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Access to HIV, Viral Hepatitis, and Substance Use Disorder Treatment/Overdose Prevention Services: A Qualitative Analysis of Syringe Service Programs (SSPs) Serving Rural PWID

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Abstract

Background: Syringe service programs (SSP) increasingly serve rural areas of the United States, yet little is known about access and perceived need for their services.

Objectives: This paper presents the HIV and viral hepatitis prevention, testing, and treatment, and, substance use disorder treatment and overdose prevention services offered at three SSPs and which services their clients accessed. Across the three SSPs, 45 clients (people who inject drugs [PWID]), 11 staff, and five stakeholders were interviewed.

Results: Most clients ($n = 34$) reported accessing SSP services weekly and primarily for sterile syringes and injection-related supplies. All clients reported testing for HIV at least once, though concern for acquiring or transmitting HIV was divided between some or no concern. Most clients ($n = 43$) reported testing for hepatitis C virus (HCV). Concern for acquiring or transmitting HCV was also mixed. Vaccination for hepatitis A and/or B teetered around half (HAV: $n = 23$) to a third (HBV: $n = 15$). Most clients ($n = 43$) knew where to access the overdose countering medication, Narcan. Feelings about substance use treatment options varied, yet most felt not enough were available. Of note, not all assessed services were offered by the sampled SSPs.

Conclusions/Importance: The findings help us understand PWIDs' rationale regarding services accessed and preference for particular services. The need for some services was not

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Declaration of interest

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perceived by those at risk for the illness the services addressed. Discussing risk and providing tailored education is important when providing SSP services to rural residing PWIDs.

Keywords

Syringe service programs (SSPs); HIV; viral hepatitis; substance use disorder; overdose prevention; services provision

Introduction

Twenty percent of the U.S. population live in rural areas (U.S. Census Bureau, 2010). Rural Americans face an imbalance in economic and public health challenges. For instance, the poverty rate is higher and personal income per person lower in rural compared to urban areas. (Pender et al., 2019) The link between poverty and income to health disparities and suboptimal outcomes is well-established. (Chetty et al., 2016; Chokshi, 2018; Price et al., 2018) For instance, Long and colleagues (2018) found that income and poverty among people living in rural areas explained half of the variation in premature deaths experienced by rural populations. (Long et al., 2018) According to the CDC, “rural Americans are more likely to die from heart disease, cancer, unintentional injury, chronic lower respiratory disease, and stroke” than urban residents. (Centers for Disease Control & Prevention, 2017; Garcia et al., 2017) Contributing to unintentional injuries, rural Americans overdose and die from illicit drug use at concerning rates. (Cicero et al., 2014; Stewart et al., 2017) In addition, illicit drug use poses risks for infectious disease transmission, especially when administered *via* injection. (Centers for Disease Control & Prevention, 2018a)

Between 2014 and 2018, several HIV outbreaks occurred among PWID; in 2018, the U.S. reported an increase in the number of new diagnoses attributed to injection drug use (IDU). (Centers for Disease Control & Prevention, 2020a; Lyss et al., 2020) As concerning, acute viral hepatitis infections have also increased significantly among PWID. (Centers for Disease Control & Prevention, 2018b, 2019b, 2020b) In less than a decade acute hepatitis C infections, for instance, have more than tripled. (Centers for Disease Control & Prevention, 2019c) During November 2014–November 2015, as a forerunner of trends to come, 181 new HIV infections linked to injection drug use were reported in rural Scott County, Indiana, which had only 5 cases during 2004–2013. (Peters et al., 2016) To curtail the Scott County outbreak, Indiana state law authorized a syringe services program (SSP) to provide services necessary to mitigate risks, treat infections, and prevent overdoses. (Patel et al., 2018) Since the Scott County outbreak, the number of SSPs have increased substantially, although little is known about the services these programs offer and the clients they reach. (Des Jarlais et al., 2020)

