Ingenuity and resiliency of syringe service programs on the front lines of the opioid overdose and COVID-19 crises

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Abstract

As COVID-19 accelerated throughout 2020, syringe service programs (SSPs) faced challenges necessitating programmatic adaptations to prevent overdose deaths while simultaneously keeping workers and participants safe from COVID-19. We used qualitative methods to gain an understanding of the social context within which SSPs are operating during the COVID-19 pandemic. We conducted 36 in-depth interviews with program representatives from 18 programs and used the Exploration, Preparation, Implementation, Sustainment (EPIS) implementation framework to guide data analysis. We focused on 3 of the 4 EPIS constructs: Outer context, inner context, and innovation factors. Our data indicate that responding to the pandemic led to innovations in service delivery such as secondary and mail-based distribution, adoption of telemedicine for enrolling participants in medications for opioid use disorder (MOUD) and use of virtual training platforms for overdose prevention. We found high levels of staff and volunteer commitment, which was a cornerstone to the success of these innovations. We observed that many SSPs were short-staffed because of their commitment to safety, and some lost current funding as well as opportunities for future funding. Despite minimal staffing and diminished funding, SSPs innovated at an accelerated pace. To ensure the sustainability of these new approaches, a supportive external context (federal, state, and local policies and funding) is needed to support the development of SSPs' inner contexts (organizational characteristics, characteristics of individuals) and sustainment of the innovations achieved regarding delivery of naloxone and MOUD.

Keywords

Syringe Services Programs; COVID-19; Programmatic Adaptations; Overdose; Prevention

INTRODUCTION

Syringe service programs (SSPs), which at minimum provide access to and disposal of sterile syringes and injection equipment for people who use drugs (PWUD), were initiated in Australia, Europe, and the United States in response to the hepatitis B and HIV epidemics of the 1980s.[1,2] Over the past 4 decades, SSPs have responded creatively and effectively to these ongoing epidemics[3,4] and to the emergence of new health crises that have faced PWUD, such as hepatitis C virus (HCV), unsafe drug supply, opioid overdose, endocarditis, and skin and soft tissue infections.[5–10] As the novel coronavirus 2019 (COVID-19) pandemic wreaks havoc around the world, SSPs have been forced to pivot and reimagine service delivery to protect the lives of their program participants, volunteers, and staff.

SSPs have historically been grassroots and community-led responses, designed, implemented, and staffed by current and former PWUD, HIV and social justice activists, and people who deeply care for those who are marginalized and stigmatized by their drug use. [11–15] There is a strong evidence base for the effectiveness of SSPs in reducing injection risk behaviors and infectious disease transmission among program participants.[16,17] SSPs in the United States have developed into multiservice organizations in many cases, providing testing and linkage to care for people with HIV and HCV as well as linkage to substance use treatment.[16] SSPs receive funding from a variety of sources including city, county, state health departments; private foundations; corporate donations; other community-based organizations; and local fundraising efforts. Services are provided through drop-in centers, mobile service sites, fixed outdoor sites (pop-up tables, mobile vans, etc.), outreach, and delivery, and are often staffed by volunteers as well as paid staff. SSPs are designed to be welcoming and non-stigmatizing and are often the only source of health care with which PWUD engage.[18–20] Thus, SSPs fill a unique role in promoting health and well-being in the lives of PWUD, and engagement with SSPs has consistently been associated with lower risk behaviors and better health outcomes among participants.[21–23] Furthermore, SSPs have integrated overdose education and naloxone distribution (OEND) into service provision and have pioneered opioid-related overdose prevention efforts since the late 1990s.[24–26] As of 2019, 94% of SSPs in the United States were also offering OEND programs,[9] which prepare laypersons—PWUD, family members, peers—as prospective responders in overdose events by providing training in rescue breathing, access to naloxone, and directions for naloxone administration.

COVID19 spreads easily through close contact or airborne transmission that occurs when saliva droplets are expelled during normal activities, such as breathing, talking, singing, coughing, or sneezing.[27–30] As of February, 24, 2021, over 500,000 people in the United States had died as a result of COVID-19.[31] With limited vaccine availability and the absence of a comprehensive system to test and trace individuals, physical proximity is potentially dangerous. To reduce risk of viral transmission, policy makers have implemented a wide variety of community mitigation strategies such as issuing shelter-in-place or stay-at-home orders and shutting down all nonessential services.[32] People with underlying health conditions including hypertension, diabetes, cardiovascular and respiratory disease are at high risk for severe COVID-19 disease.[33] PWUD are disproportionately affected with a number of these underlying health conditions[34,35] and additionally are at high risk for

contracting COVID-19 because of unsanitary and overcrowded living conditions; stigmatization; incarceration; homelessness; and difficulties in adhering to quarantine, social distancing, or self-isolation mandates.[2] SSPs are critical as they provide PWUD with opportunities for engagement access to health care and lifesaving supplies, The potential closure of SSPs due to lock-downs and shelter-in-place orders and the economic impact of COVID 19 on SSP operating and supply funding could have significant consequences on the lives of program participants. Thus, during the COVID-19 pandemic, SSP leadership and staff must balance growing concerns about increases in opioid-related overdoses and community vulnerability to HIV outbreaks with the need to keep their staff, volunteers, and participants as safe as possible from contracting COVID-19.

