacy.

Theme 1: Helplessness and Fear Many PWUD—most of whom had not obtained naloxone at the pharmacy—expressed helplessness, often associated with the uncertainty of not knowing what was in the illicit drugs they were taking. While some were frightened by the fact that fentanyl was involved in many of the fatal overdoses in their community, others described fear of newer and more potent drugs in the illicit drug supply, as one woman described:

> "*And now I heard that there's another drug out that's even worse than fentanyl. I do not remember the name. I don't, but you're pretty much a goner. You use it and you're gone.*"—*011 (female who uses illicit opioids and has not obtained PBN)*

Despite the ever-present threat of a lethal supply, some PWUD, particularly those who had not obtained naloxone, described the fear of the quick-onset of withdrawal symptoms that can accompany naloxone administration, as one woman described:

> "*They don't want to get sick. So now you've got someone that's legit about to OD and I'm talking about probably ten, fifteen times this has happened. The person starts crying, not because they're about to die*"—*025 (female who uses illicit opioids and has not obtained PBN)*

Strikingly, people prescribed opioid pain medication did not discuss fear of overdose at all. One man described that he had taken his doctor's advice to have naloxone but did not perceive himself to be at risk for overdose:

> "*Well, I've been on pain meds for long term, chronic, and because of amount I'm on, the doctor said I'd probably never have to use this but to keep a safe base and stuff. It was safe to keep it in the*

house."—012 (male prescribed opioid pain medication who has obtained PBN)

Theme 2: Naloxone as Empowerment to Help For some PWUD, obtaining naloxone at the pharmacy was described as a way to take back control of a frightening situation. This sense of empowerment was also expressed by parents of PWUD, as well as community members who did not take opioids but were highly motivated to carry naloxone to be prepared to help a community member in need. The sense of empowerment was described by one woman:

"*And I got to be a part of the solution or part of the problem. I can't stop anybody from doing anything. The only thing I can do is give them hope. I can't give them courage, I can't give them strength. I can show them hope, and I think by carrying that it helps them believe that they're worth living when they're tearing their own life up."—013 (female who uses illicit opioids and has obtained PBN)*

In contrast, people prescribed prescription opioids did not describe naloxone as empowering. Just as they had been unlikely to describe themselves as at risk for overdose, they were also unlikely to describe naloxone as a drug they needed to carry with them.

"*When they clip that paper to all your medicines that says opiate safety. Automatically, honestly, I was ripping it off like, oh, my God, again, again, again."—010 (female prescribed opioid pain medication and has not obtained PBN).*

Theme 3: Past Experiences at the Pharmacy A final individual-level theme emerged to suggest that past experiences at the pharmacy play an important role in expectations brought to buying naloxone at the pharmacy. This was especially true for PWUD, many of whom described fearing stigma by pharmacy staff, for example when attempting to buy syringes, which impacted their confidence for buying naloxone at the pharmacy.

"*I just wouldn't feel comfortable talking about syringes with them [pharmacists] because then they're going to look at me differently every time I go in there, like I'm a drug user and everything. I'm trying not to be a drug user, but I don't want you to classify me as one."—027 (male who uses illicit opioid drugs and has not obtained PBN)*

While past negative experiences were less likely to be expressed by people prescribed opioid pain medication, some expressed that a pharmacist had scrutinized their opioid prescription, leaving them feeling uncomfortable. One man described filling a prescription for an opioid at the pharmacy:

"*It's the looks. It's the looks and the mannerism and you'll be saying to yourself, 'Oh my God, I wish I hadn't even gotten this prescription because there they go with the assumptions.' You know. It's, 'Well, when did you get this prescription? Well, who wrote the prescription? Why did they write the prescription?' And I really feel like that's none of their business."—007 (male prescribed opioid medication who has not obtained PBN)*

Interpersonal-Level Influences Associated with Obtaining Pharmacy-Based Naloxone

Family and friends were described by as important motivators to obtain naloxone at the pharmacy, and important sources of information about naloxone.

Theme 1: Concern for Family and Friends For almost every PWUD or their loved ones, their motivation to have naloxone was to protect family and friends, rather than themselves. One woman described her reasons for having naloxone:

"*It's just like having a fire extinguisher in your house. It's just something you have in case you need it. Like I said, my son does have opioid use disorder issues. He's currently in recovery but it's a shaky recovery as most of them are..."—018 (female caregiver of PWUD who has obtained PBN*)

Another man who used illicit opioid drugs described this position:

"*My girlfriend and I, you know, I always tell her I'm not going to let you—you know what I'm saying—die. I'm not going to let you die. I'm going to try to save you by any cost, you know."—023 (male who uses illicit opioids and has not obtained PBN)*

