HHS Public Access

Author manuscript

SSM Qual Res Health. Author manuscript; available in PMC 2024 July 02.

Published in final edited form as:

SSM Qual Res Health. 2024 June ; 5: . doi:10.1016/j.ssmqr.2024.100421.

Financial barriers, facilitators, and strategies among syringe services programs in the U.S., and their impact on implementation and health outcomes

Christopher F. Akiba[a,*], **Jessica Smith**[a], **Lynn D. Wenger**[a], **Terry Morris**[a], **Sheila V. Patel**[a], **Ricky N. Bluthenthal**[b], **Hansel E. Tookes**[c], **Paul LaKosky**[d], **Alex H. Kral**[a], **Barrot H. Lambdin**[a]

[a]RTI International, Research Triangle Park, NC, United States

[b]Keck School of Medicine, University of Southern California, Los Angeles, CA, United States

[c]Miller School of Medicine, University of Miami, Coral Gables, FL, United States

[d]Dave Purchase Project, North American Syringe Exchange Network, Tacoma, WA, United States

Abstract

Syringe Services Programs (SSPs) provide evidence-based services like drug use equipment to prevent infectious disease, overdose prevention education, and naloxone distribution to people who use drugs (PWUD). However, inadequate funding threatens provision of these interventions. This study aimed to document how the current funding landscape impacted determinants of SSP implementation, particularly describing financial and staffing barriers, facilitators, and proposed strategies, using qualitative methods informed by three implementation research frameworks. We interviewed 20 leaders of SSPs in the United States using a semi-structured interview guide. Participants described how structural stigma against PWUD led to insufficient and restrictive funding, and burdensome reporting for SSPs. This resulted in harming program implementation outcomes like reach, fidelity, and sustainability. Inadequate funding also led to insufficient staffing and subsequent staff stress, burnout, and turnover. Taken together, these barriers threatened the implementation of evidence-based interventions that SSPs provided, ultimately harming their ability to effectively address health outcomes like infectious disease transmission and opioid overdose mortality within their communities. Interviewees described how upstream policy strategies like political advocacy might address structural stigma at the federal level. Participants also highlighted state-level efforts like harm reduction–centered funding, technical assistance

*Corresponding author. akiba@rti.org (C.F. Akiba).

CRediT authorship contribution statement

Christopher F. Akiba: Conceptualization, Formal analysis, Methodology, Visualization, Writing – original draft, Writing – review & editing. **Jessica Smith:** Writing – original draft, Writing – review & editing. **Lynn D. Wenger:** Conceptualization, Project administration, Writing – original draft. **Terry Morris:** Data curation. **Sheila V. Patel:** Methodology, Writing – review & editing. **Ricky N. Bluthenthal:** Writing – review & editing. **Hansel E. Tookes:** Writing – review & editing. **Paul LaKosky:** Conceptualization, Writing – review & editing. **Alex H. Kral:** Writing – review & editing. **Barrot H. Lambdin:** Conceptualization, Funding acquisition, Investigation, Supervision, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

and capacity-building, and clearinghouse programs that may facilitate better implementation and health outcomes. A more robust understanding of the relationship between financial barriers, facilitators, and strategies on implementation and health outcomes represents a novel and vital area of research within harm reduction literature.

Keywords

Harm reduction; Syringe services programs; Implementation research

1. Introduction

Conceptualized and first implemented in the 1980s in response to viral hepatitis and the HIV/AIDS epidemic, syringe services programs (SSPs) at their core provide drug use equipment to prevent infectious disease transmission among people who use drugs (PWUD). SSPs are effective at reducing injection risk behaviors and infectious disease transmission among their participants (Lyss et al., 2020; Watters et al., 1994; Wodak & Cooney, 2006), especially when a needs-based model of syringe distribution is utilized (Bluthenthal et al., 2007; California Department of Public Health, 2020; Kral et al., 2004). SSPs continue to expand services to help PWUD mitigate risk associated with a toxic and inconsistent drug supply as well as a wide array of supplies and services including overdose education and naloxone distribution; HIV, HCV and COVID-19 testing; safer smoking and snorting supplies; safer sex supplies; drug checking; vaccinations; case management; linkage to substance use treatment and primary health care; and referrals to housing and other social services (Broz et al., 2021; Heinzerling et al., 2006; Seal et al., 2005; Wenger et al., 2021). Despite the extensive array of services that SSPs provide, social and political resistance (Childs et al., 2021; Jones, 2019), including a type of structural stigma known as “Not in My Backyard” (NIMBY), routinely pose challenges for SSPs and the services they provide (Adams & Volkow, 2020; Davidson & Howe, 2014; Paquette et al., 2018; Tempalski, Friedman, et al., 2007). Social, cultural, and political beliefs and attitudes around drug use act as determinants of the structural stigma that impacts SSPs and the communities they serve (Davidson & Howe, 2014; Tempalski, 2007; Tempalski, Flom, et al., 2007). Legal, political, and financial challenges—coupled with and influenced by this sociopolitical resistance—can result in barriers that impact SSPs’ successful implementation of evidence-based services (Anderson, 1991; Jones, 2019).

The overdose mortality crisis in the United States continues to surge—claiming more than 107,000 lives between December 2020 and December 2021 (National Center for Health Statistics, 2023). Additionally, the need to address HIV and HCV among people who inject drugs (PWID) remains (Bartholomew et al., 2020). Fortunately, changes in state and federal policies have supported an increase in the number of SSPs across the country to address overdose mortality and other drug related harms (Jones, 2019; Weinmeyer, 2016). In late 2015, during a wave of SSP reform across rural and conservative states—influenced by the HIV outbreak among PWID in Scott County, Indiana—a bipartisan vote partially lifted the federal ban on SSPs to allow the funding of operational costs (Showalter, 2018). Between 2014 and 2019, 14 additional states created laws explicitly authorizing programs,

while 12 additional states enacted at least one provision reducing legal barriers to SSP implementation. In 2019, 39 states (including the District of Columbia) had laws that authorized, regulated, or removed legal barriers to running SSPs (Fernandez-Viña et al., 2020). As of June 2022, 491 SSPs were operating across 44 states, Puerto Rico, and the District of Columbia (Facente et al., 2023).