On the other hand, some responses to the COVID-19 pandemic facilitated broader implementation of key evidence-based interventions, such as medications for opioid use disorder (MOUD) which include methadone, naltrexone, and buprenorphine. While MOUD has been available for decades, only 18% of people with an opioid use disorder are currently accessing them.[36] Federal law has historically limited wide-spread implementation of MOUD. Specific to buprenorphine, the Ryan Haight Act of 2008 required that an initial prescription of a controlled substance like buprenorphine involve an in-person examination between a potential patient and a trained provider. This requirement created multiple barriers for PWUD trying to access MOUD.[37–39,40,41,42] At the onset of the COVID-19 pandemic, the U.S. government waived the Ryan Haight Act's in-person examination requirement for the initial consultation for buprenorphine treatment, thus permitting the initial consultation to be held via telemedicine for the duration of the COVID-19 emergency.[43] This policy shift allowed SSP leadership to prepare for and implement telemedicine initiatives for buprenorphine treatment in the midst of the COVID-19 pandemic.

The COVID-19 pandemic has overshadowed and simultaneously exacerbated the opioid overdose mortality crisis. Early research has found that some SSPs shut down their services temporarily or permanently; others remained open and made significant changes in their operating hours and service delivery models.[18,44] Where services and engagement are reduced, there is a growing concern that the health and well-being of PWUD is at great risk as they face a convergence of health crises.[45] Evidence that opioid overdose deaths are rising during this epidemic is emerging, with more than 40 states in the United States reporting increases in opioid-related mortality.[46,47]

In this paper, we report on challenges faced by SSPs in light of community shelter-in-place orders, concerns about occupational safety and the economic impact of COVID 19 on SSP funding and sustainability. We describe the ways in which SSPs, faced with multiple challenges, used their creativity and commitment to the health and well-being of and partnerships with PWUD to adapt their programs to prevent overdose deaths by prioritizing naloxone distribution and access to MOUD during the COVID-19 pandemic.

METHODS

Data for this qualitative analysis were derived from a subsample of SSPs enrolled in a randomized controlled trial funded by the U.S. National Institute on Drug Abuse to assess

the implementation of best practices for naloxone distribution (R01DA046867; PI Lambdin). SSPs enrolled in the parent study were recruited by the North American Syringes Exchange Network (NASEN) from a national list of SSPs.[9] Program representatives, included SSP leadership, staff and volunteers, provided informed consent when they enrolled in the trial. In-depth interview sessions were conducted monthly with representatives from programs enrolled in the intervention arm of the study. Thirty-six in-depth interviews with program representatives from 18 SSPs (range 1–4 interviews; mean 2 interviews) located in 7 of the 9 census divisions in the United States (see Table I) were completed from March through July 2020 (during the first U.S. wave of COVID-19 pandemic). The interviews were conducted and recorded using Zoom video conferencing software. Recordings were downloaded immediately and transcribed verbatim by a professional transcription service. All study procedures were approved by RTI International's institutional review board in line with the Code of Ethics of the World Medical Association (Declaration of Helsinki).

We used qualitative research methods to gain an in-depth understanding of the social context within which SSPs are operating during the COVID-19 pandemic. To this end, a brief interview guide was used by the research team to ensure consistent inquiries across interviews, allow for unanticipated topic areas to emerge, and follow up on particularly interesting findings. During the interview, program representatives were asked to describe the following: (1) shelter-in-place/stay-at-home orders in their locale; (2) changes in staffing; (3) changes in funding; (4) organizational adaptations; (5) changes in service provision for naloxone, MOUD, and other harm reduction services; (6) changes in local drug supply; and (7) provision of COVID-19 risk reduction information.

ATLAS.ti (version7) software was used as a qualitative data management tool. The Exploration, Preparation, Implementation, and Sustainment (EPIS) implementation framework was used to guide data coding and analysis. All 36 transcripts were read in their entirety and coded for salient themes, using an inductive analysis approach.[48] The initial code list was developed from the interview guide and modified throughout the coding process. As themes emerged, brief summaries were entered into a matrix to help visualize similarities and differences between programs.

The EPIS implementation framework elucidates 4 constructs that drive different components of the implementation process from exploration to preparation to implementation and sustainment.[49] The constructs are the outer context (the system external to an organization), inner context (the environment within an organization), bridging factors (the connections between the external and internal context), and innovation factors (the nature of the evidence-based intervention being implemented). In this study, we applied these constructs to understand experiences of SSPs as a service setting once the COVID-19 pandemic began and, in particular, to document impacts on implementation of OEND and MOUD. We focused on 3 of the 4 constructs: outer context, inner context, and innovation factors. We did not apply the construct of bridging factors, as it did not emerge as a theme from our data. Our analysis resulted in operationalization of 6 factors within 3 constructs, as follows. Outer context: service environment/policies, funding, and interorganizational environment; and networks; inner context: individual characteristics and organizational characteristics;

innovation factors: evidence-based practice characteristics. These factors and their operationalized definitions are presented in Table II.

We next present our results according to the EPIS framework. An additional section, Silver Linings, details the positive outcomes that resulted from programmatic adaptations during COVID-19.

RESULTS

The 18 SSPs in this analysis distributed a total of almost 2 million syringes in the 3 months before enrollment in this study; the mean number of syringes distributed in the past 3 months was 110,852 (range 2777–303,000). Nine of these programs were staffed completely by volunteers and the other 9 were staffed by a mix of full-time, part-time, and volunteer workers. Three of the SSPs are part of local health departments; 8 receive funding from local and state health departments; and 7 do not receive any health department funding, relying on grants, donations, and other fundraising efforts. SSPs reported annual budgets ranging from $0 to $1,035,000 per year. Those programs reporting $0 per year receive all their supplies through donations and all their workers are volunteers. Since the beginning of the pandemic, 12 of the SSPs had reduced their operating hours, 13 reduced their staffing, and 15 increased the amount of naloxone distributed to participants at each visit.