SSPs can effectively address substance use disorder, overdoses, as well as infectious disease concerns by offering sterile syringes, vaccinations, overdose prevention medication, testing and linkage to infectious disease care and treatment, and substance use disorder treatment referral. (Centers for Disease Control & Prevention, 2019a) This range of services recognizes the synergistic effect of structural, social, and healthcare needs of the population that engage in IDU behavior. Wejnert and colleagues (2016) stated, “A need to address

injection drug use and associated risk behaviors exists because of several factors, including recent increases in heroin addiction and overdose...and the recent 364% increase of HCV [hepatitis C virus] transmission in rural areas, largely fueled by the current U.S. opioid epidemic,” (p. 7). (Wejnert et al., 2016) Illicit opioid use, especially when administered by injection, is of growing concern in context to HIV and HCV outbreaks in rural, predominately Appalachian, areas of the country. (Van Handel et al., 2016)

As overdose morbidity and mortality, substance use disorder, and infectious disease outbreaks afflict rural areas, SSPs are emerging to reduce disease burden among PWID living in these areas by providing access to needed services. (Fraser et al., 2019; National Academies of Sciences & Medicine, 2020) For instance, Bixler and colleagues reported that in Kentucky, North Carolina, and West Virginia there was an increase in operating SSPs from one to fifty in a four year period (2013–2017). (Bixler et al., 2018) Unfortunately, the number and catchment areas covered by SSPs serving rural residing PWID remains inadequate. (National Academies of Sciences & Medicine, 2020) Further, SSPs serving rural, Appalachia residing PWID have been reported as “under-utilized”. (Lancaster et al., 2020) Underutilization of SSP services indicates a need to understand why PWID decline particular SSP services.

The purpose of the study was to assess HIV, viral hepatitis, substance use treatment, and overdose prevention services offered by SSPs that serve rural populations. The study also assessed the SSP clients’ access concerns and perceptions of need for these services. This paper fills a gap in knowledge that is particularly concerning given how little we know about PWID living in rural areas vulnerable to outbreaks.

Materials and methods

During January–May 2019, we conducted semi-structured interviews with clients, staff, and stakeholders associated with three SSPs that serve rural populations: Cabell-Huntington Health Department’s Harm Reduction program in West Virginia (WV), the HIV Prevention & Syringe Exchange Program at the Louisville Metro Public Department of Health and Wellness in Kentucky (KY), also known as the “Exchange,” and the North Carolina Harm Reduction Coalition’s Rural Outreach program in Henderson, North Carolina (NC). The interview guides included questions on: (1) the range of SSP services offered and accessed; (2) concerns rural residents face in accessing SSP services; (3) provision and referral to HIV and viral hepatitis (A, B, and C) prevention, testing, and care/treatment services; (4) substance use treatment and overdose prevention services; (5) community concerns faced by PWID; and, (6) the effect the SSP and drug use has had on the client’s health and their lives.

We selected the SSPs based on three criteria: the SSP provided services for at least 12 months prior to data collection, the SSP served rural populations in or near the Appalachia region, and the SSPs had diverse operating structures. Regarding the latter, WV’s SSP was a “brick and mortar” site that integrated the host Health Department’s clinical services; KY’s SSP was a Health Department-based “brick and mortar” site that also provided syringe services *via* mobile units, yet did not fully integrate clinical services at any SSP site, rather referred SSP clients to other health department programs; and, NC’s SSP was a mobile-only

program with limited capacity to provide clinical services. All study participants had to be 18 years of age and speak English. Staff and stakeholders' eligibility criteria also included: working for or volunteering with a participating SSP or assisting the SSPs' clients through local efforts. Eligibility criteria for participating clients also included: living in a rural area (participant defined), injected drugs at least once in the prior 12 months, and accessed a participating SSP more than once. Study staff recruited KY and WV clients in the respective SSPs' waiting room as they presented for services; whereas, the NC SSP staff informed clients of the study during outreach and provided interested clients with a study number for follow up. Staff and stakeholders were screened by phone and interviews were scheduled prior to data collection as we sought diversity in the staff and stakeholder roles (e.g. SSP administrators, outreach workers, and social support providers) and history in working with PWID. Private space was provided at the SSP or in a local hotel to conduct confidential, in-person screenings and interviews. No participant-level data was shared with the host SSP, to protect the confidentiality of all participants. We set targeted subsampling for each site to recruit seven male clients and seven female clients, with a soft target for a transgender client. Interviewers completed specialized training on how to identify and handle clients who may be unable to provide voluntary consent as a result of drug use.