Despite policies and empirical evidence that support the efficacy, implementation, and expansion of SSPs, entrenched structural stigma and criminalization of drug use fuel political and community opposition. These underlying sociocultural beliefs also impact the availability and accessibility of funding for SSPs. Originally prohibited in 1988, a ban on use of federal funds to purchase syringes continues to this day, apart from SAMHSA's 2022 Harm Reduction Grant Program which is "authorized under Section 2706 of the American Rescue Plan Act of 2021" and permits the purchase of syringes (SAMHSA, 2023). Regarding federal funding levels, the president's budget for the Department of Health and Human Services (HHS) in 2024 administers $10.8 billion to SAMHSA, which plans to allocate just $50 million to funding community harm reduction programs (HHS, 2023; SAMHSA, 2022). Additionally, CDC released only $7.7 million in 2022 to improve access to harm reduction services for PWUD (Centers for Disease Control and Prevention, 2022). Regulations at the state and local levels pose further challenges to program implementation and effectiveness as well (Allen et al., 2016, 2019). As a result, SSPs compete for the limited funding available at the federal, state, and local levels, as well as through foundations. Overall funding for SSPs remains far below the established minimum recommendations of CDC scientists, which in turn impacts SSPs' staffing, operating capacity, and service reach, but to a degree that is not well documented in the literature (Facente et al., 2023; Lambdin et al., 2020). Nevertheless, SSPs use their ingenuity and resilience to mitigate funding barriers and continue providing evidence-based services (Glick et al., 2022; Wenger et al., 2021).

In this study, we looked to answer the research question "how does the funding landscape impact determinants and outcomes of SSP implementation?" To answer this question, we used qualitative methods informed by several implementation research frameworks to describe financial and staffing barriers, facilitators, and proposed strategies.

2. Materials and methods

2.1. Study population

Authors LDW and TM conducted semi-structured interviews with 20 Executive Directors (EDs) of SSPs across the United States between March and May 2022. To ensure that we sampled individuals representing a diverse group of SSPs, we utilized data from the 2019 National Survey of Syringe Services Programs (NSSSP) to assess program location, urbanicity, and legal status (NIH # DA046867) (Lambdin et al., 2020). To that end, we purposively sampled programs located on the East Coast (north, south, and mid-Atlantic); in the Midwest and Southwest; on the West Coast (north and south); and in Alaska. We additionally sampled from programs that varied in their legal status and represented a mix of free-standing community-based organizations and programs located within local health departments.

An open-ended interview guide was developed based on our ongoing work with SSPs and maintained a balance between pertinent topic areas and flexibility regarding unanticipated topic areas (Strauss & Corbin, 1998; Wenger et al., 2021, 2022). We began each interview with general questions about the SSP and detailed descriptions of the services provided. We then asked questions regarding staffing challenges, experiences securing and maintaining program funding, program needs for organizational growth and sustainment, and related impacts on day-to-day service provision.

Since many of the topics related to administrative duties and responsibilities, we felt that the EDs were best suited to address most if not all areas of inquiry. Prior to the interview, we read all EDs a brief consent script, and they were remunerated $50 for participating. We conducted interviews via Zoom video conferencing (Zoom Video Communications Inc., San Jose, CA, USA) and transcribed them verbatim. The institutional review board at RTI International approved all procedures for the study (IRB Study #00021210), which was funded by the National Institute on Drug Abuse (3R01DA046867-03S1).

2.2. Reflexivity and positionality

Personal reflexivity focuses on researchers' identities and the related impact on their research (Wilkinson, 1988). Given our study's inquiry into the experience of SSP leaders amid the current funding landscape, we include this statement with the goal of describing ways in which our research team's position, prior assumptions, and experiences impacted data collection and analysis. Authors LDW and TM conducted the interviews. LDW worked as a social worker providing direct services to PWUD for 6 years, volunteered at a large urban SSP for 5 years, and has been a harm reduction researcher for more than 30 years. TM provided harm reduction services for 18 years working in leadership, management, and frontline service roles at two urban SSPs. In addition, TM has conducted harm reduction research for the last 4 years. Based on their experience working for and with SSPs, LDW and TM brought assumptions related to the many barriers SSPs faced including funding challenges that could impact service delivery, staffing, and participant engagement. During data collection, the pair drew on their personal, professional, and research experiences to facilitate nuanced probing that expanded to topics outside the interview guide. Because of their understanding of the emotional toll associated with running an SSP, interviewers afforded EDs time to vent about challenges as well as acknowledge their compassion and affirm their tireless work. This shared understanding and respect may have built trust among the EDs and helped facilitate forthcoming responses to our interview questions.

Data were analyzed by author CFA, a volunteer at a large urban SSP for 2 years and a community mental health and harm reduction researcher for 12 years. Prior assumptions stemming from those experiences included a assumption that SSPs in the present sample likely experienced underfunding, and that the lack of available resources likely challenged operations as well as staff and participant wellbeing. Assumptions were checked throughout the analytic process via team discussions with authors (JS, LDW, SVP, AK, and BL) who helped guide and refine coding and memo writing that ultimately assisted in establishing the range and nuance present in our findings.

2.3. Data analysis

To analyze the raw interview transcripts, we utilized reflexive thematic analysis (RTA). RTA offers researchers flexibility regarding inductive and deductive methods when developing codes, coding, and generating themes (Braun & Clarke, 2006; Clarke et al., 2015). This approach fit our analysis given the use of both a *priori* codes and codes developed during the analysis. We reinforced our analysis though memo writing, a technique centered on documenting reflections during the coding process to build data categories, themes, and an understanding of the connections between them (Saldaña, 2009). In a final analytic step, we utilized code weaving to integrate key codes, phrases, and themes into the narrative form presented in our results section (Saldaña, 2009).

3. Guiding conceptual models and frameworks

We grounded our analysis using three implementation research frameworks. Together these frameworks allowed us to consider determinants at different levels (provider, organizational, systems, social, and political) and their influences on the implementation of evidence-based services that SSPs provide. We first merged facets of two multilevel determinant frameworks, the Consolidated Framework for Implementation Research (CFIR) and the Theoretical Domains Framework (TDF). The CFIR comprises five domains and fifty constructs to describe and categorize barriers and facilitators of implementation effectiveness (Damschroder et al., 2022). Domains include (1) *the intervention*, in this case the evidence-based services provided by SSPs; (2) *the outer setting* focused on macro-level factors that impact SSP implementation like laws, policies, and societal norms; (3) *the inner setting* highlights facets within organizations like staffing, connectedness to other organizations, and workplace culture; (4) *the individuals* who implement the intervention including EDs, managers, frontline staff, and volunteers; and (5) *the implementation process*, centered on the activities related to implementation like staff supervision, syringe and naloxone distribution methods, or outreach locations (Damschroder et al., 2009, 2022). The TDF, through 14 domains and more than 80 constructs, similarly identifies and categorizes implementation influences (Atkins et al., 2017). It focuses more intently on behavioral aspects of individuals involved with the intervention, like how EDs' actions relate to their motivations and emotions. We chose the CFIR to clarify the structural and systems-level determinants of SSP implementation, and the TDF to better understand implementation at the provider level (inclusive of EDs and other SSP staff) (Atkins et al., 2017; Damschroder et al., 2020).

In this analysis, we most commonly applied codes for the CFIR's outer and inner setting domains. For the outer setting we found the constructs of 'local attitudes (sociocultural values and beliefs that encourage implementation)' and 'policies & laws (legislation and regulations)' most salient. For the inner setting we found the 'work infrastructure (organization of tasks and responsibilities within and between individuals and teams, and general staffing levels)' construct most applicable. Regarding provider level barriers we found the TDF's emotion domain most useful which houses the constructs of provider burnout, stress, and fear.