Although the motivation to help a family member or friend was a sentiment typically expressed by PWUD who had obtained naloxone at the pharmacy, some PWUD who had gotten naloxone elsewhere in the community also expressed their desire to be prepared to respond. In strong contrast, people prescribed opioid pain medication were unlikely to describe any concerns about others in their familial or social network accidentally overdosing on opioid medication as a motivator to get naloxone:

> "*I make sure I put my stuff up, you know. My grandkids ain't, my grandson he's five, he's pretty smart, he's not going to take no pill.*"—*028 (female prescribed opioid pain medication and has not obtained PBN).*

Theme 2: Sources of Harm Reduction Information Where and how people heard about naloxone also emerged as a theme at the interpersonal level. Friends were described as a key source of harm reduction information and resources for PWUD, their family and friends, as well as concerned members of the community. Those who had obtained naloxone at the pharmacy as well as those who had not, discussed how it was through friends that they became aware of naloxone. In contrast, for people who had been prescribed opioid medication, primary care physicians (rather than family and friends) emerged as the source of support and education about the rescue medication. Many of these patients were living with multiple chronic illnesses and struggling with daily pain. Patients who had obtained naloxone at the pharmacy described a trusting relationship and a willingness to act on a recommendation from a primary care physician to get naloxone.

> "*Who do I think should have it? I guess me. My doctor prescribed it for me, and my doctor's a good doctor. I've been with her for a long time, so she must feel that I should have it in my house.*"—*016 (female prescribed opioid pain medication and has obtained PBN)*

Pharmacy-Level Influences Associated with Obtaining Pharmacy-Based Naloxone

For PWUD, social interactions with pharmacists were frequently described as tense and mistrustful. Yet, participants across all groups described a willingness to learn about naloxone from their pharmacists.

Theme 1: Perceived Stigma from Pharmacists Many PWUD perceived pharmacists as judgmental and expressed anger at pharmacists who had treated them disrespectfully. For some, getting naloxone was not viewed as a singular event but rather a continuation of a relationship that had already been damaged. These expectations led to hesitancy to approach pharmacists.

> "*You can just tell by the person's demeanor and their attitude and everything changes towards you, like, kind of just like get me out of the way, and they know what I'm there for type of thing*"—*005 (male who uses illicit opioids and has obtained PBN)*

Many PWUD had obtained naloxone from a community-based program, such as a syringe service program or drug use counseling center. The most striking contrast in the descriptions of their experiences, as compared to experiences at the pharmacy, was little mention of perceived stigma. For example, one participant described that the prescriber at her drug use counseling center urged her to carry naloxone:

> "*Please take it. Even if you're clean and you're doing good, you don't know who you're going to pass on the street*"—*026 (female who uses illicit opioids and has obtained naloxone at the pharmacy*).

People who had been prescribed opioid pain medication also brought their past experiences to the pharmacy. Those who had not received naloxone at the pharmacy described their fear of consequences associated with getting naloxone, reflecting a tension between any perceived risk of overdose and the risk of being perceived as misusing their medication, which they believed may result in their opioid medication being reduced and their quality of life compromised:

> "*Well, I think the first thing that comes to mind is that, you know, is it going to signify to the pharmacist that they are abusing or that someone they know, someone in their household is abusing? Are they going to end up on some list or something? That would be kind of my first thought, like why*

people might be hesitant to want to get some from the pharmacist."—*015 (female prescribed opioid medication who has not obtained PBN)*

Theme 2: Confusion at the Pharmacy Counter Among those who had received naloxone at the pharmacy, some described frustration at receiving very little training from the pharmacist when they got naloxone there, as one woman described:

"*She said something to the effect of, 'Everything you need is in here.' Like I remember, like, and she had her hand, 'Everything you need is in here.' And I was like, 'Okay, is it a needle that I stick in somebody or is that how it's done?'*"—*027 (female who uses illicit opioids and has not obtained PBN)*

An apparent lack of staff training and considerable confusion around naloxone dispensing procedures were noted by several participants who had received PBN. Staff attitude toward and communication with the customer made a difference in such instances, as one woman conveyed:

"*They were very kind. ...One had to check with the other, you know, because I think one was a newer person, but—so they were, I guess the pharmacist technician and the pharmacist, they were kind of working together on it and they were just very, very kind.*"—*018 (female caregiver of PWUD who has obtained PBN)*

Theme 3: Receptive to Pharmacist Offer of Naloxone Despite the described challenges with pharmacists and PBN procedures, many participants—those who had and had not obtained naloxone at the pharmacy—reported a desire for pharmacists to broach the topic of naloxone at the pharmacy counter, and willingness to listen, as one male described:

"*Really I wouldn't want to walk into a [pharmacy name] asking for it, honestly. Now, if they offered it me, absolutely, but I wouldn't want to walk in there and say, 'Hey, could I grab some Narcan?' It's just suspicious. Not for me, but for them [the pharmacist], would be suspicious. It's a stigma.*"—*004 (male who uses illicit opioids and has not obtained PBN)*