Outer context: service environment/policies.

When cities, counties, and states announced shelter-in-place and stay-at-home orders in response to surges in COVID-19 infections, their immediacy necessitated that SSPs quickly change their naloxone distribution and other service delivery. Some programs were directed to shut down immediately. In other locations, SSPs were deemed essential services, and although they could remain open, it was clear they needed to modify how to distribute naloxone and structure their service delivery. Information related to operating safely was difficult, if not impossible, to find. Some programs received directives from parent organizations, but many made their own programmatic decisions using guidelines from the Centers for Disease Control and Prevention (CDC)[50] as well as input and guidance from the National Harm Reduction Coalition.[51] These changes included closing fixed sites, drop-in centers, and offices. Many programs limited workplace access, stopped doing outreach, and some temporarily stopped accepting used syringes until more information about the spread of COVID-19 became available. One program representative explained:

> We've stopped taking returns from our participants because I figured that the biggest risk to staff health was probably the sharps containers and any kind of germs that they would be touching on the [outside of the] sharps containers. So we temporarily stopped taking returns just to decrease that. And then we don't have the [medical waste disposal service] coming into the office. I really don't want those guys in my office because they're in all the hospitals, so I'm like, "Hey, the most dangerous person coming into our office is probably the waste disposal guy."

Some SSPs reduced their operating hours and others stopped providing services that required more intensive person-to-person contact, such as HIV and HCV testing. Those SSPs that continued to provide services from indoor fixed sites or drop-in centers either did

not allow participants to enter the building, limited the number of people who were allowed indoors, or set up their sites outdoors. SSP staff created visual reminders for participants, such as marking the sidewalk to indicate 6-foot spacing for social distancing; hanging posters with reminders about how to reduce risks; and providing masks, hand sanitizer, and handwashing stations.

Outer context: funding.

Some programs told us that state funding was indefinitely delayed, and although they have been reassured that payments will eventually be made, they have gone months without the money they need to pay their employees and purchase needed supplies. One program representative described how their program is struggling due to lack of payment by state funders:

> The state hasn't paid… since February or early March, I guess. They have been telling us since March, "Don't worry, COVID won't disrupt the payment mechanisms," so I didn't even know to expect this; they didn't tell us that there was going to be problems…. In fact, I had a call with them because I was trying to expedite a [invoice] that I was submitting because we were getting short on cashflow, and they said, "Yeah, we can't expedite anything." And I said, "Okay, when are you going to pay the [previous invoices]? I know I just submitted them 3 weeks ago," and they said, "Yup, we have a 30-day prompt payment rule, so you'll be paid 30 days from when you submitted it." And I said, "Okay, so as long as the money is in the account [late April] we'll be fine." … It is clearly [June]… now. And we are not fine.

Program representatives expressed a great deal of concern because they expected they would lose future funding because of state shutdowns and lack of opportunity to hold fundraising events. One program that reduced the number of staff providing SSP services adjusted their team's weekly activities by having them work some hours from home doing administrative tasks and attending webinars and trainings. A program representative, from this program, was worried that this was not sustainable and told us:

> We are going to find stuff for people to do so that they aren't going to miss a paycheck and they're going to be able to get the same number of hours that they get every week. But it's kind of a hard workaround because we aren't sure now whether we're going to get paid from the state because our state shut down today.

In addition, some small grants from philanthropic organizations were canceled and in-person fundraising events were no longer possible. One program representative told us:

> We usually do a fundraiser in the spring at one of the [board member's] houses…. They have this huge, beautiful home with this amazing yard, and they invite every [colleague] to come…. People come and just write out checks for $1,000 and that was, you know, $25,000 worth of our annual budget right there…That's something that we have to postpone, but at this rate when will it ever be possible to host something like that again?

As a result, programs had to furlough employees or permanently reduce staffing. Several programs that have furloughed their staff are still trying to continue to provide services with barely a skeleton crew. When asked how they are managing without their staff, one program representative said, "I recognize that there is no way I can totally do this. I'm just going to do the best that I can and stumble through."

Outer context: interorganizational environment and networks.

SSPs recognized that they needed support from community partners to address interruptions in services and the increased risk for overdose during the pandemic. Some built on or modified existing relationships with other organizations, and others developed new relationships. These relationships included other SSPs in their communities, methadone clinics, abstinence focused recovery programs, drug courts, services for people who are unhoused, and primary care physicians who provide MOUD.

One SSP described partnering with several community programs—including substance use treatment programs, recovery homes, and the police—to distribute naloxone. The program representative told us they are training workers from other programs to be overdose education and prevention trainers and giving them naloxone to distribute to their clients:

> We're not doing a whole lot of outside agency things right now, so I had to shut down all my community trainings because the guidelines of the state, but we did do some train-the-trainer sessions. And some of the recovery centers that I was doing them in [are] doing naloxone trainings, so I got them naloxone and they're doing the trainings for us.

Another program described similar relationships with local methadone clinics and mental health clinics. In the past, they had provided naloxone to people waiting in line at methadone clinics. Going inside the clinic was no longer an option. They worked out an arrangement with 4 methadone clinics and 2 mental health clinics in their county to drop off prepackaged naloxone kits to be distributed by clinic personnel. The kits contain

> our instructions that we normally pass out in a training, frequently asked questions, and a link to a 1-minute [on-line] video that shows how to administer the Narcan [naloxone]. We put everything inside of a paper bag, like a lunch bag, and fold it over the top and staple it shut with instructions that say, "Open this bag, watch this video, call this number if you have questions or you need a refill.".