We also used the Conceptual Model of Implementation Research (CMIR) to situate barriers, facilitators, and proposed strategies on a pathway connecting their impact on interim implementation outcomes to endline health outcomes (Proctor et al., 2009). The CMIR assesses the ability of strategies to overcome barriers and ensure the implementation of evidence-based interventions. The success of strategies are evaluated through *implementation outcomes* (e.g., reach, fidelity, sustainability), and their subsequent impact on end-line *health outcomes* (e.g., overdose mortality, infectious disease transmission) (Proctor et al., 2009, 2011). While this study did not evaluate strategies, we utilized the CMIR to frame how barriers and facilitators impacted implementation and health outcomes in the absence of strategies. The CMIR also helped envision how proposed strategies might overcome the barriers or harness the facilitators described by interviewees. Finally, the combination of the CFIR and TDF provided structured categorization of the multi-level barriers, facilitators, and proposed strategies discussed by interviewees.

4. Results

Interviewees represented programs spread across a range of geographic locations, but skewed toward those providing services in urban areas, run by community-based organizations, and with legal status to operate (Table 1).

We used the CMIR to describe how, in the absence of strategies, the determinants of evidence-based programs impacted implementation outcomes and ultimately health outcomes. In this study, EDs highlighted how barriers at the structural, health-systems, and SSP level impacted the reach, fidelity, and sustainability of their evidence-based services. Attenuated reach, fidelity and sustainability in turn threatened health outcomes like infectious disease transmission and overdose mortality at the community level.

The structural barriers described by EDs mapped to the CFIR outer setting domain's construct of'local attitudes,' highlighting a perceived structural stigma against PWUD. While the exploration of stigma against PWUD did not represent an *a priori* focus of our study, our flexible approach to data collection led to discussions about how structural stigma shaped the funding available to SSPs. In this manuscript, we define structural stigma as "societal-level conditions, cultural norms, and policies that constrain the opportunities, resources, and well-being of the stigmatized within institutional settings" (Hatzenbuehler, 2016; Link & Phelan, 2001; Muncan et al., 2020)." ED's felt that structural stigma against PWUD shaped federal policies which (1) limited the amount of available funds for SSPs, and (2) placed contradictory restrictions on the use of those funds, which we categorized using the CFIR outer setting domain's 'policies & laws' construct. Insufficient and restrictive federal funding filtered downstream creating challenges at the staffing level like stress, burnout, and turnover which we categorized using the CFIR inner setting's 'work infrastructure' construct and the TDF's constructs of staff 'stress', 'burnout', and 'fear'.

While interviewees also discussed several facilitators (their own attempts and efforts to overcome barriers) and suggested strategies (their proposals to overcome barriers), they ultimately described feeling hamstrung in their missions to adequately address infectious disease transmission, hospitalizations, and overdose mortality within their communities.

Each thematic barrier, facilitator, and proposed strategy are described below, by level, utilizing the CFIR, TDF, and CMIR (Fig. 1). Themes are further illustrated through the interviewees' own words.

4.1. Harm reduction funding landscape at the federal and state level

When responding to questions about the impact of funding on operations, several EDs described thoughts on factors that shaped the funding landscape. Interviewees described how structural stigma against PWUD created multilevel funding barriers to harm reduction service provision. We coded these overarching beliefs and attitudes using the CFIR's outer setting domain, focused on macro-level influences. The outer setting constructs of 'local attitudes' and 'policies & laws' closely aligned with descriptions from our participants regarding the influence of structural stigma on policies that impacted funding available to programs at federal and state levels. At the highest levels of American policymaking, participants described harm reduction services as not valued or supported despite their demonstrated health efficacy. ED's overwhelmingly described the current landscape of funding available for harm reduction programs as insufficient, restrictive, and burdensome.

> "Because of the restraints with the federal funds and just the way our state is right now … our major funding for prevention is through one state grant but it doesn't pay for anything in the syringe program … And then we pieced together our budget with foundation grants … we just, we piece together [from] a lot of places … so it's just kind of like that but we've never been able to sustain it." [SSP 18]

> "I remember our [federal] naloxone funder tried to tell us that we couldn't purchase syringes for the naloxone and we're like, 'That's not paraphernalia,' and they're like, 'No, because the ban,' and I'm like, 'No, if that's the case then medical facilities cannot purchase syringes for blood draws and stuff like that.' And the naloxone needle is an intermuscular needle, it's not a vein needle, and so I had to argue them down and I was like, 'You know what? I'm going to go ahead and purchase these intermuscular needles and y'all are just going to have to take the money away then.' And so that's what we did and now it's not an issue to purchase the intramuscular needles." [SSP 9]

Interviewees like these vented frustrations regarding federal restrictions on drug use equipment like syringes and other harm reduction supplies. Others described what they saw as burdensome requirements regarding application processes, data collection, reporting, and other grant management stipulations. Because the funding was meant to support harm reduction programs, EDs saw the related restrictions and requirements as contradictory and out of touch with the needs and capacities of their programs. Like the interviewees above described, the federal ban on purchasing many harm reduction supplies led their programs and others to seek a patchwork of additional, less restrictive funding. However, most EDs shared further frustrations that, even when acquiring funds via multiple sources, budgets were still insufficient to provide high-quality harm reduction services:

> "The challenges are that we don't have enough funding to be the program that we need to be, which is to give people what they need … But what we're doing is matching [the number of syringes that participants] return … If we really want

> people to use a new syringe every time, we're not doing our job … If we want to really reduce the spread of infectious disease, then we need to be able to give our participants what they need. And we can't do that with seven different funding streams, piecing together our budget every year, you know? Sometimes I will have to cut my orders because I have constraints of what I can order and how often I can order, because of my funding." [SSP 18]

This ED, and others, described the impact of insufficient and restrictive funding on their programs' abilities to maintain fidelity to harm reduction best practices. In the example above, the interviewee highlights how insufficient and restrictive funding forced their program into a 1-for-1 syringe distribution model that they described as an inadequate response to their participants' needs and ultimately a limitation on their program's ability to reduce the spread of infectious disease in their community.

When asked to describe strategies that might address insufficient and restrictive funding, participants focused on tackling the structural stigma they viewed as a major determinant of the funding landscape, highlighting advocacy and public education.

> A whole lot of policy changes are going to come from education. We have to be able to get the right kind of education out there about harm reduction and outweigh the negative stigma and judgment and historical information that people have been given … As public health we should be making more noise and supporting harm reduction in bigger and louder ways. People listen to [public health officials] when it comes to some things like COVID, you know? If we could be louder about harm reduction services and really put the evidence and data out there about what our programs do … We just need to be able to really advocate for our people until they can advocate for themselves. [SSP 03]

By sharing their frustration with the structural stigma associated with PWUD, this interviewee and others highlighted the pervasive impact of the macro-level barrier. In the quote above, the participant felt that educating the public and lawmakers about the efficacy of harm reduction services and framing them as a public health issue might help to address structural stigma.

