

First responder perspectives on supervised consumption site implementation
to prevent fatal opioid overdose

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Abstract

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This project used in-depth interviews with 22 first responders and mobile integrated health professionals to address two research aims: assess perceptions regarding the implementation of supervised consumption sites for people who use drugs, and to solicit program design and implementation-related concerns and suggestions. Using a thematic analytic approach, this study identified three main themes from interviews: the importance of a perception of safety in responding to emergency calls, SCS as an alternative to the emergency department, and ensuring the appropriate use of 911. Findings suggest that support for the SCS model may be conditional on perception among first responders and mobile integrated health staff that the program is adequately performing in these areas. These themes are also relevant to SCS implementation because they impact emergency service response times, as well as perceptions of and interactions with SCS program staff and participants. Participants also provided suggestions on potential areas of collaboration between their agencies and an SCS.

1. Introduction

Fatal overdose from the use of opioids is a significant public health issue in the United States. Climbing rates of fatal overdose have been in large part driven by the use of potent synthetic opioids such as illicitly manufactured fentanyl - the 2019 synthetic opioid-involved death rate was more than 11 times the rate in 2013 (Mattson et al., 2021). In King County, Washington, opioid-involved overdose deaths increased 47% from 2020 to 2021 (King County Medical Examiner's Office [KCME], 2022). Among those, fentanyl was implicated in 170 overdose deaths in 2020, while in 2021, 395 people died of a fentanyl-involved overdose (KCME, 2022). In King County, overdose mortality disproportionately affects people between the ages of 30 and 59, people presumed to be homeless, as well as American Indian/Alaska Native and non-Hispanic African American people (Public Health – Seattle & King County, 2019). The COVID-19 pandemic has accelerated this crisis, with rates of fatal overdose rising dramatically throughout the country (Currie, Schnell, Schwandt, & Zhang, 2021; Mason, 2021).

A supervised consumption site (SCS) is a service intended to prevent fatal overdose and other substance-related harms by providing a safe and inviting space in which people who use drugs (PWUD) can do so under the supervision of the trained medical professional, as well as provide access to ancillary services including but not limited to, substance use treatment, wound and other medical care, case management, and counseling (European Monitoring Centre for Drugs and Drug Addiction, 2016). Of the approximately 120 SCSs operating globally, not a single fatal overdose has ever been recorded (Potier, Laprévotte, Dubois-Arber, Cottencin, & Rolland, 2014; Kral, Lambdin, Wenger, & Davidson, 2020). Research has shown SCSs to be associated with safer injection behavior, increased referrals to treatment, as well as reduced viral transmission and syringe litter (Potier et al., 2014; Kral et al., 2020; Kennedy, Karamouzin, Kerr,

2017). These programs have not been found to be associated with increases in injection drug use, or to have deleterious effects on public safety in the neighborhoods in which they are located (Davidson, Lambdin, Browne, Wenger, & Kral, 2021; Potier et al., 2014; Kennedy et al., 2017).

In King County, there is a need for this health service – people at high risk of overdose report an intention to use an SCS if one were available in the region (Klein, Glick, & Mauro, 2020). Situated at the nexus of public health, politics, law, and varied beliefs about society’s responsibility to protect the health of PWUD, the decision to implement an SCS is not simply a matter of acquiring sufficient scientific evidence to support the program. In a nationally representative survey, most respondents reported unfavorable views towards legalization of SCSs and endorsed arguments that such programs diminish treatment uptake and encourage drug use, arguments that are not substantiated by scientific evidence (Barry, Sherman, & Stone, 2019). Experiences from the implementation of SCSs outside of the United States suggests that buy-in from stakeholder groups including law enforcement, health professionals, activists, and PWUD has been critical in shifting culture and public opinion to muster the political will to implement such a program (Fafard, 2012; Small, Palepu, & Tyndall, 2006). Additionally, a 2019 systematic review of stakeholder perceptions of SCSs identified that community groups have a variety of opinions on designing and structuring such as program (Lange & Bach-Mortensen, 2019).