This same program also developed a relationship with the owner of a group of sober living homes who was very concerned about a spike of overdoses in the surrounding area. The owner approached the program representative, and they developed a system to quickly distribute naloxone kits to every resident in his homes:

> He said "Hey, can we do something?" and I said, "Yeah, we can do the same thing with you that we did with the methadone clinic." I said, "Do you know how many residents you have?" so he put together a roster for me with the number of residents at each house…. We bagged up the exact number of kits and I took all of these garbage bags—each garbage bag had the house number on it—and the owner and I

went around to each of the houses dropping off all of the Narcan kits at all 10 of his sober houses.

Inner context: individual characteristics.

As SSP leaders described the ways in which their programs adapted, they also described the commitment of their staff and volunteers, the challenges they faced, and their creativity and resourcefulness to continue to provide lifesaving interventions.

SSP leadership and staff were worried about their health and the health of their families, especially those who were caring for family members who are older or have chronic health conditions. Some staff themselves have chronic health conditions that put them at risk for severe COVID-19 illness if they were to become infected. Although numerous programmatic changes were made during the pandemic, program leaders and workers were adamant about keeping programs open. Because of increasing risks for opioid overdose, program workers were committed to figuring out ways to keep program participants engaged in overdose prevention and to connecting program participants who were interested in MOUD to treatment. One program representative described the commitment of their team as follows:

> I will say again and again, we all say it, we have literally the best team ever. They would not want to stop providing services for literally any reason, ever. They are in their hearts harm reduction specialists and they were born that way.

> Another program representative told us:

> Most of our stuff is done by volunteers and they are super dedicated, and they do [harm reduction] work… for more places than just our program. Something that I hear them say a lot is that they exist for this work and while it is draining, it also feeds them and nourishes them.

Because of their commitment to their communities and their experience dealing with crisis, most programs have managed to maintain some form of service provision and some programs have expanded their programming. When asked how they are navigating the challenges of the COVID-19 pandemic, one program representative described decision making and planning during this time as follows:

> It felt kind of like hurricane prep or something where—it was like an impending disaster and I think people implicitly understand, people in the group, that what we do is essential, and so we knew it would have to continue in some way, but it was going to be drastically different. So, it was like, "Let's just figure this out, like what do we want to do now, what do we want to do in 2 weeks?"

SSPs that experienced lost or delayed funding had to lay off or furlough their paid staff. In these situations, staff who were still employed, jumped in and picked up the slack. One program director who had to lay off all the paid staff is now the primary person providing direct services to participants. Once they announced the layoffs, a staff member in this program asked, "Well, can we volunteer?" Even without pay, some staff members continued to try to meet the needs of participants by distributing naloxone and connecting them with needed services.

Inner context: organizational characteristics.

With the immediacy of the stay-at-home or shelter-in-place orders, organizational adaptations were often implemented within a matter of days, which created multiple challenges for program leaders and staff to overcome. One program representative told us:

> It's… interesting—these are the moments that truly test the infrastructure of an agency, like whether we're prepared for such a thing or not, or what we have within reach to become prepared and still offer services and make that happen in a very short amount of time. It tests the ability of what an agency can accomplish in a short amount of time.

Programs experienced a lack of clear directives from local, state, and federal agencies on how to keep themselves running in a safe manner. They were told to rely on CDC guidelines, but these were difficult for SSPs to interpret and incorporate into their standard procedures. Many programs reported being left on their own to figure out the details of restructuring their programs.

> We were not super worried about it before because we just figured, someone's going to tell us what to do, the entire state's going to shelter in place, or there's going to be a quarantine…. We finally realized this is not happening; we're going to have to do this ourselves and decide what we're going to do.

Programs found themselves in a process of "constant brainstorming" as they redesigned programming, often asking their frontline staff to lead the way. One program described its decision-making and communication process:

> One thing that all three of us [in program leadership] have been trying to promote from day one is asking staff to be brutally honest with us as far as how things are going. Staff have heard that and done it, which is great because it gives us more guidance around how people are feeling and what the services should look like. So a lot of the changes, not everything, but a lot of the changes that we have done came directly from frontline staff because of their comfort level.

Another challenge SSPs faced was figuring out effective ways to communicate programmatic changes to participants. In some cases, it was necessary to let program participants know that indoor program sites had closed and that the program had shifted to deliveries of naloxone and other supplies and participants needed to order supplies online or through text messages or phone calls. However, many program participants were unhoused without access to phones, email, or the internet and could not be reached through these methods of communication. SSP staff and volunteers were very concerned that, because of these communication difficulties, participants would go without necessary supplies and be at increased risk of contracting HIV or HCV or of having an opioid overdose. Communication of these programmatic adaptations was essential, and the solutions included text alerts, website updates, and social media posts. We consistently heard that programs were worried about not reaching participants who were homeless and without phones or internet access. Many programs relied on a combination of these efforts that also included word of mouth, flyers, and outreach to communicate programmatic changes:

> So, it's on our website and we depend on a lot of word of mouth. We're doing outreach 3 days a week, so anyone we see out there we're letting know, anyone that calls in over the phone. And we're posting it on social media, which is good, letting all of our community partners know.