The interviews averaged an hour in length, and all participants as well as the participating SSPs were given a monetary token of appreciation. A non-governmental contract agency and its affiliates conducted the interviews, which were audio-recorded and transcribed word-for-word. A deductive codebook was developed with the themes defined by the topics covered and questions asked, e.g. *Reason for last HIV test*. Coding of transcribed narratives and response frequencies was completed after a three-round, inter-coder reliability process, which resulted in average Kappa scores greater than 0.8. We used NVivo[®] 12.0 to complete this analysis. The Centers for Disease Control and Prevention's (CDC) IRB approved the study protocol.

Results

Demographics

We interviewed a convenience sample of 45 clients across the three SSPs. Clients ranged in age from 24 to 61 years, with a mean age of 37 years (Table 1). Twenty-three participants identified as male, 21 as female, and one as transgender. Most ($n = 40$) clients identified as non-Hispanic, and White ($n = 40$). Nearly three quarters ($n = 32$) of the clients reported experiencing homelessness in the past year, and 19 of the 32 reported being homeless at the time of interview. Thirty-five participants reported being unemployed at the time of interview, and two-thirds ($n = 30$) reported having Medicaid or a state-based healthcare insurance coverage program. Notably, most ($n = 12$) of the NC clients reported being uninsured; North Carolina did not offer expanded Medicaid at the time of data collection. Less than half ($n = 18$) of the clients had a regular healthcare provider; of these, only 13 reported seeing their provider in the past year. Finally, 43 participants reported last injection drug use the day of or the day before their interview, and two reported last injection a few weeks prior.

Participating staff ($n = 11$) and stakeholders ($n = 5$) ranged in age from 24 to 72 years, with a mean age of 48 years (data not shown). Half ($n = 8$) identified as female, seven identified as male, and one identified as transgender. All 16 identified as non-Hispanic, with 12 identifying as White, three as Black/African American, and one as “Other”.

General service provision and access

The majority ($n = 34$) of clients reported using SSP services at least weekly. Another nine clients accessed SSP services at least once a month. All clients ($n = 45$) reported accessing the SSP for sterile syringes and injection-related supplies, e.g. sterile water, tourniquets, and alcohol wipes, as the primary reason for attending the SSP. Clients reported seeking services at their respective SSP because it was free, convenient, protects their confidentiality, and offers judgement-free services. As one KY client stated,

- it’s actually a safe way of making sure people’s not spreading diseases and stuff. ...They’re always asking me, like, ‘Are you okay?’ You know, ‘Do you need any recovery or anything like that?’ I never had that before, and I think it’s amazing.

A WV client noted, “I came in to do my needle exchange and they’re very helpful and courteous and they don’t judge you.”

Although transportation has been reported as one of the most common barriers to services among rural populations, NC’s SSP helps to alleviate this barrier. The NC staff travel to the clients and meet them at a place the client requests. One client noted the accommodating nature of the NC staff, “She [NC SSP Outreach Worker] came to the courthouse and sat outside and waited for me to get done so I could see her.” Alternately, WV and KY clients, staff, and stakeholders stated transportation remains the greatest challenge for their rural clients. A KY staff stated, “The transportation here in Louisville, if a person lives on the south end, trying to get down here would take them a couple of hours”. Interestingly, some of their rural clients adapted to meet their need as noted by another KY staff,

We’ve got a lot of them [clients] from the rural area in Indiana. They carpool, and I’m telling you what, they’ll pull up in a van and you should see – they all seem to know everybody. It’s really cute. I mean, they know. They’ve all talked... they all hop in the van and yeah, there will be seven or eight of ‘em, yeah. So, I think that they try to do that because some of ‘em don’t know who does what in their own little city because it’s tough... transportation is definitely the top barrier.