First responders like firefighters, emergency medical services, and other crisis responders are on the front lines of responding to overdose in the community. Between 2012 and 2016, rates of overdose reversal by EMS via the administration of the overdose reversal drug naloxone increased 75.1% (Cash, 2018). This population has been impacted by rising rates of overdose in several ways –for instance, the perceived threat of occupational fentanyl exposure (Howard & Hornsby- Myers, 2018; Chiu et al., 2019), and emotional exhaustion and burnout stemming from

the perception that many distal causes of substance use remain unaddressed (Pike, Tillson, Webster, & Stanton, 2019). First responder perspectives on SCS implementation should be solicited based on their expertise on the medical, behavioral, and systems navigation aspects of overdose response, as well as a population which may stand to benefit from an intervention to reduce overdose in the community.

The aims of this study are to:

- Assess the perceptions of first responders regarding SCS implementation.
- Solicit SCS program design and implementation-related concerns and suggestions from first responders.

Literature on Stakeholder Perception of SCS

One of the primary perceived benefits of SCSs for stakeholders is its ability to decrease utilization of emergency services. In a large SCS evaluation study from New South Wales, Australia, emergency services stakeholders believed that SCSs contributed to a reduction in emergency department utilization for PWUD (KPMG, 2010). Some emergency services stakeholders have identified SCSs as potentially helping promote safety for younger, more vulnerable PWUD (Watson, Strike, Kolla, Penn, & Bayoumi, 2015). The systematic review by Lange & Bach-Mortensen (2019) identified additional actual or anticipated benefits of SCSs: improving physical safety for PWUD, increased safer use education, improved hygiene, access to health and social services, and a reduction in syringe litter.

Stakeholders have also identified several concerns related to SCSs. Location is a concern for a variety of stakeholders, for different reasons. PWUD express concern about the

accessibility of future SCSs, while stakeholders like local business owners express concern about the proximity of the facility and the potential for damaging effects on the surrounding neighborhood (Lange & Bach-Mortensen, 2019). Emergency services stakeholders have made specific suggestions about location, specifying that it should be located in an area with a high volume of drug use, as well as locating it near other social and health services (Bayoumi et al., 2012; Bardwell, Scheim, Mitra, & Kerr, 2017). Others have noted that PWUD were more likely to utilize the service if it was offered somewhere where many already were and recommended against a location that would require extensive travel on public transit (Bayoumi et al., 2012; Bardwell et al., 2017). Some mentioned that likely more than one site would be needed, and the use of a mobile van to house the service was also suggested by some stakeholders (Bardwell et al., 2017; Region of Waterloo Public Health and Emergency Services [RWPHEs], 2018; Kerr et al., 2012).

A scoping review of stakeholder preferences on SCS design and services identified that opinions were mixed on co-locating social and health services within SCSs (Kryszajtys et al., 2022). Some believed that this could run the risk of duplicating existing services or detracting from the primary purpose of supervised consumption (Bayoumi et al., 2012). Those in favor of co-locating SCSs with other services suggested this may function to “normalize” SCSs (Bardwell et al., 2017). Several studies mentioned hours of operation, with some stakeholders noting that substance use occurs around-the-clock and services to reduce harm should also be available at any time (Bardwell et al., 2017; RWPHEs, 2018; Kerr et al., 2012). PWUD similarly prefer SCSs to operate 24 hours a day (Kryszajtys et al., 2022).

Concerns about syringe litter, drug trafficking activities, and related crime were identified as concerns for some stakeholders (RWPHEs, 2018). Despite these concerns, a scoping review

of stakeholder preferences concluded that key informants generally did not approve of police presence and surveillance of SCS locations, and had mixed feelings about the presence of security staff on-site (Kryszajtys et al., 2022)

While there are some studies exploring community perception of SCSs in regions within the United States, it appears that no study to date has focused solely on the perceptions of first responders despite their significant role in addressing the overdose crisis (Lange & Bach-Mortensen, 2019; Kryszajtys et al., 2022; Taylor, Ober, Kilmer, Caulkins, & Iguchi, 2021). Thus, this project aims to fill this gap by focusing on the perceptions of first responders in conventional emergency services settings as well as those working under the emerging model of practice of mobile integrated health (Choi, Blumbern, Williams, 2015).