Beneath the stricture of limited funding at the federal level, participants described an array of additional compounding barriers as well as some mitigating facilitators that varied across states. One program, operating in a state where harm reduction services were unsanctioned, experienced unique barriers like the inability to qualify for most SSP funding due to their program's underground legal status. This interviewee described a reliance on donations from other harm reduction organizations in states with less restrictive policies for essential supplies.

> "We've got a ton of really generous donors as far as supplies. Part of the reason I do so much work to network is because I'm not well funded. We have been primarily supported by donations of supplies from organizations and other scrappy SSPs that are in states where they can get funding." [SSP 10]

Although it is important to highlight the compassion of SSPs providing mutual aid to programs under more intense legal restrictions, the description above paints a picture where PWUD in those areas depend upon the hospitality and already strained supply chains of other SSPs for access to essential supplies. Other organizations in our sample operated in counties or municipalities that allowed for harm reduction services but simultaneously outlawed possession and distribution of essential supplies like sterile syringes, fentanyl test strips, or naloxone. While SSPs in these areas continued to provide banned paraphernalia, the discordant legal environment contributed to fears regarding staff and participant well-being. Taken together, the insufficient, restrictive, and burdensome nature of federal funding spawned additional job tasks that EDs saw as essential to the well-being of their SSPs. This included seeking and applying for supplementary and less restrictive funding, networking, and managing job stress. The extra hours related to these activities ultimately contributed to burnout, the implications of which are discussed later in this section.

Two interviewees described their state's clearinghouse program as a facilitator to overcome the barrier of restrictive funding at the federal level. These state programs promote access to a range of harm reduction supplies, most notably those largely banned at the federal level.

> "Our syringe funding comes from the [state] clearinghouse, and that was actually increased this year, thank goodness. We would have run out of supplies probably months ago if that wasn't increased. That has supplied our whole program and I'm like, 'We're still missing people.' So, we will need more funding … because we're just barely making it by with what we're doing, and we're sometimes having to put caps on the amount of supplies that we can give out." [SSP 4]

Notably, even with access to supplies through their state's clearinghouse program, the interviewee above still categorized their program as insufficiently funded and described their program's limited ability to meet participants' needs.

Interviewees also mentioned how limited funding opportunities created an additional barrier regarding competition among SSPs. EDs representing smaller programs felt as if better-resourced SSPs gained an advantage because of their ability to staff or outsource technical roles like grant writers. Interviewees described a landscape where better-funded programs could readily access additional funds. EDs noted two facilitators that helped their programs cope with competition amid the backdrop of insufficient funding. First, two interviewees described a state-level harm reduction–friendly grant mechanism targeted at smaller SSPs. This mechanism involved a low-barrier application process for a grant that paired additional funding (without restrictions on supplies) with training and technical assistance.

> "So our first grant was the CHRI [California Harm Reduction Initiative] grant, and that has changed everyone's life and the ability to work the way that we're working. We just would not be where we are without the CHRI funding. The people over at CHRI and NHRC [the National Harm Reduction Coalition, who provide technical assistance] have also been really supportive with us. We learned a lot with that first grant, you know? They are so low-barrier and so supportive." [SSP 7]

Although interviewees from California-based programs were the only ones to describe this type of grant funding, another ED highlighted a second facilitator focused on establishing a collective of organizations who worked collaboratively to reduce local competition for a large federal grant.

> "It was funny because when [SAMHSA's harm reduction funding] first hit the ground, I almost felt entitled to it—we're the largest syringe program [in our state], so of course we're going to apply for it. And then as I started talking to my community partners, I realized everyone was applying for it. So, we had a big meeting with all the harm reduction workers in our state, and we decided to partner together. We were able to come up with a project that helped all [our] agencies, you know? So [we] wrote it, and it's amazing. It's a really competitive grant and I think we're going to get funded." [SSP 18]

The interviewee's description of the collective to address the barrier of local competition harkens back to the ED who described receiving donated supplies from SSPs with fewer legal restrictions—another instance where harm reduction leaders created strategies through their own ingenuity and compassion. While we highlight the mitigating impact of these altruistic acts, they hinge on the philanthropy of individuals and do not represent high level strategies that address structural funding barriers. Facilitators like clearinghouse programs, harm reduction–centered awards, and collective grant writing reduced the barriers of insufficient and restrictive funding to a degree; however, programs struggled overall to attenuate their overpowering negative impacts. The insufficient and restrictive nature of grant funding spawned additional barriers regarding staffing capacity and service provision.

4.2. The impact of insufficient staffing, burnout, and turnover on service provision

In addition to describing their programs as underfunded, nearly every interviewee similarly described their program as insufficiently staffed. Interviewees explained how burnout and turnover acted as downstream effects of insufficient staffing, altogether threatening program reach, fidelity, and sustainability. EDs described volunteer labor as a mitigating facilitator but at the same time acknowledged staff burden related to volunteer training and management. Interviewees also highlighted how staff with lived or living experience improved the quality of services even in an understaffed setting. However, interviewees also described hurdles regarding their abilities to fully support those staff, who sometimes experienced unique human resource needs. EDs again requested additional funding to bolster staff levels as well as training and technical assistance to build staff and organizational capacity. We categorized these barriers and facilitators within the CFIR's inner setting domain under the construct of 'work infrastructure' because of its focus on staffing levels and their impact on implementation. We also mapped barriers under the TDF's emotion domain, which offers provider-level constructs related to 'burnout', 'stress', and 'fear'. Taken together, both frameworks align EDs' descriptions of program and provider-level impacts of burnout and turnover formed by the outer setting's 'political' and 'local attitudes' that contributed to insufficient, restrictive, and burdensome funding mechanisms.

Nearly every interviewee described the burden of understaffing and its negative impact on carrying out their SSPs' service missions.

> "So [what we need is] definitely money for staff because that's always the hang-up. We can get the resources … which are great and wonderful. But if we can't get the people to provide these resources to the people who need them, then it's just a bunch of stuff, you know? So that's the major thing, is being able to get the people, the outreach workers, the boots-on-the-ground infrastructure." [SSP 14]

Limited staffing resulted in team members feeling the need to take on additional work to fill the gaps. Those in leadership positions assumed roles that often required technical skills for which they did not feel adequately trained, such as grant writing, grant management, accounting, or programmatic scale-up.