KY’s mobile units park at fixed locations, thus clients must travel to the mobile site for services. In WV, a cluster of HIV cases was identified among PWID at the time of data collection. Recognizing the importance of medical care to minimize disease transmission, a health department staff provided clients transportation to medical appointments; “... they literally send transportation to get me to my appointments. That’s awesome.”

Another barrier for rural-residing WV and KY clients was limited operating hours. Both SSPs were open weekdays during “banking hours”. A few WV clients and KY staff mentioned that extended weekday and weekend hours would ease this barrier. As one KY staff stated,

... we're open six days a week, and we have a variety of hours, but we can't assume that people who use drugs don't have a regular 9-5 job, and we're open 'til 6:00. But if I get off at 5:00, I mean, most of us don't walk right out as soon as we get off. And then if I have to fight traffic... to try to get downtown... and we close right on time, which means exactly at 6:00, on the dot, the door is locked.

In terms of operating hours, NC mediated this barrier by having Outreach workers available evenings and weekends.

HIV services

All 45 clients reported testing for HIV at least once in their lifetime (Table 2). Of the 27 offered testing at the SSP, 24 accepted the offer. According to WV and KY staff and stakeholders, their SSP or respective health department offers clients HIV testing as part of a screening panel (i.e. HIV, chlamydia, gonorrhea, syphilis, and hepatitis in WV; and, HIV and HCV in KY). WV and KY staff noted their respective panels are electronically tracked and offered to clients on a 3- to 6-month interval, though there was some confusion in KY about the frequency of the offer as well as the rate of acceptance. One KY staff estimated 50 percent of clients accepted an offer to test, while another staff reported that only 5 percent accepted the offer. Six KY clients reported having been offered HIV testing at the SSP, and seven reported testing at the adjoining health department. The NC SSP made a rapid HIV test available, yet limited numbers of tests hindered its reach. None of the NC clients reported testing through the SSP; they reported getting tested at a healthcare facility, e.g. doctor's office, hospital, or health department, or during an intake process at a jail/prison. Additionally, as seen in Table 2, concern with acquiring HIV was less frequently mentioned among the NC clients. Across the sites, reasons for testing included: it was mandatory as part of their incarceration, they received a gift card or snack as an incentive, it was free, it was part of a pregnancy panel, or offered by the SSP upon services initiation. While several clients also cited personal risk as their reason for HIV testing, nearly half of the sample ($n = 20$) stated they were not concerned about acquiring HIV. One staff member stated,

That's not really a priority for them right now. If you're in active addiction...you're not really worried about having testing done...I think in general, it's just like if we say, 'Come in for – you need to do testing.' It's like, 'Oh, I'm in a hurry. I don't have time.'

Three clients reported an HIV diagnosis, and all three were from WV. As noted, the WV SSP was responding to a cluster of HIV cases among PWID at the time of data collection and was encouraging all clients to get tested. All three participants living with HIV were linked to care through the SSP. Staff and stakeholders at the KY and NC SSPs reported that they were prepared to link clients to HIV services if, or when, the need arises.

We asked clients about their awareness of, interest in, and linkage to pre-exposure prophylaxis (PrEP) to prevent HIV. Over half ($n = 27$) reported no awareness of PrEP, 14 reported having seen a commercial for PrEP or had a vague recollection but reported no real understanding of PrEP, and four clients stated they were aware of PrEP. Only one client reported an interest in learning more and potentially starting PrEP (data not shown). At the

time of data collection, no study site offered PrEP, though the WV site planned a PrEP clinic through the SSP the following week.