2. Methods

Conceptual Framework

Figure 1 presents a graphic illustration of the conceptual model developed for this study. The development of the conceptual model was informed by the socio-ecological model (Bronfenbrenner, 1977). A socio-ecological approach to planning health promotion programs emphasizes contextual determinants of health and a reciprocal relationship between individual behavior and structural forces (McLeroy, Bibeau, Steckler, & Glanz, 1988). Beginning at the organizational scale, first responders identify gaps in the service delivery system, and volunteer their insight on how SCSs can address these gaps. Locating SCSs in the larger service delivery landscape maximizes potential for population health impact by identifying factors related to organizational support and sustainability and understanding how SCSs may disrupt or transform existing systems (Frieden, 2010). First responders are also asked for input on program design,

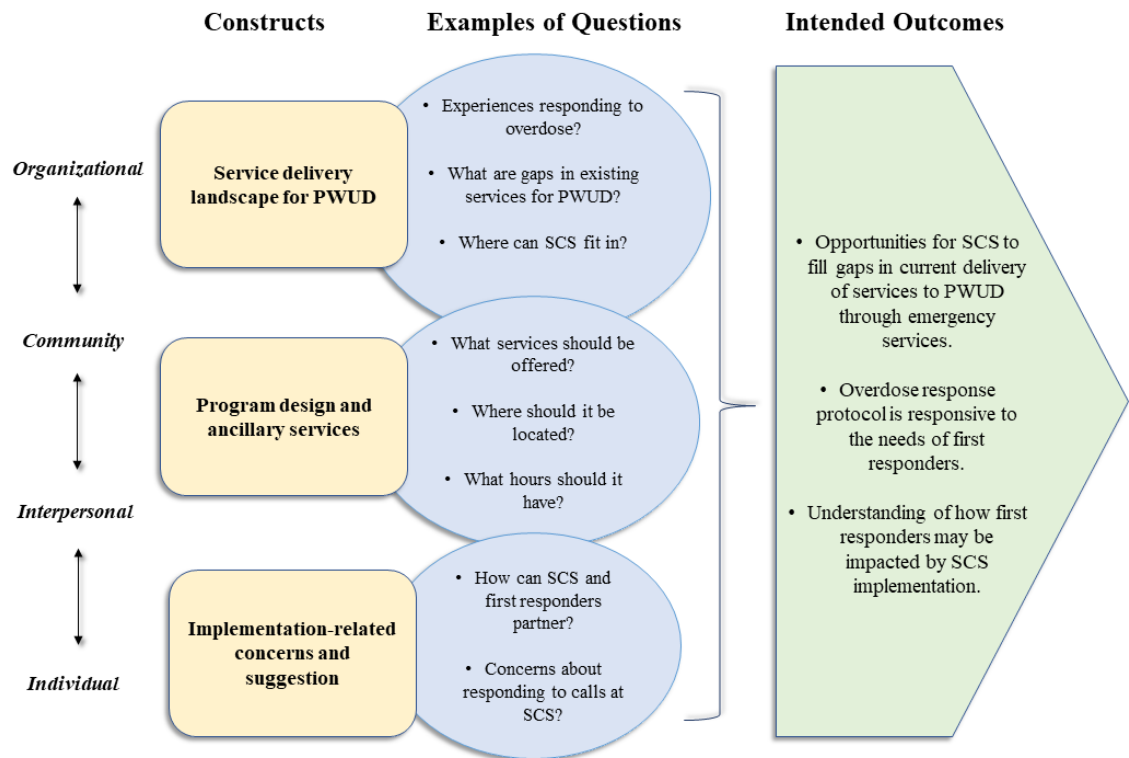
based on their understanding of service gaps for PWUD who utilize emergency services.