> "We're becoming a 501(c)(3) and I'm just like, 'Cool, I'm going to go to jail for tax fraud.' We're not defrauding anyone [laughter], but it's just scary entering that world. We started out as a really ragtag, mutual aid group and now, because of our level of output, we need to take in more money. And the more money you have, I feel like the more risk there is of doing something wrong. So, I definitely need someone to tell me how to do 501(c)(3) things … like, I was a line cook a year ago, you know?!" [SSP 2]

> "I feel like I'm juggling the funding that we just received and trying to figure out how to even—like, literally learning as I go for how to manage grants. And like with any learning curve, it's going to take a lot longer than it should because I'm literally having to look up everything. And it is going to become more stressful as the months go by for sure." [SSP 4]

Interviewees commonly expressed emotions like stress and fear regarding their ability to carry out technical tasks, especially when they felt as if the financial or legal well-being of their SSPs hung in the balance. Relatedly, EDs reported a high degree of burnout among themselves and their staff, stemming from inadequate staffing, subsequent overworking, and overall job stress.

> "There have been times where I've been like, 'It has been four days since I've left this desk,' literally like I'm sleeping here. This is not okay. It's going to fall apart. I think the crisis beneath the crisis is that we're doing something that's working but we are killing ourselves to do it. And if that happens then (A) what was the point? And (B) what's going to happen then?" [SSP 10]

Because many EDs in our sample described operating with insufficient staff, burnout and subsequent turnover represented pernicious hazards for their SSPs, especially at leadership levels given their multiple and often technical responsibilities. In several instances, interviewees expressed a fear that, should they leave their leadership positions, the near-term sustainability of their SSPs might immediately become threatened. One ED, whose SSP operated in an environment that outlawed some syringe services, described how their legally precarious status layered an additional threat to program sustainability.

> "I've always been like, 'man, it's going to suck if I die or go to prison or something like that,' [laughter] you know? And that sustainability issue is something I worry

> about a lot … It's certainly not sustainable, it still relies too heavily on one person and contingent on their freedom and health and stuff, and that part is hard … I'm not sure how to change it." [SSP 13]

The interviewee's response highlights how services available to PWUD can depend upon a single individual's ability to facilitate those services. From a programmatic perspective it also suggests the essential nature of succession planning for SSP leaders. The importance of individual leaders echoed throughout our data. Providing a unique perspective, one ED had left their role just before their interview but still agreed to speak with us, as their replacement had yet to be hired. This interviewee described their decision-making process, having to weigh the potential impact of their absence on the program's participants against their own career needs.

> "That was the hardest part about the decision to leave, was the fact that I care too much about this program … Before I turned in my notice, I'm like, 'I don't know if I can do this, I don't know if I can put in, because I love [this SSP], I love that program way too much to watch it fail … ' Because I watched what happened when we had to close down for COVID … from November of 2020 through March of 2021, and so we came back and [participants] had ghastly, ghastly wounds on their arms and their legs. One woman was injecting into her neck. Hearing them say that they were using the same syringes since November that we had given them the last time, like I, I can't do that again." [SSP 11]

Participants like these depicted the "crisis beneath the crisis." When compassionate health professionals are given a choice between overworking themselves and providing the best possible services to a stigmatized group challenged by health care access, they choose to take on additional duties, hours, and job stress in the name of the health and well-being of PWUD.

Despite these challenges, participants described two mitigating facilitators. First, interviewees highlighted the ability of volunteer labor to catalyze service provision.

> "This year we closed three remote locations … but we're operating those spaces now with volunteers." [SSP 8]

While other programs similarly described the benefits of volunteer labor, some noted a complexity regarding staff time to maintain them. One program leader highlighted how their SSP's volunteer training ultimately diminished due to a lack of their own time, another symptom of insufficient staffing.

> "It's a forty-plus-hour training for volunteers to begin with, trying to do that virtually is a nightmare. And we have just—we've maybe gotten a handful of folks who actually stuck around and took shifts, like maybe five to seven people throughout the whole pandemic. So honestly this year we stopped. I didn't even do a [volunteer] training because I can't. I'm already working like sixty to eighty hours a week. I just can't do it, and there was no return on investment … Yeah, I mean, I apologize, I am very burnt out and cynical right now, but like it is real, like it's freakin' real." [SSP 19]

The decision on whether to maintain volunteer training due to a lack of staff time tracks back to the theme of insufficient staffing. The program leader above describes having to weigh the value of their limited time (while already working well beyond full-time hours) against the value added by volunteer labor, all amid a backdrop marked by burnout and cynicism.

In addition to volunteer labor, EDs also described staff with lived or living experience as facilitators that improved service quality at multiple levels, even amid staffing shortfalls.

> "I believe that all SSPs should be led, or at least somewhat informed or directed by, people with *living experience* rather than lived experience. I mean, I'm not downing on lived experience, it's brilliant and it's needed just as much as living, but if you are going to be in a fentanyl risk environment you kind of can't have somebody who used to shoot heroin because they won't understand, you know? It's a whole different animal … things are all different as the times change." [SSP 15]

> "So, I'm from [this state], and I'm from [this community]. It's been very easy for me to make connections because I have lived experience. The places that I am going are not foreign to me, nor am I uncomfortable in any of the spaces, and usually you know somebody that knows somebody, and word of mouth is wonderful. I've been very blessed in that way where I have a lot of people that will vouch for me, you know? … So that's been really great and helpful." [SSP 16]

While interviewees highlighted staff with lived or living experience as major facilitators of program quality, some also described unique accompanying barriers. Several EDs noted how staff with lived or living experience might require distinct support compared to other staff.

> "We, as harm reductionists, want folks that have lived experience, but we don't really address the fact that people with lived experience can be triggered at work more often and stuff like that, and so how do we provide extra support? And then as well, I would love any information on equitable pay for people that are working in harm reduction, I think that can be a struggle as well. So bigger structural TA [technical assistance, focused on those issues] would actually be more helpful rather than [more general harm reduction training topics] like 'This is how you inject,' you know?" [SSP 12]

To address these layered barriers, the EDs above and others described technical assistance as a strategy to build program capacity in supporting and retaining key staff, scaling-up accounting and programmatic development, and enhancing grant writing efforts. In the absence of such support, interviewees described in detail how barriers converged to impact their programs' provision of harm reduction services and ultimately the health and well-being of their staff, participants, and communities.

4.3. The impact of program reach, fidelity, and sustainability on health outcomes

Mapping onto the CMIR's core concepts, interviewees described how in the absence of effective strategies, the multi-level barriers described in the sub-sections above negatively impacted implementation outcomes like the reach, fidelity, and sustainability of SSPs' harm reduction services, in turn threatening health outcomes like infectious diseases

transmission and overdose mortality for PWUD and their surrounding communities. Participants commonly discussed diminished program reach, "the proportion of participants who access a given service," as a result of insufficient funding.

> "Yeah, [if more funding were available] I would immediately buy another van, I'd buy another two vans [laughter] and I would have one in [rural town A] and one in [rural town B], and that would probably reach another three hundred people easily, and that's not even, like, considering when those programs get developed." [SSP 4]

Interviewees like this directly tied the impact of insufficient funding to the number of participants their program could reach. Other EDs described how inadequate staffing meant their programs operated on fewer days or more limited hours than they would like.