Viral hepatitis services

Nearly half ($n = 22$) of the clients reported an HCV diagnosis, and all but two had ever been tested for HCV. As reported, the WV and KY SSP offered HCV testing as part of an infectious disease panel, and 12 clients reported that they had tested at the SSP. A majority ($n = 25$) reported their most recent test was in the past 12 months. Regarding concern with acquiring or transmitting HCV, the majority ($n = 24$) stated they were not concerned, and several reported that infection was inevitable. As one client stated, “I probably have it... my brother’s girlfriend has it. She’s been tested and she’s taking the cure now. And I’ve shared needles with her, so I’m sure that... (I have HCV)”. Another client stated, “everyone I know has it.” Of those who stated they were not concerned, they reported safe injection practices such as not sharing equipment, and being in a monogamous relationship, as reasons they did not feel they were at risk for HCV. This same reasoning was also found among those who were not concerned with acquiring HIV. Of the 22 who reported having been exposed to HCV, and two clients reported that their provider told them they had cleared the virus. Four of the 22 clients diagnosed with HCV reported clearing the virus through treatment. A primary reason for not initiating treatment among the other 18 clients was confusion about or the requirement to achieve sobriety to access treatment. A KY client stated, “Because I don’t want to go through all that trouble, taking that pill, then getting rid of hep C, and then coming right back and using. That’s a waste of everybody’s time”. A WV client responded, “I think at the time they told me how to be clean to get the medication for it (HCV). And I wasn’t ready to get clean”. Of note, in WV, at the time of data collection Medicaid barred people actively using drugs from accessing curative treatment.

Five clients reported having received a hepatitis A virus (HAV) diagnoses and six had been diagnosed with hepatitis B virus (HBV). Most clients ($n = 25$) reported receiving the HAV vaccine, and 15 reported receiving the HBV vaccine; there was some duplication in vaccination rates as some clients received the combine HAV/HBV vaccination series. Despite widespread outbreaks of HAV and HBV related to injection drug use, 20 clients reported no history or uncertainty about whether they had had a HAV vaccine and 30 clients reported no history or uncertainty about vaccinating for HBV. Only a minority reported receiving their vaccination through the SSP ($n = 11$).

Substance use disorder treatment and overdose prevention services

Client attitudes toward and experiences with substance use treatment varied by site, as did staff and stakeholder perspectives about the accessibility and effectiveness of available treatment options (data not shown). WV staff and stakeholders noted that the SSP employs recovery coaches who assist clients in accessing various local and regional substance use treatment programs; a staff member reported that the coaches could get a client into any type of program within 72 hours. “They’re skilled in motivational interviewing, can determine a person’s readiness, and can assist in moving that readiness father along the readiness scale”. In addition, WV staff and stakeholders noted the state operates a telephone based referral system; one participant stated, “West Virginia has a Help for West Virginia

[HELP4WV] number that anyone can call...they will let you know where the detox beds are, what's available, and then they will connect (you)". Alternatively, while many treatment options were available in KY and indexed on the state's online referral website, FindhelpnowKY.org, clients and staff complained about the accessibility and effectiveness of the options available. Staff and stakeholders from NC expressed the need for more affordable substance use treatment, specifically more medication for opioid use disorder (MOUD) and affordable short-term residential programs. Across sites, no one type of substance use treatment program was preferred by clients, yet most clients reported a history of one or more types of programs, e.g. MOUD, 12-step, residential, or outpatient.

Regarding experiences with and perceptions of substance use treatment, including MOUD, participating clients held divergent opinions. One KY client stated, "As long as I stay on that [Suboxone], I do good" suggesting Suboxone's ability to help with the recovery process. Yet, others felt a medication-based approach does not result in abstinence. As one KY client with a history of Suboxone and Methadone treatment stated, "I don't want to trade one drug for another drug. All it is, is a pharmaceutical drug that'll make you addicted, and I heard it's worse to get off Suboxone than it is heroin." More often, clients reported a history of various treatment programs, yet struggle with remaining drug-free. In support, one NC client reported,

I've done Suboxone... I wasn't successful at all with the Suboxone. But I was on the methadone for two years, and then I left the methadone... Then I went through an 8-day detox and then I got out of Henderson and I got clean for three years and moved back to Henderson and I probably wasn't even in Henderson two weeks before I relapsed and got back (on) the same path.