Emergency services will continue to engage with SCS staff and clients with some frequency after implementation, and implementation-related concerns and suggestions are solicited to understand how emergency services can safely and effectively respond to the needs of SCS staff and PWUD.

Studying first responders' perceptions, concerns, and suggestions may benefit emergency services' ability to serve PWUD, as well as enhance the quality of services delivered at an SCS. It can fill gaps in the service delivery system, particularly in the event of emergency services referral of PWUD to SCS. It will also ensure that SCS protocols are responsive to the needs of first responders in the event of an emergency response. Finally, it can increase understanding of how first responders may be impacted by SCS implementation.

Figure 1

Conceptual Model



Sampling, Setting, Data Collection

This study was reviewed by the University of Washington Institutional Review Board and deemed exempt. Research participants were recruited using a convenience sampling approach. People occupying leadership or administrative positions at first responder agencies throughout King County were identified as champions who could distribute information about the study to firefighters, paramedics, police, and fire department-based social workers who were eligible to participate. Recruitment flyers and information about the study were shared via email, and interested parties were invited to reach out to research staff for more information and

screening for eligibility. The sample ultimately consisted of 22 individuals. The sample consisted of traditional first responders as well as personnel from mobile integrated health units consisting of EMT-trained firefighters and master’s-level social workers. Participants were also asked about their gender identity, age, and a term they would use to describe their race. Characteristics of the sample are presented in Table 1.

Table 1

Participant demographics (n=22)

Gender	
Male	64% (n = 14)
Female	36% (n = 8)
Mean age (range)	43.6 (25 – 61)
Race	
White	91% (n = 20)
Hispanic	5% (n = 1)
Japanese	5% (n = 1)
Role	
Firefighter	50% (n = 11)
Paramedic	18% (n = 4)
Social Worker	18% (n = 4)
Police	9% (n = 2)
Program Manager	5% (n = 1)

Interview questions for this project were developed by the author DP and added to a larger interview guide. The interview questions asked for participants’ opinions on what services they believe should be offered at an SCS, specifics of how those services should be offered, how participants felt their day-to-day work could change with SCS implementation, input on how SCS staff should be prepared to respond to overdose and to partner with first responders, and

how first responders believe an SCS can fit into the larger landscape of services available to PWUD. The essence of the interview questions closely mirrors the constructs of the conceptual model. The exact phrasing of interview questions was refined over several initial interviews to improve clarity.

Questions for this study were couched in an interview guide for another, larger study on first responder provision of services to PWUD. Interviews were conducted during February and March 2022 via the videoconferencing platform Zoom, with at least one formally trained researcher, and in most cases a co-researcher from the community. Interviews were audio-recorded, transcribed electronically using a professional transcription service, and the recordings were destroyed. Interviews generally lasted about an hour. Interviews were conducted until it was evident that additional interviews would not meaningfully increase the depth of information available to address the research aims (Fusch & Ness, 2015).

Data Analysis

Two analysts were involved in the qualitative analysis process. DP is a graduate student in social work and public health with advanced training in qualitative research methods and experience with data collection and analysis. He has previous lived experience interacting with first responders as the result of substance-related problems, as well as several years of experience providing direct services in harm reduction and other programs serving people who use drugs. He identifies as a White, cis man. The second analyst is a member of a group of community co-researchers with lived and living experience of substance use, who had previously not had training with qualitative research methods but was trained as a part of this study. She provides direct services at a community-based harm reduction program. She has lived experience of interactions with first responders at overdose events as a person who uses drugs.

This project used a thematic analysis (Braun & Clarke, 2006). Analysis began with a data familiarization phase, in which transcripts were reviewed by both researchers to note initial impressions and check data quality. Coding followed a hybrid deductive-inductive approach (Fereday & Muir-Cochrane, 2006). An initial set of domains were identified from the literature review and conceptual model which guided an initial coding phase conducted by two researchers independently. This involved separately reviewing a subset of transcripts to organize candidate codes, notes and relevant data extracts within each domain. Both researchers then shared results and developed an initial codebook informed by these initial steps. This preliminary codebook was then applied separately to a larger subset of transcripts by both researchers. After this first round of coding, any disagreement in the application of the codes was identified, and researchers worked collaboratively to clarify code definitions, and add or discard codes as necessary. The final codebook was applied to the entire dataset by one researcher using NVivo 12 (QSR International Pty Ltd., 2018). Following this, both researchers collaboratively organized codes and accompanying data extracts into candidate themes and subthemes, using a mind-map as a visual aid. Themes were then referenced against the larger data set for coherence, and then defined and named.