Throughout the sections above and in the quote below, interviewees described how limitations on funding and access to supplies impacted program fidelity, "the degree to which an intervention was implemented as it was intended by the program developers."

> "[When SSPs lack resources and supplies] that means less engagement, that means less people that are going to be able to get the resources that they need for syringes, there's going to be more infectious diseases, there's going to be more overdose deaths, there's going to be an increase in hospital visits. People have this misconception, this assumption that we're enabling. No, we're stopping all of these other things from getting to a degree where it's hard for us to handle as a community. So, it's not just us providing the syringes, it's us providing the resources, us having the support for people who may or may not want to go into recovery. We have peer support specialists that are there, we can refer them to housing, we can refer them to employment, we can refer them to recovery if that's something they want, we can have them speak to a psychiatrist right here because they're part of our mobile unit you know? So, it's not just giving syringes to someone. We're giving a lot, including hope, so … [when funding is inadequate] you're not just stopping the flow of syringes, you're stopping a whole lot of other things that people need." [SSP 14]

The ED above alludes to a range of evidence-based services provided by their SSP, highlighting how inadequate funding threatens the reach and fidelity of those services. They further described how placing limitations on their services resulted in adverse community health outcomes.

Other interviewees drew similar connections between implementation and health outcomes, particularly regarding program sustainability, "the extent to which a newly implemented treatment is maintained or institutionalized within a service setting's ongoing, stable operations."

> "To [provide services] consistently in a way that clients can rely on requires us to be able to pay people for their time and expertise to actually grow something and sustain it, which is what we're experiencing now … We had a huge loss of budget when a project that was funding us lost their funding. And that's the world

of grants, right? You kind of live by the grant, you die by it, and we have definitely died by it over the past six months or so." [SSP 16]

5. Discussion

Taken together, our results depicted multilevel barriers stemming from structural stigma against PWUD that informed inadequate, restrictive, and burdensome funding for SSPs despite their demonstrated efficacy (Bradley et al., 2019; Cranston et al., 2019; Glick et al., 2018; Golden et al., 2019; Mattson et al., 2021; Spencer et al., 2022). Limited funds led to insufficient staffing and subsequent burnout and turnover at the program level. Diminished reach, fidelity, and sustainability of programs resulted from the confluence of barriers ultimately threatening staff, participant, and community health. Interviewees additionally described multilevel facilitators like harm reduction–friendly grant funding, technical assistance and capacity-building, grant writing collectives, volunteer labor, and staff with lived or living experience at the program level. They also called for strategies like high level advocacy and widespread public education to address structural stigma, as well as additional funding at the federal level. While each facilitator represented a means to overcome barriers and improve implementation and health outcomes, interviewees ultimately described such efforts as insufficient in meeting participant needs. The process through which facilitators and proposed strategies might overcome barriers is not fully understood and may represent a critical and novel opportunity for future research.

Several factors may inform the insufficient and restrictive nature of funding available to SSPs at the federal level. Participants in our sample described structural stigma—toward PWUD, people with opioid use disorder (OUD), and harm reductionists—as a driving force behind the insufficient and restrictive funding available to SSPs. For example, a nationally representative survey of U.S. households found that 78% of respondents agreed that individuals with OUD were to blame for their disorder (Kennedy-Hendricks et al., 2017). At the health systems level, a survey of more than 1000 American Medical Association–affiliated physicians found that 79% would be unwilling to accept someone with OUD into their family through marriage, and that 77% would not accept someone with OUD as a coworker (Kennedy-Hendricks et al., 2016). A review article on stigma associated with substance use concluded that stigma may reduce the willingness of policymakers to direct funds toward PWUD, and that OUD services were not a high priority for most policymakers (Yang et al., 2017).

Recent work from our research group utilized 2022 NSSSP data from 353 SSPs nationwide to describe programs' budgets levels and their associations related to service delivery. The analysis closely mirrored our participants' descriptions of underfunding, concluding that SSPs operating in rural, suburban, and urban areas reported annual budgets that reflected just 5%, 23%, and 46%, respectively, of CDC's minimum funding recommendations (Facente et al., 2023; Teshale et al., 2019). The study also found a statistically significant association between SSPs' budgets and (1) the number of participant encounters where syringes were distributed, (2) the number of syringes distributed, (3) the number of participant encounters where naloxone was distributed, and (4) the number of naloxone doses distributed (Facente et al., 2023). While that analysis does not elucidate the pathways through which increased

funding may contribute to improved services, when coupled with our qualitative findings it is conceivable that funding positively impacts SSPs' reach, fidelity, or sustainability by overcoming implementation barriers via improved access to supplies, adequate staffing, mitigated burnout and turnover, and limited job stress.

As our study interviewees mentioned, federal law in the United States prevents the use of federal funds to purchase safe smoking kits and "other equipment whose only purpose is to prepare drugs for illegal drug injection" (Centers for Disease Control and Prevention, 2019; US Department of Health and Human Services, 2016). The Biden administration was made to publicly clarify that safe smoking kits could not be purchased using federal harm reduction funds following a bipartisan effort led by senators Manchin (D-WV) and Rubio (R-FL) in February 2022. Perpetuating the myth that harm reduction services enable drug use, Sen. Rubio noted how "we need to do more, but sending drug paraphernalia to addicts is not the answer" (Rubio, 2022). Combating structural stigma against PWUD or people with OUD remains both complex and understudied (McGinty & Barry, 2020; Wogen & Restrepo, 2020). While much work remains, structural stigma faced by other marginalized groups like the LGBTQIA + community has changed over time through sustained interventions like coalition building, advocacy, and issue framing (White et al., 2020). Similar efforts among the harm reduction community are both long-standing and ongoing and may represent a long-term approach to addressing structural stigma (Cloud et al., 2018; Drucker, 2013; Klein, 2020).

Several EDs also described the burdensome nature of some federal grant mechanisms. Interviewees described challenges regarding the application process, data collection, and reporting requirements. While meant for harm reduction organizations, the sentiment among several EDs seemed that such requirements felt out of touch with the capacity and ethos of their programs. Unfortunately, this represents a long-standing tension between the "fit" of federal funds and the needs of harm reduction programs. A 2012 national survey of SSPs found that resource capacity to apply for and comply with grant regulations, along with concerns around changing program culture, stood as major barriers to acquiring federal funds (Green et al., 2012). The same authors concluded that "policy implementation gaps appear to render federal support primarily symbolic. In practice, funding opportunities may not be available to all SSPs." More recently, an analysis from our own research group found that only 13% of SSPs nationwide reported funding from the federal government in 2021 (Lambdin et al., 2022). In line with several strategies that our interviewees described, Green et al. (2012) ultimately call for increased capacity-building and technical assistance for SSPs to improve their ability to access federal funds. An unintended and compounding consequence of SSPs needing to access funds through multiple sources may be that each funding stream requires different data collection and reporting stipulations, creating additional staff burden. A better understanding of how funders determine data and reporting requirements, alongside the development of best practices, may help standardize and streamline data collection and reporting requirements across funding organizations.