In terms of overdose prevention, the interviews focused on the availability and reach of Narcan (naloxone). Across sites, most clients ($n = 27$) reported having administered Narcan, and about half ($n = 20$) have had it administered to them, with some duplication in these responses. Almost all clients ($n = 43$) reported knowing where and how they can access Narcan, noting the SSPs as a primary source. However, receipt of Narcan administration training varied across sites. While only about half of WV ($n = 8$) clients reported they had received this training from the SSP, staff indicated that it was required for the client to complete training prior to their first distribution of Narcan. KY staff reported that rural clients were less likely than their urban counterparts to be present when Narcan training was available due to transportation challenges. In NC, none of the participants considered themselves as having been formally trained to administer Narcan, likely because staff reported informally training clients. One participant stated,

I told her [the outreach worker] I didn't know how to use it. Of course, my boyfriend told me, but I asked her because I'm pretty sure she knows a little bit more. So, I asked her, and she told me exactly how it went.

Finally, in addition to questions on services provision and access, interviewers asked clients about the effect the SSP has had on their health and life, overall. Overwhelmingly, clients endorsed the position that the SSP plays an important role in their well-being. For instance, a WV client stated, "(the SSP has been) a lifesaver...a blessing...you can get clean needles and you're not putting yourself or other people at risk." A KY client stated, "...they

provide me with everything that I need to keep clean...not re-using needles and taking the risk of getting hepatitis or HIV.” Prior to utilizing the SSP, clients stated they were engaged in needle sharing and would reuse needles innumerable times, placing them at risk for abscesses and blood-borne illness. As one NC participant noted, “before the needle exchange we had to go purchase ‘em [syringes] and wouldn’t run up there all the time like that, so we’d end up (re)using needles...” The client perspectives were supported by staff and stakeholders; for example, a WV stakeholder declared, “We’d be a very sick community without the harm reduction (program)... everyone deserves a chance, and everyone deserves the help that they need to get better.”

Discussion

Our findings illustrate that SSPs play an important services provision role among rural residing PWID. HIV outbreaks, increases in viral hepatitis diagnoses, and inflated rates of overdose affirm that access to sterile injection equipment, vaccinations, infectious disease testing, linkage to treatment and care are necessary to minimize the health consequences of injection drug use. (Atkins et al., 2020; CDC, 2020; Cranston et al., 2019; Scholl et al., 2019) While not all of these services were offered by the sampled SSPs, the structures are in place to ensure access to these services. The findings about recency of access, that most clients visited their respective SSP at least once a month, suggest that opportunities to encourage and engage clients in a full menu of services is promising. Of importance, overwhelmingly the clients held positive opinions of the SSP staff and recognized the benefit of the services offered. At the same time, when considering the specific services assessed, clients’ low levels of concern for acquiring HIV or viral hepatitis present an opportunity to ensure clients understand their risk and thus need for the respective services. For instance, nearly all clients reported testing for HIV and HCV at least once; at the same time, we found mixed results in terms of the clients concern in HIV as well as HCV transmission. These mixed results suggest that the clients’ understanding of their risk and the need to access consistent testing may require additional interventions such as motivational interviewing and educational efforts to pinpoint the nuanced drivers of client behaviors. In fact, we found some clients lacked an accurate understanding of how HIV and HCV are transmitted. Divergent findings for the Cabell County-Huntington, WV may reflect a response to a cluster of HIV cases among PWID in the area. Notably, more WV clients reported being concerned about acquiring HIV, having been tested for HIV at the SSP, and increased awareness of PrEP. These variations, as well as others, may result from enhanced efforts by the SSP to mitigate the cluster, as well as provide expanded wrap around services to ensure containment of synergistic health and living conditions. Additionally, several clients held fatalistic attitudes toward acquiring HCV, which may influence whether they get tested. Also, misunderstandings regarding HCV treatment present opportunities to better educate SSP clients on what their coverage plans will allow. Our findings regarding substance use treatment options also present a concern for effectively dealing with substance use disorder given many clients felt their options to be suboptimal. Yet, this finding falls outside the purview of SSPs given most link to treatment programs; they do not operate them. At the same time, co-location of substance use treatment programming and SSP services can reduce access barriers for SSP clients. In short, the findings presented uniquely contribute to

our understanding of which services are preferred by clients and the rationale that informs these preferences.