3. Results

Table 2

Themes and subthemes

<i>Theme</i>	<i>Subthemes</i>
1. “How quick behavior can change” – the importance of a perception of safety	1. De-escalating unpredictable behavior 2. Safety in the built environment

2. “Another tool in the toolbox” – an alternative to the emergency department

3. “It’ll help us in the fire department, cause it’s gonna reduce our 911 calls” – ensuring the appropriate use of 911

1. Role clarification

2. Opportunities for collaboration

1. “How quick behavior can change” – the importance of a perception of safety

When discussing their experiences responding to overdoses, first responders shared that their experience of feeling physically threatened was a common occurrence. First responders discussed how their perception of the behavior of PWUD affects their response time and made suggestions for how SCS staff can prepare for an emergency response call. Erratic behavior stemming from drug use and adverse effects of overdose reversal led first responders to discuss the importance of *de-escalating unpredictable behavior*. First responders also discussed how a perception of *safety in the built environment* plays a role in emergency response, as well as their feelings towards the SCS model.

1.1 De-escalating unpredictable behavior

A common refrain among first responders was the role of substance use in their perceptions of the behaviors of PWUD as sometimes unpredictable, and possibly violent. Patients waking up and being confrontational after the administration of naloxone was noted by a number of first responders. Others discussed the use of substances like methamphetamine in causing behavior that they believed put both themselves and the patient at risk. A precaution

frequently taken was to wait for police “assist” or other additional personnel to arrive before entering a scene:

“Cause what I normally do is, there are four of us that respond, I have one person that just watches our back when we’re on the sidewalk or in a camp or whatever, just because it’s unpredictable. Because they’re not behaving normally, and you don’t know what you’re gonna get. You don’t know what the drug combination they’re on, what they’re seeing, what they’re perceiving, any of that stuff.”

Some first responders recommended that program staff trained in de-escalation skills can help improve the quality of interactions between first responders and PWUD, by helping to manage behavior from bystanders, and minimizing the risk of needing a police assist. Bystanders inserting themselves into emergency response situations was also identified as a major distraction or threat. First responders shared the expectation that program staff would have adequate training and protocols to manage a crowd when a 911 call was deemed necessary. Confidence in program staff’s ability to adhere to this standard held a considerable amount of influence on how quickly they expected to be able to respond. A firefighter referred to his experience responding to calls in nursing homes to describe how the perception of safety is linked to emergency response times:

“We’ve all been to nursing homes where I wouldn’t put my worst enemy in this place versus nursing homes that I’d put my mom here... You figure that out pretty quick and we would figure this out as well, and I think if it isn’t handled well by the facility, we’re going to be asking for the cops and waiting outside. That’s inevitable.”

In spite of the current practice of collaboration between emergency services and law enforcement in emergency calls determined to be high-risk, thoughts were mixed on having a

law enforcement presence at an SCS, including from some of the police officers in the sample. Reasons varied, from first responder concerns that police presence would make PWUD nervous and less likely to want to use the site, to fear of liability among law enforcement, to pragmatic concerns that local police departments are understaffed. Only one first responder wholly endorsed a “full-on broken windows” approach to policing, referring to a theory which maintains that police should proactively question and engage with people who appear “undesirable”, ostensibly in the interest of maintaining social order and preventing crime (Kelling & Wilson, 1982). Some participants suggested hiring on-site security who were not police.