At the state level, two EDs from California-based SSPs described positive experiences with CHRI funding, providing a snapshot of what more robust funding might accomplish. In response to record levels of drug overdose deaths, California's 2019 Budget Act

allocated $15.2 million—the largest harm reduction investment in the state's history—to direct SSP funding as well as training and technical assistance (California Department of Public Health, 2023). The budget request was informed through advocacy efforts by SSP staff and participants across the state engaging in the California Syringe Exchange Programs Coalition (CASEP), a mutual aid and advocacy network that works to build program capacity and reduce the harms of the racialized war on drugs and drug use at the individual and community level. Planning began at a 2017 CASEP conference, hosted by NHRC, to determine funding priorities and outline what a successful initiative might entail. In 2018, NHRC and Drug Policy Alliance crafted the budget request, and the CASEP Coalition participated in advocacy visits to the state capitol. The budget was initially rejected, reintroduced in 2019, and once again advocated for by the CASEP Coalition (National Harm Reduction Coalition, n.d.-b). Policymakers finally approved and allocated funding in 2019. The funding administrators at CDPH/Office of AIDS (OA) held listening sessions to collect additional feedback from SSPs about funding prioritization, allocation, and preferred technical assistance/grant manager characteristics. CDPH/OA issued an RFA for a grant manager and technical assistance provider, and in January of 2020 NHRC was selected to manage the CHRI funding and provide training and technical assistance to grantees (National Harm Reduction Coalition, 2020). The grant combined a low-barrier application process and evaluation, including the use of point-in-time surveys to better understand the composition and experiences of SSP participants, along with a flexible budget modification process that allowed programs to use funds for staff, operational costs, and some supplies. Training and technical assistance took the form of regularly accessible office hours, peer mentorship, structured quarterly calls, and training sessions on topics like staff support, service scale-up, and organizational development (National Harm Reduction Coalition, n.d.-a). Our research group's own evaluation of the initiative found that CHRI-funded SSPs served 135% more participants, distributed 75% more harm reduction supplies, and distributed naloxone to 73% more people compared with non-CHRI-funded programs nationally (Lambdin et al., 2023). The analysis also found that CHRI-funded SSPs reported a median annual budget of $245,000 compared with the national average of $93,920, with CHRI funding representing most of that gap. Despite the increased funding, CHRI-funded programs still operated 46% below CDC's minimum recommended budget levels for the smallest category of SSPs (in rural settings), at $450,000 (Lambdin et al., 2023). With CHRI funding set to expire in December 2023—putting several SSPs at risk of service delivery interruption—CASEP, with the support of the California End the Epidemics Coalition, Drug Policy Alliance, and NHRC successfully advocated for the extension and expansion of the initiative. The 2023–2024 state budget will allocate $61 million—four times the amount of the original funding initiative—over four years from state opiate settlement funds to support more than 60 SSPs through the California Overdose Prevention & Harm Reduction Initiative (National Harm Reduction Coalition, 2023). Despite a current uptick in local political and community pushback that has impacted both the CDPH and SSPs, the state legislature remained committed to supporting these evidence-based services. The receptiveness of the legislature and the relationship built between SSPs, advocates, and the CDPH state OA created a unique opportunity to expand harm reduction efforts by addressing the funding and staffing barriers that our interviewees highlighted.

EDs also described the California Harm Reduction Supply Clearinghouse as a major facilitator alongside CHRI funding. Established in the Budget Act of 2015 and later revised as part of the 2018 Budget Act, the state facilitated SSP access to "all harm reduction supplies as necessary for the prevention of disease, injury, or overdose" (California Department of Public Health, 2022). Critically, this included many of the drug use supplies banned by most federal funding mechanisms. The conjunction of CHRI funding and supplies made available through the clearinghouse aligned with four of the most proposed strategies in our dataset: (1) additional, (2) low-barrier (less burdensome) funding, (3) without restrictions on the purchase of harm reduction supplies, and additional (4) training and technical assistance. Similar clearinghouse programs exist in Maryland, New York, New Mexico, Oregon, and Washington state, but for the most part, SSPs in our sample reported operating beneath the stricture of federal bans and cobbling supplies together through multiple funding sources or networks (Oregon Health Authority, 2022). The expansion of CHRI-style funding alongside clearinghouse programs represents a potentially impactful strategy to the pervasive barriers that challenged SSPs in our dataset. Future research might look to uncover organizational outcomes of CHRI-funded SSPs to determine how facets connected to insufficient and restrictive funding like staff burnout and turnover compare to non-CHRI-funded SSPs. A better understanding of the statewide mobilization of the CASEP Coalition and the impact on California lawmakers' and state health officials' decision-making process regarding the design and administration of both the CHRI grants and the clearinghouse program may provide a roadmap for other states interested in funding harm reduction initiatives to address opioid overdose mortality and infectious disease transmission.

While interviewees described CHRI funding and clearinghouse programs as state-level facilitators to program implementation, they represent merely a handful of SSPs interviewed in our sample. In fact, several ED's described unique state level barriers that directly challenged program reach, fidelity, and sustainability. One ED highlighted state-level policies that entirely prohibited the possession and distribution of harm reduction supplies, forcing their program to operate completely underground. That interviewee described a reliance on mutual aid from SSPs in states with fewer restrictions for supply donations. The restrictive legal status of harm reduction services in their state also made them ineligible for most harm reduction funding, resulting in the ED acting as the sole staff member. They shared how their program's sustainability hinged almost entirely on their own personal wellbeing and freedom. Other EDs described state policies that authorized harm reduction services but still banned possession and distribution of many harm reduction supplies. In those cases, EDs noted how their programs provided the supplies despite the bans, but also mentioned the cost related to staff fears and stress, an emblematic theme throughout our data that harmed program fidelity and sustainability. While our analysis highlights the utility of CHRI funding and clearinghouse programs to address several overarching funding and staffing barriers, we want to afford equal weight to the experience of SSPs in states that restricted or fully banned harm reduction services. ED's from those states described dire efforts to provide much needed supplies and services amid the backdrop of pernicious challenges that immediately threatened program operations and community health.

This study has several limitations, including the virtual format of interviews and a demographic skew toward SSPs operated by community-based organizations in urban settings and states where syringe services were sanctioned. Due to the geographic diversity of participants in our sample, combined with challenges regarding the COVID-19 pandemic, our team chose to collect data via video conferencing. Face-to-face interviews are considered a gold standard among qualitative researchers, giving interviewers the ability to read body language and other nonverbal data (McCoyd & Kerson, 2006). However, the virtual format represented the only viable data collection strategy given the state of the COVID-19 pandemic at the time of data collection; our interviewers adhered to virtual data collection best practices like utilizing a high-bandwidth connection (Sedgwick & Spiers, 2009). We conducted most interviews with urban community-based SSPs. While the voices and perspectives of participants representing rural and unsanctioned programs do come across in our data, it is possible that programs like theirs, as well as programs situated in public health departments, experience unique barriers and facilitators regarding program funding and staffing. Documentation of challenges that rural SSPs face, along with depictions of those based in public health departments, are increasingly reported in the harm reduction literature (Baker et al., 2020; Childs et al., 2021; Seaman et al., 2021; Stancliff et al., 2015; Swann et al., 2022).