Limitations

Our findings are based on a convenience sample; thus, they are not generalizable to all sampled SSPs clients, staff, and stakeholders. In addition, drawing the sample from three select sites may not represent the clients, staff, or stakeholders of SSPs serving Appalachia, or more generally, rural residing PWID. The small sample of clients, staff, and stakeholders drawn from select SSPs may have resulted in missed opinions and experiences relevant to services provision among SSPs serving rural populations. In addition, eligibility criteria were self-defined. Of particular concern was the rural residency criteria. Multiple definitions of “rural” exist; we defined rural residency as not living in “an urban area or large city” based on the U.S. Census Bureau approach that “what is not urban—that is, after defining individual urban areas, rural is what is left,” (p. 1 of 8). (Ratcliffe et al., 2016) Given this imprecise definition, the sample may include residents of areas that might otherwise be experienced as urban or suburban. Also, at least one question, i.e. most recent HCV test, was not asked of all KY participants. This oversight in instrument administration resulted in missing data. This was a missed opportunity to inform services provision at locations beyond the SSP, which may contribute to an understanding of where PWID access services of interest. Despite these limitations, this study provides novel information that can inform provision of syringe services in rural and other areas. Our study participants universally described the value of SSPs to rural communities, their key role in providing access to services needed by PWID and a need to increase access to treatment for substance use disorder, testing for infectious diseases, and PrEP for those at high risk for HIV infection.

As HIV, viral hepatitis, and overdose morbidity and mortality plagues rural areas of the United States, ensuring access to necessary services to address these public health concerns remains of the utmost importance. Where available, SSPs are addressing many, if not all, of these needs. Unfortunately, the need for some services are not perceived by some of those at highest risk. Explicit attention to talking to PWID about their individual risk and providing tailored education about the potential for infection is important. At the same time, competing needs and structural barriers, such as SSP operating hours can prevent PWID from accessing essential services; these barriers could be addressed, if not mitigated. Furthermore, transportation was a key concern for rural residing PWID as stated by the clients, staff, and stakeholders interviewed. This structural barrier can be addressed by operationalizing mobile units, as done at the Louisville and Henderson sites, as well as expanding days and hours of operation, which would provide clients additional times to arrange transportation. Unfortunately, public transportation remains problematic for rural areas, generally speaking. What we know, from this study and the larger body of literature, is that rural-residing PWID trust the SSPs they access and SSPs can and do provide needed care, referrals, and support to limit the health consequences of injection drug use. Increased access to SSPs in rural areas improves the health of PWID and the communities in which they reside. If we are to address the medical and public health needs of rural America, it is important to include SSPs part of that discussion and provide the resources to offer the services needed by the people they serve.

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Table 1.

Client Demographics sampled from SSPs in West Virginia (WV), Kentucky (KY), and North Carolina (NC), 2019.

	WV N = 15	KY N = 15	NC N = 15	TOTAL N = 45
Age (years)				
Mean	36	36	40	37
Range	24–56	27–48	24–61	24–61
Age group 18–29	3	3	4	10
Age group 30–39	8	6	5	19
Age group 40 and up	4	6	6	16
Gender				
Male	8	9	6	23
Other ^a	7	6	9	22
Sexual orientation				
Straight/heterosexual	12	14	13	39
Other ^a	3	1	2	6
Ethnicity				
Non-Hispanic	12	14	14	40
Hispanic	3	1	1	5
Race				
White	13	13	14	40
Other ^a	2	2	1	5
Homelessness				
Homeless in past 12 months	15	11	6	32
Currently homeless	13	3	3	19
Employment				
Unemployed	14	10	11	35
Part-time	0	5	3	8
Full-time	1	0	1	2
Health insurance				
Medicaid	15	12	3	30
Uninsured	0	3	12	15
Currently have a regular healthcare provider				
Yes	7	6	5	18
No	8	9	10	27
Last healthcare provider visit				
	(n = 7)	(n = 6)	(n = 5)	
Past year	6	4	3	13
1-2 years ago	1	1	1	3
More than 2 years ago	0	1	0	1
Missing/Not asked	0	0	1	1
Recency of injection drug use				
Day of interview	9	13	11	33