While many programs were dealing with limited staffing due to loss of funding, staffing was also limited for nonfinancial reasons. Many programs reported that their workers and volunteers had health conditions that put them at high risk for serious symptoms if they were to become infected with COVID-19. Some programs completely stopped using volunteers because of safety concerns. Other programs gave their volunteers the option, based on their own estimation of risk, to continue working or not. One program representative told us, "We have had a ton of our volunteers opt out of volunteering for the foreseeable future because it's just too much of a risk to take on—to be out in the community and to leave their homes."

Other considerations that reduced the number of available workers included staff who lived with individuals at high risk of serious illness with COVID-19, such as older family members and people with chronic illnesses. Also, organizations lost workers or worker time from people who had children at home who were without childcare or school.

Closures of other community resources also affected the daily lives of SSP staff, volunteers, and participants. Several programs reported buses that did not run their full routes, as well as closures of food pantries, homeless drop-in centers and overnight shelters, public restrooms, and inpatient substance use treatment programs. SSP workers explained that participants voiced confusion about why they lost access to so many services so quickly. This created challenges for SSP staff as they tried to support participants who were facing a loss of services; staff provided tangible assistance when possible. One program representative told us:

> Access to food, access to clean water, access to being able to clean themselves, showering, even just handwashing, those have all been very limited…. And we explain it to participants, and they're all understanding. And we are working on some resources. We got a couple grants around COVID-19 for some food cards and other opportunities for people, so we're going to start doing some of that.

A common thread across all the SSPs was that staff and volunteers had decreased the length of their interactions and increased physical distance from participants. Client engagement was limited to brief interactions, making it difficult for workers to build and maintain connection and relationships with participants to address their mental health, physical health, and other needs. Workers have stopped shaking hands, hugging, or touching participants, and these changes were challenging for SSP staff and volunteers who really valued this aspect of their work. One program representative told us:

> Yeah, it is hard. For some people, we are the only people who are willing to hug them and we're not touching anyone now and it is really tough on them. I've heard staff people say, "Man, this is really weird. I am sorry that we've had to change. And thank you for being patient with the way that we are doing services now; we appreciate your flexibility, and we miss seeing you." And when we were in the office, [in] most of the bags that we would put together we'd throw a little bit of

chocolate or candy or something—something in there … Obviously Hershey Kisses are not going to solve any problems, but [we] just [wanted to do] little things trying to let people know, "We're here for you, we still care about you."

Innovation factors: evidence-based practice characteristics.

With the specter of rising overdose rates, SSP leadership and staff knew they needed to continue distributing naloxone at the same levels as before the pandemic, if not more. Some SSPs started delivering naloxone and other supplies to participants' homes or scheduling meetups, and some programs implemented mail-based naloxone distribution. Other SSPs left a container with naloxone on the stoop outside their office door for self-serve pickup, increased the amount naloxone doses distributed per person per visit, and encouraged secondary distribution (distribution of naloxone to peers in their social networks). Programs received limited guidance on how to safely provide services with little or no additional resources to increase naloxone distribution, maintain connection with participants, and connect participants to other services in their communities. Programs found they had to rely on their own creativity and the creativity of their team members and participants to redesign programming.

As a result of stay-at-home orders, site closures, reductions in hours of operation, and limited staffing, many programs reported the number of people they were reaching decreased drastically. As a response, programs developed multiple innovative strategies to increase their reach. Some programs moved their indoor sites outside, setting up tents for shelter, adding handwashing stations, and providing prepackaged supplies. One program described setting up one of its outdoor sites with a drive-in station, similar to the drive-in COVID-19 testing or flu shot sites that are popping up all over the country:

> One site that was in a smaller community center is doing a drive-in. For anybody who has a car, they do not get out of their car to get supplies. Anybody who does not have a car can walk up to the table set up outside.

Many programs that closed fixed sites or reduced their schedules started delivering naloxone and other supplies to participants. Programs that were already making deliveries increased the number of deliveries, and staff making deliveries no longer went inside people's homes. They began meeting people outside at a prearranged destination or simply putting naloxone and other supplies at their front door, knocking on the door, and stepping back at least 6 feet.

Another program that was covering a large geographic area recruited additional workers and gave each worker a "caseload" within a geographic region. Their program representative described the delivery system as follows:

> We started this new delivery model, and we actually have a bunch of volunteers now—I think we have 12 or 15 drivers. Instead of it being this informal text line [like we had in the past]… you get assigned to a caseload, your volunteer is your driver, and they meet with you once a month and they give you a month's worth of supplies.

Another innovative distribution mechanism that is being adopted by programs, particularly those providing services in rural areas, is distributing supplies through mail order. Mail-

based distribution allows programs to reach people who live in isolated areas and do not have the resources to physically meet up with workers. Although mailing supplies does have a cost, the cost is offset by savings in fuel and staff time necessary to distribute supplies. Most programs became new program affiliates or ramped up their affiliate partnership with NextDistro an online and mail-based harm reduction platform.[52] Before transitioning from delivery to mail-based distribution, one program spent a week using a "modified COVID-19 delivery protocol," during which they took the time to explain the mail order system to participants, gave participants enough supplies to last a month, and encouraged secondary distribution. A representative from a different program described their transition to mail order:

> At the time I was paranoid about it and we were on lots of meetings and calls with the county and staying in touch with other syringe exchange programs, and a few of them launched mail order programs. And we had talked about it but the cost of it and the time just wasn't really in our plans until [COVID-19], and it turns out that our grant covers shipping. So we modeled everything after another county that had set it up, and then we just set up SurveyMonkey on our website that has the naloxone intake form on it So far, it has been smooth.