Our study also exhibits several strengths, most notably our combination and utilization of three implementation research frameworks. The convergence of the CFIR, TDF, and CMIR helped situate our themes across multiple levels and assisted us in clearly describing the connections between barriers/facilitators/strategies and implementation and health outcomes. Our qualitative approach also combined several methods including RTA, memo writing, and code weaving to produce a clear understanding of major themes.

6. Conclusions

This work characterized financial challenges that SSPs in our sample experienced. Interviewees clearly articulated the negative impact of insufficient, restrictive, and burdensome funding available to their programs. Inadequate funding led to insufficient staffing and eventually staff burnout and subsequent turnover. Taken together, these barriers threatened the reach, fidelity, and sustainability of the evidence-based services provided by SSPs in our sample, ultimately blocking programs from more effectively addressing health outcomes like infectious disease transmission and opioid overdose mortality within their communities. Long-term structural interventions like advocacy may address the underlying structural stigma at the root of insufficient, restrictive, and burdensome federal funding. In the meantime, state-level efforts like harm reduction–centered funding combined with technical assistance, capacity-building, and clearinghouse programs may facilitate better implementation and health outcomes for programs and communities fortunate enough to benefit from compassionate state-level intervention. Programs in states and localities with policies that outlaw or constrain harm reduction services will likely continue to experience existential challenges that may immediately result in attenuated or completely dismantled services, in turn harming health outcomes at the community level.

Acknowledgments

The authors would like to acknowledge the work, compassion, and generosity of the individuals interviewed for this study as well as the participants they and their staff serve. We would also like to thank Jana Ramsay at RTI who provided copyediting contributions.

Funding and grant number statement

This work was supported by the National Institute on Drug Abuse [# 3R01DA046867-03S1, 2020].

Abbreviations:

CASEP	California syringe exchange programs coalition
CDC	Centers for disease control and prevention
CDPH	California department of public health
CFIR	Consolidated framework for implementation research
CHRI	California harm reduction initiative
CMIR	Conceptual model of implementation research
ED	Executive director
HCV	Hepatitis C virus
HHS	Department of health and human services
HIV	Human immunodeficiency virus
NHRC	the National harm reduction coalition
NIMBY	Not in my backyard
NSSSP	National survey of syringe services programs
OA	California office of AIDS
OUD	Opioid use disorder
PWID	People who inject drugs
PWUD	People who use drugs
RTA	Reflexive thematic analysis
SAMHSA	Substance abuse and mental health services administration
SSPs	Syringe service programs
TDF	Theoretical domains framework

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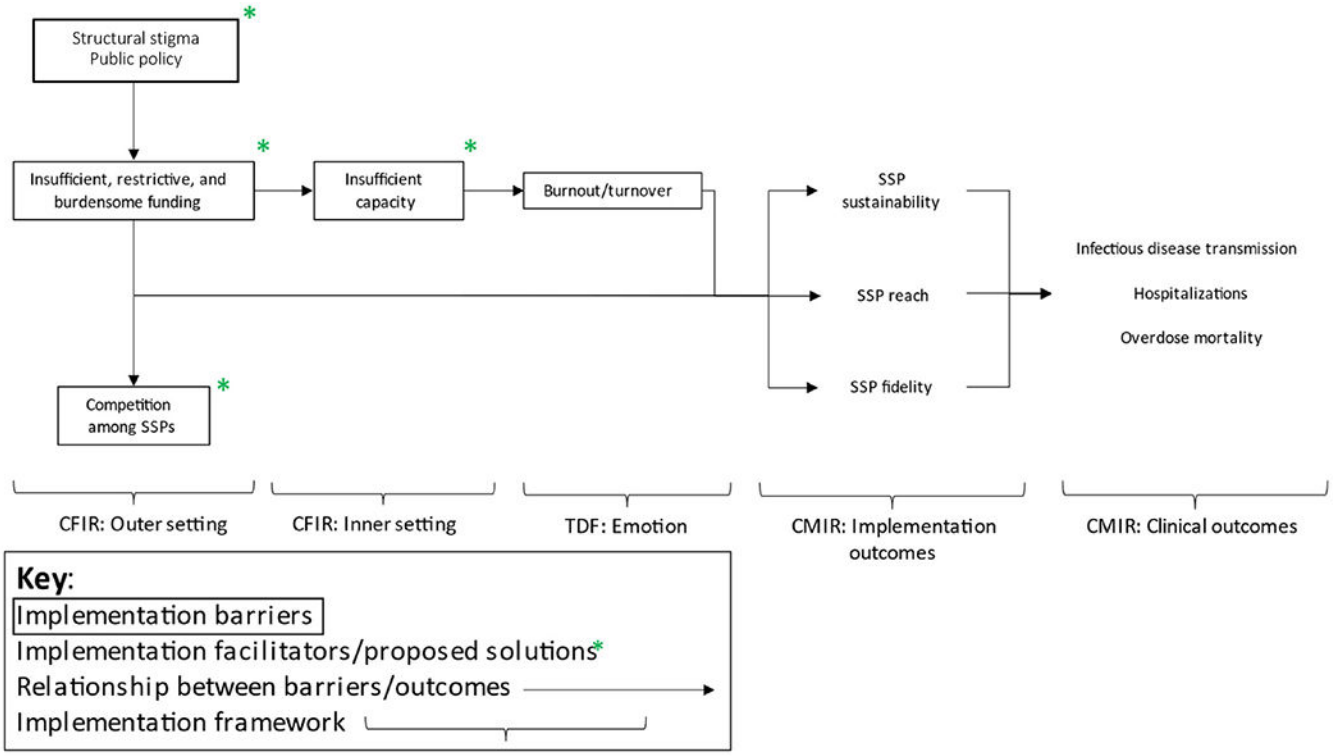

Fig. 1.
Relationships between thematic barriers and implementation and health outcomes.

Table 1

Program characteristics.

Program characteristics (N = 20)		
	N	**(%)**
Rurality		
Rural	2	10%
Suburban	3	15%
Urban + Rural	3	15%
Urban	12	60%
Geography		
Northeast	4	20%
Southeast	5	25%
Midwest	4	20%
Southwest	2	10%
West	5	25%
Organization Type		
Health Department	3	15%
Community-Based Organization	17	85%
Legal Operating Status		
Unsanctioned/underground	1	5%
Sanctioned	19	95%