	WV N = 15	KY N = 15	NC N = 15	TOTAL N = 45
Day prior to interview	5	2	2	9
Few weeks prior to interview	1	0	2	3

^aDue to the small sample size, to better ensure privacy and protect the identity of our participants we collapsed all socio-demographic categories that were not the most frequently selected into the aggregate variable, “other.”

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Table 2.

Clients' Frequency of Service Utilization at SSPs in West Virginia (WV), Kentucky (KY), and North Carolina (NC), 2019.

	WV	KY	NC	Total
Frequency of accessing SSP	N = 15	N = 15	N = 15	N = 45
At least weekly	15	10	9	34
Less than weekly, but at least once a month	0	4	5	9
Less than once a month/new client	0	1	1	2
HIV				
Concerned about getting/transmitting HIV				
Yes	11	9	5	25
No	4	6	10	20
Ever tested for HIV	15	15	15	45
Offered HIV testing at SSP	15	6	0	21
Ever tested at SSP/Adjoining Health Dept.	10	7	0	17
Diagnosed with HIV				
Yes	3	0	0	3
No	12	15	15	42
PrEP awareness				
Yes (degree varies)	10	3	5	18
No	5	12	10	27
Viral hepatitis				
Concerned about getting/transmitting HCV				
Yes	7	3	6	16
No	7	8	9	24
Missing	1	4	0	5
Ever tested for HCV				
Yes	15	14	14	43
No	0	1	1	2
Most recent test				
In the last six months	8	2	3	13
Six months to one year Ago	5	1	6	12
More than 1 year ago	2	1	5	8
Never	0	1	0	1
Missing	0	10 ^a	1	11
Tested for HCV at the SSP				
Yes	8	4	0	12
No	6	10	15	31
Don't know	1	1	0	2
Diagnosed with HCV				
Yes	12	10	3	25

	WV	KY	NC	Total
Frequency of accessing SSP	N = 15	N = 15	N = 15	N = 45
No	3	5	12	20
Diagnosed with HAV				
Yes	4	1	0	5
No	10	14	15	39
Don't Know	1	0	0	1
Diagnosed with HBV				
Yes	4	2	0	6
No	10	13	15	38
Don't know	1	0	0	1
HAV vaccination				
Yes	9	11	3	23
No	4	1	3	8
Incomplete series	2	1	0	3
Don't know	0	2	9	11
HBV vaccination				
Yes	6	5	4	15
No	7	4	2	13
Incomplete series	1	2	0	3
Don't know	1	2	8	11
Missing	0	2	1	3
Received HAV and/or HBV vaccination at SSP				
Yes	6	5	N/A ^b	11
No	9	10	N/A	19
Narcan				
Administered Narcan to others				
Yes	11	7	8	26
No	4	8	7	19
Had Narcan administered to you				
Yes	7	8	5	20
No	8	7	10	25
No/unknown experience with Narcan	3	3	6	12
Received Narcan training				
Yes	10	10	0	20
No	5	5	15	25
Received Narcan training at the SSP				
Yes	8	7	0	15
No	7	8	15	30
Know where/how to access Narcan				
Yes	15	13	15	43
No	0	2	0	2

^aIn KY, only HCV negative participants were asked when they received their most recent HCV test.

^bIn NC, HAV and HBV vaccination series are not offered by the SSP.

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