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Authors

Syvertsen, Jennifer L
Pollini, Robin A

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Syringe access and health harms: Characterizing "landscapes of antagonism" in California's Central Valley

Jennifer L. Syvertsen[a,*], **Robin A. Pollini**[b,c]

[a]Department of Anthropology, University of California, Riverside, 900 University Ave, 1320B Watkins Hall, Riverside, CA 92521, United States

[b]School of Medicine, Department of Behavioral Medicine and Psychiatry, School of Public Health, Department of Epidemiology, West Virginia University, PO Box 9151, 3606 Collins Ferry Road, Suite 201, Morgantown, WV 26506, United States

[c]Pacific Institute of Research and Evaluation, 11720 Beltsville Dr #900, Beltsville, MD 20705, United States

Abstract

Background: Sterile syringe access reduces injection-related health harms, yet access in the U.S. remains grossly inadequate. In California, syringe services programs (SSPs) are authorized mainly at the local level, and many communities remain underserved. State law also allows, but does not require, non-prescription syringe sales at pharmacies, but participation is low. We draw on the theoretical concept of "landscapes of antagonism" to examine how discordance between state and local decision-making contributes to uneven syringe access and health harms in California's Central Valley, where injection rates are high.

Methods: Our study took place in Fresno and Kern counties. We draw on participant observation and qualitative interviews with individuals who inject drugs and key informants to examine issues around syringe access.

Results: Overall, 8 key informants represented harm reduction, medical, and faith-based organizations. Among 46 people who inject drugs, mean age was 39 (range: 20–65), 37% were female, and 37% self-identified as Latino. About half of individuals at each site had ever successfully purchased from pharmacies, but limited locations and perceived judgement from pharmacy staff posed common barriers. There was no SSP in Kern County due to political opposition; Fresno's SSP has been run by volunteers for more than 20 years despite opposition, and recently gained authorization. Reflecting this disparity, all but two individuals in Fresno accessed syringes from the SSP, whereas only one person in Kern had ever been to an SSP. To fill gaps in access in both sites, individuals obtained syringes that were often already used from diabetics, friends, and people on the street, sharing and reusing syringes at dangerously high rates.

[*]Corresponding author. jsyverts@ucr.edu (J.L. Syvertsen).

Declaration of Competing Interest

None declared.

Conclusion: Landscapes of antagonism create syringe access inequities that threaten to exacerbate disease transmission and other health harms. Our study raises questions about accountability for the health of people who use drugs and suggests a need for political action.

Keywords

Syringe services programs; Nonprescription pharmacy syringe sales; Syringe access; Injection drug use; Landscapes of antagonism; California

The drug crisis in the United States has been accompanied by highly charged debates regarding the provision of evidence-based prevention interventions for people who inject drugs (Allen, Ruiz & O'Rourke, 2015; Heller & Paone, 2011; Katz, 2018; Rich & Adashi, 2015). Although rigorous science has established that sterile syringe access reduces the injection practices that cause drug-related morbidity and mortality, the vast majority of U.S. communities remain underserved or altogether unserved by syringe services programs (SSPs). Even as an increasing number of states allow non-prescription pharmacy sales of syringes, participation is often voluntary and inconsistent. The result is that largely preventable injection-related infections have increased as the U.S. drug crisis has worsened, particularly in nonurban areas; this includes increases in hepatitis B and C in the Appalachian region (Harris et al., 2016; Zibbell et al., 2015), increasingly common injection-related HIV outbreaks in rural areas (Centers for Disease Control & Prevention, 2018), and increasing incidence of injection-related endocarditis and soft tissue infections at sites across the country (Harris, Richardson, Frasso & Anderson, 2018; Phillips, Anderson, Herman, Liebschutz & Stein, 2017; Wurcel et al., 2016).

Given ongoing levels of drug use and increasing health-related harms, and armed with scientific evidence that syringe access saves lives, it is critical to further examine the barriers to establishing these lifesaving programs and the reasons underlying their differential availability. In this paper we therefore ask the following questions: Why does syringe access remain inaccessible and highly precarious across much of the U.S.? Moreover, what are the consequences when we fail to adequately address the health needs of people who inject drugs?