Mail-based distribution also has its shortcomings. Programs are struggling with finding ways to get supplies to people who do not have an address or who have an address but cannot get mail delivered. One program representative described how they are trying to reach program participants who do not have an address:

> We're just struggling right now figuring out how we continue to serve folks that don't have addresses… can we mail things to hotels where people are staying? Or can we partner with a pharmacy that will allow our participants to buy syringes? We can open a [pharmacy] business account and then folks could come in and buy what they need and then charge us for it. That's what I'm hoping to do, but I don't think our pharmacies are quite on board with that yet.

Because of COVID-19, some locales are providing hotel rooms so people who are experiencing homelessness can shelter in place or quarantine. One SSP that had transitioned from fixed sites to mail order realized that many participants were living in these hotels but could not use the hotel as their mailing address. This program started taking orders from people living in hotel rooms and doing what they called "dead drops," where they would leave supplies at the hotel room door, knock, and then leave.

The goal of all these programmatic innovations is to reduce the number and length of interactions that program staff have with participants while maximizing the number of supplies distributed to participants. Some programs have reduced the time spent conducting OEND trainings and completing certain types of documentation, such as whether they are distributing an initial dose of naloxone or a refill. One strategy that almost all the programs used was to increase the amount of supplies they were distributing to each participant, often doubling the amount of naloxone and other supplies participants request to make sure there is as much naloxone in the community as possible.

> We are doing pretty good. We are getting lots of naloxone out and trying to safeguard everybody and just doubling up for clients—asking them what they need, do they feel protected, giving them multiple kits so they can give one away and train somebody on their own.

Program staff are also encouraging participants to do secondary naloxone distribution so they can get as many doses as possible of naloxone into the community. One program representative detailed the work they are doing with a couple to encourage secondary naloxone and syringe distribution:

> Everybody in the community thought that the program was not operating and once [the couple] found out [we were open], they have been doing some secondary for me. I've given them two $20 gas cards and a $50 grocery card, and I am hoping to give them some more, because they brought me 2,200 used syringes.... They just met up with me this morning; they grabbed another thousand syringes and 10 more Narcan kits.

Before the COVID-19 pandemic, several programs provided linkages to or directly provided substance use, HIV, and HCV testing and treatment as part of SSP services. To reduce in-person visits and increase access to these services, several programs started linking participants to buprenorphine treatment via telemedicine. One program representative described the increase in availability of buprenorphine in their area because of changes in federal dispensing restrictions:

> There is one provider in particular… located in the area where we are located, and they're now able to be statewide and take a phone call and based on that phone call dispense a week's worth of Suboxone [buprenorphine] or the generic. And then to get a second week of medication the individual must participate in a 1-hour virtual group. And they have always been a true harm reduction model, but with the lower federal restrictions they are just basically pumping Suboxone into the community.

Some programs are still offering in-person buprenorphine induction and ongoing follow-up with telemedicine visits. One program has a worker who set up private virtual meeting spaces for participants and their medical provider and trained them all to use them for buprenorphine induction and treatment.

Some programs are attributing not seeing a rise in overdose deaths in their area to the fact that many of the barriers to buprenorphine treatment have been reduced with telemedicine. One program representative talked about how participants would not have enrolled in treatment otherwise:

> He was able to initiate buprenorphine all through telehealth, like no face-to-face, and that's pretty rad. I don't think he would have gone through with the appointments but his kind of hustles [money-making activities],if you will, were disrupted and, out of necessity, he's engaged in [medication-assisted treatment] now and does weekly telehealth counseling.

Silver linings.

Despite the many challenges faced by SSP providers and participants during the pandemic, the innovative solutions implemented by these programs in response to COVID-19 have led to some positive outcomes. Program representatives are quick to point out the silver linings to the dark cloud of COVID-19.

SSPs are distributing naloxone and other supplies to people who need them in a variety of different ways, many of which were considered not feasible before the pandemic. The speed and level of innovation among SSPs after the COVID-19 pandemic began is unprecedented. For some SSPs, formalizing new systems of delivery has increased the amount of naloxone that is being distributed into the community. Delivery systems have allowed people who in the past would not use an SSP because of the stigma associated with being known as a PWUD to have access to naloxone and other supplies to reduce their risks. One program representative told us:

> We did not have a full home delivery program in place and now people really, really like it, and it is allowed now, and I think our numbers have increased because of our ability to do home delivery. Any stigma that people felt coming into the office is now gone—because, if they do not feel comfortable letting me see their face, then we do not have to be face-to-face. Hopefully, at some point, anyone would get to the point that they would feel safe coming to us, but that is not the end goal. The end goal is just to continue to engage and keep people having access to what they need.

Mail-based distribution has also had multiple benefits for programs and participants. Programs that have implemented mail-based delivery are able to reach people in parts of the country that have extremely limited access to services. A program representative described the reach of their program now that they are mailing supplies:

> Mail based has been really great because we've gotten folks that have reached out to us from across the state, so we've mailed some stuff to… areas where programs don't exist. [As] a silver lining, I think it's allowed us to serve more people—at least different people.