Community-Level Influences Associated with Obtaining Pharmacy-Based Naloxone

Theme 1: Community Caretaking Just as PWUD had described a sense of responsibility to family and friends in equipping themselves with naloxone, many also described a strong commitment to overdose prevention among the broader community of PWUD. In fact, having naloxone appeared to be viewed as a form of community caretaking and resilience, as one woman described,

"*You could be in a bathroom. You could be anywhere, the train, and I just think that's awesome for doctors to be like, you know, pushing it. Because it is true, you don't know who you could run into. Even if it's someone you don't know.*"—*026 (female who uses illicit opioids and has obtained PBN)*

This dedication to the health and safety of others as motivation to carry naloxone was also evident among some participants who did not take drugs, and among some parents of PWUD, in order to be prepared to help people they know as well as strangers in their community who may overdose. In contrast, people prescribed opioid pain medication did not make mention of community membership, and thus did not express a sense of responsibility to others when obtaining naloxone. However, one woman described being encouraged by her doctor to get naloxone because others may be at risk, a suggestion she took up:

"*I picked it up because my doctor prescribed it for me, and she said that in case me or someone overdoses off of my pain medications. And like I told her, that's not going to happen, and she says well it's always good to have it*"—*016 (female prescribed opioid pain medication who has obtained naloxone).*

Theme 2: Need for Education and Training in the Community Many participants who had obtained naloxone at the pharmacy reported the need for training in the broader community around how to recognize the signs of overdose, how to respond to an opioid overdose, and the accessibility of PBN. Sharing their stories with others about obtaining PBN was not common, and there were few venues or opportunities to highlight these

experiences. Among some who had obtained naloxone at the pharmacy, there was recognition that they were likely more knowledgeable and prepared than others in their community and reported that community-based education and training were especially important to reach all potential Good Samaritan overdose responders and equip them with naloxone. One woman who was motivated to carry naloxone out of concern for her community described her ideas for how to build awareness:

> "*So, going to schools and explaining the opioid epidemic and the ability to get Narcan would be a great start. Maybe going to churches. I'm trying to think of like other community centers, you know. There are community centers throughout the area. Maybe libraries could hold something. But I think that hosting events on opioid overdose and especially if you phrase it in terms of, you know, carrying naloxone with you is good for your community. I think that maybe that would be a good way to do it.*"—*002 (female who has obtained PBN)*

Societal-Level Influences Associated with Pharmacy-Based Naloxone

Finally, many people described the opioid epidemic as a generational crisis and expressed frustration that it is not receiving the attention and resources that it deserves.

Theme 1: Generational Crisis The fear that many PWUD expressed around the changing lethality of the drug supply was also expressed by many as an urgent call to view the situation as a generational crisis, as a woman who used drugs described:

> "*Like, you know, looking at pictures and being one of few that are still alive. It's just, it really is … It's so scary that, and we all talk about it, too. It's like our generation is getting killed off, and it's sad. It's like really sad.*"—*026 (female who uses illicit opioids and has obtained PBN)*

Theme 2: Frustration at Lack of Response to the Opioid Crisis However, many participants described frustration at the lack of availability of naloxone in the community, citing cost as a barrier to access, as well as insurance and stigma.

> "*Even the prescription should be free. I think so. I do. Shouldn't think they'd have a price on a life.*"—*013 (female who uses illicit opioids who has obtained naloxone).*

And one woman described that naloxone should be available to all, far beyond the space of the community-based organization or the pharmacy:

> "*I don't think it's [PBN] advertised enough and I don't think people have any idea, and I think everybody should get one [naloxone] handed out like at the grocery store where, you know, everybody's going to go get food. So, you know, it's like, it's the kind of thing that I think should be, available. Like have them [naloxone] on the desk like tissues at this point. Because people are just dropping dead. Like parents of kids like right in front of their kids.*"—*003 (female prescribe opioid pain medication and has obtained PBN)*

Discussion

Pharmacies are playing a key role in expanding access to naloxone, a drug that can prevent overdose from an opioid; however, the likelihood of people obtaining naloxone from the pharmacy is influenced by a range of contextual factors. Our findings extend the previous literature by critically analyzing these factors, which may help to inform interventions seeking to increase provision of PBN.