1.2 Safety in the built environment

Some first responders also highlighted the importance of a physical layout of the SCS that would allow them to work with minimal distraction. Responding to care facilities and homes during drug-related calls was characterized by some as inherently risky, with the element of unpredictable behavior magnified by concerns related to not having full knowledge of who and what is present in a space. One firefighter considered that first responders may stand to benefit from SCS implementation in this regard, as it could be a more predictable environment:

“...if it's a clean facility, I'd rather go there than into somebody's dark basement. I don't know if I'm gonna kneel down on a needle, I don't know if they got a Rottweiler... we've all been in houses where, "I don't wanna be in here," and we're EMTs, we go right to the patient. And yet, I've got multiple bedrooms, I don't know who's in there, or what they're doing, or what they're gonna think if they barge out. So, a safe site is probably gonna make it safer for us.”

First responders emphasized the importance of having a space for them to work on patients when responding to calls at the SCS. Whether this was a separate room, or just a space

removed from the main activities and crowd of the SCS, this in tandem with SCS program staff effectively de-escalating any other clients and conducting crowd control was seen as critical to emergency response. A paramedic highlighted his preference for proactive process of familiarization with the space as an opportunity to help first responders feel more comfortable responding to an SCS:

“Hey, this is where our front desk is...where we keep patient information. These kinds of patients sit here, these kind of patients sit here”, that kinda stuff. Just an area of familiarization would be helpful.”

2. “Another tool in the toolbox” – an alternative to the emergency department

First responders were clear in their beliefs that the existing suite of supports and services available to PWUD through emergency services is inadequate. When PWUD accept transport to the hospital, they are taken to the emergency department (ED). Many first responders noted the ED is not able to provide the kinds of specialized referrals and services needed to address causes and conditions of substance use. First responders expressed a desire for an alternative to the ED, which some believed was simply a form of “second-rate primary care” for this population.

First responders expressed skepticism about the ability of the ED to adequately meet the needs of PWUD. The metaphor of a “revolving door” was evoked to disparage the utility of the ED, and suggested a hope that an SCS could help interrupt this cycle:

“In a perfect world, you could pair the safe injection with the resources that an [ED] can't provide, and so it might be a destination. We have someone who's overdosed at their home. Hey, instead of taking them to an ER, that's just gonna stabilize them and ship them, let's take them to that site instead. They've got the expertise, they've got the background to deal with that patient at

the time and get them into the resource system, instead of an ER that's back out the door. So it would give us a new option to take people and it's actually gonna do someone good, potentially.”

Suggestions on services to provide in the SCS varied greatly depending on who was asked. First responders who expressed more ambivalence generally about the SCS model often regarded SCSs as an opportunity to intervene with treatment for substance use disorder, as well as detoxification. These sorts of suggestions were often coupled with reservations about the possibility of enabling substance use:

Well, if money was no object, then 30-day detox, give them another shot at life. I think... Like I said, I think safe consumption is just another way of giving up on people.”

Other first responders suggested making housing case management, other social services, mental health counseling and peer support readily available at the SCS as a way to engage people in relevant services in an environment that may be more accessible and comfortable for them. A sentiment shared throughout several interviews was the potential of an SCS to fill in gaps in referral to care that is relevant and appropriate for people who use drugs. One firefighter made the following remark on how the specialized role of SCSs could create a more robust service delivery system:

“And even if that program is just a safe injection site, it'll become a center of knowledge for the appropriate use of medical services, of the appropriate primary care access, because the people that are working in that environment will become the city regional experts in using those kinds of drugs and the conditions and circumstances of life that the people that use those drugs face.”

Some first responders expressed a willingness and interest in directing transports to the SCS, when appropriate, rather than the ED, and were generally enthused about the prospect of having that additional resource. There were some who also suggested alternative channels for

facilitating transportation to and from and the SCS. This included an SCS having its own transportation for non-emergent calls, as well as establishing a contract with a local ambulance company for transport to the hospital that does not require advanced life support, such as that provided by a paramedic.