Creating new partnerships with other community-based organizations has also helped reach different segments of the population who do not traditionally have access to SSP services. These collaborations allow for distribution of naloxone and sterile injection supplies to people who need them, and perhaps signal a change in the ways in which people working in abstinence-based programs are thinking about harm reduction interventions. One program representative told us about this type of collaboration:

> This is one of the cool things that has happened during COVID. Community groups that we've worked with before on certain things are now asking for safer injection kits and access to SSP, which has not happened before. Recovery centers that typically are focused on abstinence have reached out for safer injection equipment in addition to Narcan.

Use of telemedicine for buprenorphine treatment is keeping participants and providers safe by decreasing in-person visits. In addition, it is increasing the number of people accessing buprenorphine by breaking down barriers for people who in the past did not have access to substance use treatment. One program representative described how well this is working for one particular participant:

> He would probably never go to a group for 1 hour a week in person, that's just not his thing. He's a very real, honest person, and he's been ready for [medication-assisted treatment] for a while and he's known it and he's wanted it, but his social anxiety… got in the way. He's a loner like me, and he loves his virtual group. And what the program providers… have said—and they have been featured nationally for their model—is that people who have been in their groups prior, who would never say anything, are speaking out in these virtual groups and being heard and making a lot of progress.

Making programmatic change is often a very difficult, slow-moving, and time-consuming process. Nimbly making these drastic changes out of necessity has shone a light on the resilience and tenacity of SSP leaders and staff. Thinking about all the changes their program made and their ability to make these changes quickly, one program representative said,

> We changed. It's funny talking about it and saying, "Oh, yeah, we changed a whole bunch of things super-fast." I know I've talked with you before about trying to implement changes in the program and how sometimes it can take forever and be frustrating and not get off the ground—then talking about how all these things have changed really fast and recognizing that there is an enormous capacity for change within all of our people all of the time.

DISCUSSION

The COVID-19 pandemic represents an existential challenge to PWUD and the SSPs that serve them. The pandemic has transformed the nature of service provision for and with PWUD, not unlike the way in which the HIV epidemic led to the implementation of SSPs in the United States. One reason these organizations have been so committed and willing to make necessary changes despite the loss of resources is that they tend to be well connected to the communities they serve. Employees, volunteers, community advisory boards, and collaborators are often PWUD or people who have a history of drug use. Although the challenges of keeping program participants, staff, and volunteers safe from COVID-19 transmission have been significant, our data indicate that responding to the pandemic led to innovation in service delivery for interventions that focus on a separate, yet simultaneous health crisis in the United States—opioid overdose. For instance, SSPs that previously distributed a limited amount of supplies to participants have adopted "needs-based" distribution of naloxone and syringes that is more in line with evidence-based CDC guidelines and enables participants to do secondary distribution.[53–55] Pandemic requirements to minimize face-to-face interactions have led to the adoption of telemedicine approaches for enrolling participants in MOUD and to the mail-based distribution of supplies for participants. Last, new training platforms, such as on-line video sharing

platforms and other websites, have been used to provide information on overdose education and prevention techniques in this new era. We observed and documented the resiliency of SSP staff and volunteers as they faced unforeseen challenges. Over the past several months, they designed and adopted innovative approaches that are likely to remain important features of SSPs after the pandemic subsides.

Another key finding was the importance of staff and volunteer commitment in continuing to work at SSPs and to serve their participants. SSPs in the United States emerged from diverse social movements.[14,15] In the early years—the late 1980s and the 1990s—programs were typically run by volunteers, and many operated without legal sanction. SSPs historically have been underfunded,[56,57] significantly limiting service delivery reach and coverage, and that situation has worsened during COVID-19. However, the social movement commitments of SSP staff and volunteers appear to be intact. Just under half of the programs in the study sample were 100% volunteer run organizations. We document that paid staff continued to work when laid off and that a committed volunteer workforce was necessary to sustain many SSPs as funding became more unstable. It is reasonable to consider that funding might not return to pre-COVID-19 funding levels for some time, and this volunteer commitment will remain vital as the pandemic adversely affects local, state, and federal funding, along with philanthropic support.

Although staff and volunteers reported their commitment to service provision, SSPs found themselves short-staffed because of their commitment to their workers' safety. The loss of staff and volunteers means the loss of people who are not only engaging with participants but also are involved in fundraising, supply preparation (packing naloxone kits, packing safer injection supplies, bagging cottons), mailing supplies, moving inventory, setting up and taking down mobile service sites, and creating a community of mutual support and care—and at a time when additional staff are needed to help negotiate safety and maintain welcoming programs.

The incredible resiliency and innovation that SSPs have displayed amid limited funding and staffing are inspiring and encouraging, but the sustainability of relying on such an approach must be questioned. There have been a few opportunities for COVID-19 relief funding, including grants from The National Council for Behavioral Health; however, these grants were awarded to only 3% of the SSPs operating in the U.S.[58] Thus, it is imperative that federal, state, and local funding for SSPs be not only increased but also stabilized to allow programs to continue to provide needs-based naloxone. Stable funding would also give SSPs the capacity to develop the inner context of their organizations—the leadership, staffing processes, organizational culture and climate, and processes for improvement that are critical for sustained implementation.[59] Furthermore, health departments and funding agencies that have historically been rigid about how money is being spent, funding only staffing or office space, for example, or having restrictive naloxone or syringe distribution requirements, should allow for more flexibility to facilitate continued innovations in service delivery

These organizations also need sufficient resources to ensure that their staff, volunteers, and participants can receive appropriate mental health support to address the stress and trauma from responding frequently to overdoses. For many, this stress and trauma are compounded

by having close relationships and connections with the community.[60] These needs have only grown since the onset of COVID-19. In addition, the occupational health and safety of SSP workers needs to be considered as the COVID-19 pandemic has produced another layer of responsibilities (eg, sanitation and social distancing measures) and considerable stressors on a workforce already struggling to contend with limited resources and a worsening housing and overdose crisis since the onset of the COVID-19 pandemic.[59]