Overall, our findings suggest specific factors at the individual, interpersonal, pharmacy, community, and society-level which may play a role in likelihood of obtaining naloxone at the pharmacy (Table 2). One of the most striking contrasts to emerge from the findings was the difference in beliefs between PWUD and people who are prescribed opioid pain medication. PWUD emerged as affected by the rate of fatal overdoses in their community; hesitant to approach pharmacists for naloxone based on past experiences of stigma; deeply concerned about and motivated to caretake friends and family as well as the broader community; and frustrated by the many barriers to accessing naloxone. In contrast, people who were prescribed opioid pain medication did not typically perceive themselves or their loved ones to be at risk of overdosing from their prescribed opioid medication. Instead, their main focus was maintaining consistent

Table 2 Summary of interview themes

Level of influence	Theme	Implications for expanding PBN
Individual	Helplessness and fear	For PWUD, posters and fliers associated with empowerment
	Naloxone as empowerment to help	For PWUD, posters and fliers associated with empowerment
	Past experiences at the pharmacy	Training for pharmacy staff to include how to reduce perception of judgment
Interpersonal	Concern for family and friends	For PWUD, posters and fliers associated with community resilience and caretaking actions
	Sources of harm reduction information	Harm reduction materials aimed at family and friends of PWUD For pain patients, information about co-prescribed naloxone from prescribers
Pharmacy	Perceive stigma from pharmacists	Training for pharmacists to include how to reduce perception of judgment as well as information about who has access to record of naloxone purchase
	Confusion at the pharmacy counter	Clear protocols for pharmacy team members on how to provide naloxone (i.e., packaging, counseling, billing, stocking).
	Receptive to offer of naloxone from pharmacists	Training for pharmacists on when and how to offer naloxone universally and objectively
Community	Community caretaking	For PWUD, posters and fliers associated with community resilience
	Need for education and training	Education and training around overdose prevention more widespread in the community
Society	Generational crisis	Clear and visible pharmacy policies about naloxone posted in the pharmacy
	Frustration at lack of response to opioid crisis	Increasing access to naloxone throughout the community beyond the pharmacy setting

access to opioids to manage their painful, chronic conditions; depending on prescribers to advise around taking another medication such as naloxone; and being hesitant to go outside of the patient-provider relationship to ask for naloxone at the pharmacy, lest they create suspicion that they are misusing their medication. Although less pronounced, contrasts also emerged between people who had obtained naloxone at the pharmacy and those who had not. In general, those who had obtained PBN were more likely to advocate for the need for widespread education about naloxone in the broader community. In particular, PWUD who had obtained naloxone described it as empowering, for example, one woman described carrying naloxone as a way to be "part of the solution."

Our findings have implications for designing interventions to increase the provision of PBN. Personal factors, such as perception of risk of opioid overdose and beliefs about consequences of having naloxone, as well as factors related to the organizational and social context, such as pharmacy factors, social norms, and social support, are important to consider when designing interventions to increase access to PBN [14]. In our interviews with people who have obtained PBN or who may obtain PBN, PWUD and family members of PWUD consistently considered themselves, their household, as well as their broader community at risk for overdose, with many people dealing with the loss of loved ones due to fatal opioid overdose. Going to the effort of obtaining naloxone is often a selfless act, designed to protect someone else, and for PWUD and family members of PWUD, a strong social norm expressed repeatedly throughout our interviews was a sense of responsibility to the community of PWUD. This finding suggests that interventions (e.g., poster and fliers) designed to associate naloxone with empowerment and individual and community resilience may be best suited to these groups [19]. Friends were also identified as a main source of information about naloxone, suggesting that family and friends are an important group for receiving accurate information about, and encouragement to carry, naloxone.

In contrast, participants prescribed pain medication described their primary care physician or other prescriber as a main source of knowledge and support. For these patients, obtaining PBN generated uncertainty about who would find out that they had it, and fear that they would be perceived as misusing their medication. This fear may be a barrier to obtaining naloxone. Given the unfortunate stigma associated with drug use and, by association, with naloxone, the question of who has access to these records is an important one. Sharing of electronic health records extends to the standing order

for naloxone, so, while naloxone may be obtained at a pharmacy without first seeing a prescriber, the record of medication receipt is still known to a prescriber. This suggests that prescribers are a critical group for communicating to patients the importance of naloxone.

Given that some participants perceived stigma from pharmacists, pharmacist training should include information on how to reduce perception of judgment, including the use of person-first language [20], as well as giving clear information about who can access a record of someone obtaining naloxone. Previous research shows that pharmacists and patients prefer a universal approach across patients for naloxone offers [10].

Our study has several important limitations. Specifically, as with other qualitative studies, our analyses represent the beliefs of a small subset of the population under study in one geographic region, with high rates of opioid overdoses, access to PBN, and thus cannot be generalized to a larger group. Importantly, these interviews spanned the period of early implementation for both states' PBN access laws and thus may be useful in other locations, but may not reflect the current, more advanced stage of PBN implementation in the study states.

In conclusion, this study provides insight into the beliefs of people who are at risk for overdose from an opioid, as well as those who want to be prepared to help someone at risk, suggesting themes that may be useful for informing interventions to increase provision of PBN, especially in places in the early stages of implementation of PBN laws and regulations.

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