3. “It’ll help us in the fire department, cause it’s gonna reduce our 9-1-1 calls” - ensuring the appropriate use of 9-1-1

First responders generally believed that implementation of an SCS would reduce their call volume. This belief was conditional, however, on the appropriate utilization of 9-1-1 by SCS staff. First responders believed *role clarification* between SCS staff and first responders would decrease unnecessary calls, improve first responder opinion of SCSs, and streamline processes when an emergency response was necessary. First responders also highlighted *opportunities for collaboration* to enhance working relationships between first responders and SCS staff to ensure that both parties’ expectations and needs are being met.

3.1 Role clarification

It was clear that first responders’ perceptions of the success of an SCS, and their willingness to engage in positive, collaborative working relationships, was dependent on an SCS being able to successfully divert non-emergent medical issues that might otherwise demand emergency services resources. Several first responders drew on experiences with local permanent supportive housing buildings to emphasize the impact that lack of clarity regarding what a facility should and should not be able to handle can have on first responders:

“...there was supposed to be an on-site nurse who was supposed to address non-emergent medical issues during working hours and working hours was never really clearly defined by the

facility, so the firefighters were under the impression that there was always an on-site nurse who was supposed to address non-emergent medical conditions or low acuity medical conditions, and then became resentful every time they got dispatched to calls that resulted in non-emergent medical or low acuity medical calls.”

First responders believed that an SCS should be able to handle low-acuity, non-emergent issues, and be proactive in establishing protocols and staffing that would keep them from calling 911 for such issues. A firefighter stressed that the SCS’ ability to meet this standard would be a major influence on the quality of working relationships between SCSs and emergency services:

“If I had a safe injection site in my district, and I’m going to twice a day for BLS responses to arrange transports, that’s gonna generate some animosity, pretty doggone quick. But, if I’m going to a safe injection site that has the occasional, “Hey, this guy used and got an atypical response, and we need some help with it,” 100%.”

3.2 Opportunities for collaboration

First responders identified different ways that SCS staff and first responders should work to have a clear understanding of one another’s roles in responding to medical concerns of people who use drugs. A willingness to engage in program planning and the development of clinical and practical partnerships was evident through several interviews. One fire department-based social worker noted:

“I would want the opportunity to get to know them and work out ways that we could facilitate getting people to them. Also too, to make sure that they understand that the fire department is a partner for them in the community. And I would wanna know how they see our role, how we could best support them and help them.”

In addition to mutual familiarization with what each other's respective programs and responsibilities are, some first responders also suggested that SCS staff and first responders plan SCS services or train together. Some ideas included: having a common definition of overdose to ensure that emergency services are only contacted for atypical responses; having paramedic students work a shift at an SCS to gain exposure to working with PWUD; regular walk-throughs and planning meetings to monitor how and why first responders are responding to the SCS. Several first responders identified having some degree of shared medical oversight as important to ensure that the SCS is managing medical concerns appropriately.

In emergency situations, establishing open lines of communication between first responders and SCS staff was identified as important in streamlining emergency response. This includes having SCS staff trained to clearly identify emergent medical concerns to first responders, as well as, if possible, patient medical history and other relevant factors. First responders noted that permanent supportive housing facilities they frequently respond to generally provide them with a "face sheet" with this information, and stressed that having that type of information on hand during a response was helpful.

4. Discussion

First responder concerns safety concerns are consistent with previous research which has identified on scene-hazards as an issue when responding to overdose (Williams-Yuen et al, 2020). Ensuring safety also aligns with local first responder sentiment – in a survey which sampled half of all the paramedics in Seattle, 85% of respondents felt it was important for law enforcement to be present at the scene of an overdose in order to keep medical personnel safe (Banta-Green, Beletsky, Schoeppe, Coffin, & Kuszler, 2013). This provides interesting background for the current study – first responders generally approved of or needed a police

escort when interacting with PWUD in situations they found possibly threatening, but when considering the predictability of the SCS environment, believed that the presence of police would be unhelpful or unnecessary. In any event, the evidence on the frequency of adverse events after naloxone administration is mixed (Moe et al, 2020; Wong et al, 2019; Moustaqim-Barrette et al, 2021) As Parkin and colleagues (2020) note, in addition to avoiding the administration of unnecessarily large doses of naloxone which might precipitate adverse post-reversal behaviors, providing empathetic and calming reassurance after reversal is an imperative for overdose responders.