Adequate and flexible funding for these organizations is essential but must be balanced with the need for SSPs to have autonomy. Settings like Vancouver, BC, where harm reduction programming is rooted in grassroots activism, experienced an influx of funding from local and federal government beginning in 2008, professionalized harm reduction programming, and a "new regime of community care."[62] Increased government funding was tied to adopting policies and public health agendas that led to the loss of organizational ownership and the ability of individuals and organizations to improvise and adapt nimbly to changing contexts.[61,62] Thus, we must carefully consider the tradeoffs if increased government funding and support is accompanied with regulations that restrict operational independence of harm reduction programs.[61,63]

Finally, the waiver of the in-person requirement for buprenorphine inductions has allowed a dramatic change in the accessibility of buprenorphine treatment. SSPs reported that participants who would not have had access to MOUD before were now interested in and starting to access it. This development is important because recent studies have shown that buprenorphine treatment access has historically been concentrated among people who have private insurance, can pay out of pocket, and are white.[64] In addition to having ongoing relationships with people who use opioids and might be interested in buprenorphine treatment, SSPs reach a higher proportion of the African American community and provide access to key health care services for PWUD who are homeless, do not have health insurance, or do not access care in traditional health care settings.[65] The Ryan Haight Act exemption should be made permanent to allow increased access to MOUD.

Methodological limitations of this study include its small sample of SSPs in the United States. However, we have sampled from 7 of the 9 census regions in the United States and our findings are similar to other reports on SSP operations during the pandemic.[44] In addition, we are unaware of any challenges that would be unique to the 2 census regions where we do not have SSP representation that would not have also occurred in one of the 7 regions where we do have SSP representation. Also, all data are self-reported, which makes it subject to socially desirable responding and recall bias. While we conducted multiple interviews with some program staff, our analytical approach was cross-sectional and represents SSP challenges only during the first few months of COVID-19. Further study on changes over time and by region is needed to more fully document how the COVID-19 pandemic has affected these programs.

In conclusion, SSPs have not only continued to operate but, by providing needs-based and mail-based distribution of naloxone and safe injection supplies and new linkages to MOUD at higher volume through telemedicine approaches, they have innovated at an accelerated pace. These achievements have been accomplished with minimal staffing and diminished

funding. To ensure the sustainability of these new approaches, initiatives must create a supportive external context (federal and state policies, funding, etc.) that can support SSPs in the development of their internal context (organizational characteristics, characteristics of individuals) and sustain the innovations achieved regarding the delivery of naloxone and MOUD.

BACKGROUND

As COVID-19 accelerated throughout 2020, syringe service programs (SSPs) faced challenges necessitating programmatic adaptations to prevent overdose deaths, while simultaneously keeping workers and participants safe from COVID-19.

ACKNOWLEDGMENTS

Abbreviations:

CDC	U.S. Centers for Disease Control and Prevention
COVID-19	Novel coronavirus 2019
EPIS	Exploration, Preparation, Implementation, and Sustainment implementation framework
HCV	hepatitis C virus
MOUD	medications for opioid use disorder
OENDa	overdose education and naloxone distribution
PWUD	people who use drugs
SSP	syringe service program

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TRANSLATIONAL RESEARCH

The goal of this research is to inform SSP providers, Health Departments and policy makers about the on-going challenges faced and innovations implemented by SSPs during the COVID-19 pandemic. It also calls for increased funding and support for these innovative approaches and the organizations who provide these services.

AT A GLANCE COMMENTARY

Wenger et al.

Background

As COVID-19 accelerated throughout 2020, syringe service programs (SSPs) faced challenges necessitating programmatic adaptations to prevent overdose deaths, while simultaneously keeping workers and participants safe from COVID-19.

Translational Significance

The goal of this research is to inform SSP providers, Health Departments and policy makers about the on-going challenges faced and innovations implemented by SSPs during the COVID-19 pandemic. It also calls for increased funding and support for these innovative approaches and the organizations who provide these services.

Table I.

Locations of syringe service programs, by United States census divisions

New England	3
Middle Atlantic	1
East North Central	3
West North Central	1
West South Central	2
Mountain	4
Pacific	4

Table II.

EPIS domains, factors and operationalized definitions (50)

EPIS domain	Factor	Operationalized definition
Outer context	Service environment/policies	State and federal sociopolitical and economic contexts that influence the process of implementation and delivery or use of the innovation
	Funding	Fiscal support provided by the system in which implementation occurs. Fiscal support can target multiple levels (eg, staff training, fidelity monitoring, provision of the innovation or EBPs) involved in implementation and delivery/use of the innovation.
	Interorganizational environment and networks	Relationships of professional organizations through which knowledge of the innovation or EBP is shared, goals related to the innovation or EBP implementation are developed or established, or both
Inner context	Individual characteristics	Shared or unique characteristics of individuals (eg, provider, supervisor, director) that influence the process of implementation
	Organizational characteristics	Structures and processes that take place or exist in organizations that may influence the process of implementation
Innovation factors	EBP characteristics	Characteristics of the innovation to be implemented and fit to system, organization, provider and/or client

Abbreviations: EBP, evidence-based practices; *EPIS*, Exploration, Preparation, Implementation, and Sustainment implementation framework.