First responders generally expressed conditional support of the SCS model based on the relief that it could provide to emergency services. This is unsurprising, given the extent to which first responders are on the front lines of the overdose epidemic and the common experience of burnout and emotional exhaustion precipitated by frequent overdose response (Saunders et al, 2019). Consideration of how SCSs can minimize emergency service utilization may help establish and maintain emergency service buy-in. A survey of firefighters stationed in the service area of a Vancouver, British Columbia SCS found that some respondents experienced negative health effects and unfavorable beliefs about PWUD which they attributed to the frequency and demandingness of calls to that area (Pennington et al, 2020). As such, SCS program staff and policymakers should consider how emergency services can remain engaged. Based on statements from first responders in this study on the importance of reducing call volume, it may be useful to reference evidence on decreased emergency services utilization when soliciting emergency services buy-in for SCS services (Khair et al, 2022). The experience of SCS implementation in Canada has shown that buy-in from a variety of stakeholders has been a critical element in the ability of SCSs to continue to provide and scale up services (Hyshka, Bubela, & Wild, 2013).

First responders in this study envisioned an SCS filling gaps in the landscape of services available to PWUD, especially related to the inadequacy of the ED in responding to the needs of PWUD. First responder experiences of frequent ED utilization among PWUD is supported by evidence which shows frequencies of ED and hospital admissions to be substantially greater than the general population (Lewer et al, 2020). Impressions of the ED being unhelpful or inappropriate for many of the needs of PWUD is also supported by research which indicates underutilization of interventions for problematic substance use in hospital and ED settings (Samuels et al, 2016). Qualitative research on the experiences of individuals with opioid use disorder treated at the ED indicates perceptions of stigmatization and the belief that the ED may not be an appropriate location to receive services (Hawk et al, 2022). Further, drug-related risk may not be effectively managed in the ED, based on findings that the hospital risk environment contains social and structural forces that magnify risk and amplify the likelihood of discharge against medical advice and fail to prevent substance use while hospitalized (McNeil et al, 2014; Grewal et al, 2015).

Some first responders correctly identify SCS as filling a gap in service access and relevance for PWUD. PWUD are exposed to wide array of inequities in social determinants of health, and an SCS may provide a bridge to accessing other health services, and have positive impacts on the meeting social, emotional, and material needs (Kerman et al 2020). First responder suggestions for open and integrated information sharing practices between an SCS and other health and social services is aligned with research identifying coordinated care and communication between sectors as a systems improvement tool to improve care for patients frequently utilizing emergency services while experiencing a variety of other social needs (Kanzaria et al, 2019).

Further research directions to build off of the results of this study can include implementation-focused research to assess barriers and facilitators to putting into action first responder suggestions on SCS. Additionally, research should be conducted on whether implementation of first responder suggestions leads to improved emergency services encounters for PWUD as well as a reduction in burden for emergency services and the ED.

Limitations

This study has some limitations. The small sample size means that the results may not be generalizable to the larger first responder population, and the geographical specificity of the sample means those results may also not be transferable to populations in other locations. Also, may have benefitted from the participation of additional coders without involvement in the data collection process to further enhance the rigor of the study, although this risk of bias may be mitigated partly by ongoing review and support of other investigators.

5. Conclusion

This study builds on the literature of stakeholder perceptions of SCSs to provide a deeper understanding of the interface between SCS implementation and first responder systems. The themes identified are similar many of those from prior research on stakeholder perceptions of SCSs, but this study's focus provides new insights to understand how SCSs and first responders can partner to improve the delivery of care to PWUD. First responders in this study generally saw a value to SCS implementation for the health of PWUD and recognized that implementation of an SCS could also impact their own work by potentially reducing the volume and uncertainty of many drug-related calls. As such, first responders should be considered as potential

participants, and perhaps even allies, in the development and implementation of SCSs in local contexts.

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