To offer theoretical insight into these critical public health questions, we draw on the concept of "landscapes in antagonism"(Newman, 2014) to suggest that uneven syringe access results largely from contentious interactions among multiple actors at federal, state, and local levels. In its original conception, landscapes of antagonism represent the "contradictory field of political forces" (Newman, 2014: 3297) in which neoliberal political projects are enacted, drawing particular attention to the "ambiguous and contradictory" (Newman, 2014: 3290) role of local governing authorities who are far from unitary systems. Here, we use landscapes of antagonism as a lens through which to view U.S. drug-related public health policy as a patchwork of laws that delegate considerable responsibility to individual local actors – politicians, healthcare providers, and citizens alike – to debate, enact, or contest the implementation of public health evidence to address drug harms within local jurisdictions. As a result, multiple actors who do not necessarily share the same ideas and values often work against each other in antagonistic ways that prevent broader level

policies from functioning as intended, or even being implemented at all, regardless of the state of science.

A closer reading of U.S. drug policies reveals how local antagonisms shape SSP availability. A 2007 U.S. Institute of Medicine report determined that there was consistent evidence to support the implementation of SSPs for HIV prevention (Institute of Medicine, 2007) and a wide variety of U.S. organizations including the American Medical Association, the American Public Health Association, and the American Bar Association recommend SSPs as part of a comprehensive effort to reduce the adverse health impacts of injection drug use. The current Surgeon General, Dr. Jerome Adams, supports SSPs, with the caveat that communities should decide whether a SSP is right for them. However, this qualified support gestures to ongoing antagonistic debates within local communities – which are comprised of multiple voices who rarely share one unified vision – about who decides if SSPs are "right" for them.

This localist perspective is a critical point, as SSPs are not operated or regulated at the federal level, but rather by state and local governments. While most states allow SSPs, state law often requires additional local government approval for these programs to operate, and there remain a small number of states where SSPs cannot legally operate at all. The result is that programs are inequitably distributed across the country; of the approximately 320 SSPs in the U.S., as few as 20% are located in rural areas and as many as 11 states do not have a single SSP (Des Jarlais et al., 2015; Henry J Kaiser Family Foundation, 2018). Limited funding plays a role in constraining these programs, as a ban on using federal funds to purchase injection equipment and laws in some states precluding expenditure of state funds on SSPs represent antagonisms among higher levels of authority. However, decisions regarding whether SSPs can operate in any given community generally hinge upon political decisions at the local level. As such, SSP coverage in the U.S. remains grossly inadequate, including the complete or nearly complete lack of access to sterile syringes in many communities across the country.

To help fill these gaps in syringe access, and to some extent circumvent local political obstacles, many states have established laws allowing retail pharmacies to sell syringes without a prescription (Centers for Disease Control & Prevention, nd). However, much like with SSPs, while these laws enable such sales they do not require them, and pharmacy participation varies widely. Syringe purchase trials document participation rates across the U.S. ranging from ~20 to 70% (Compton et al., 2004; Deibert et al., 2006; Finkelstein, Tiger, Greenwald & Mukherjee, 2002). Pharmacist surveys provide insights into refusing nonprescription syringe sales, including biases against people who inject drugs (Pollini, Rudolph, and Case 2015; Taussig, Junge, Burris, Jones and Sterk (2002)). These individual interactions represent points of antagonism, in this case preventing state laws from being realized at the local retail level.

Laws delegating decisions regarding lifesaving sterile syringe access to local politicians and private sector pharmacists have resulted in a complex patchwork of syringe availability across different sectors and geographies. In short, syringe access among people who inject drugs is determined largely by the geography of their lived experience. This situation holds

true even in “socially progressive” states like California, where SSPs are supported as a matter of state policy but landscapes of antagonism create significant health inequities around syringe access. In this paper, we elucidate these antagonisms and their impact in California’s Central Valley, a largely understudied and politically conservative agricultural region of inland California characterized by health disparities and limited access to health services (Huang & London, 2012).

Study setting

California officially began supporting SSPs in 1999 through a law requiring local county boards of supervisors or city councils to authorize SSPs prior to implementation. Political barriers at the local level subsequently led the state to add the California Department of Public Health and individual physicians to the list of SSP authorizing entities. Currently, California has about 50 SSPs, but coverage varies across jurisdictions (California Department of Public Health, nd), with noteworthy gaps in inland areas.

To further expand syringe access across California, Senate Bill 41 went into effect in 2012, allowing licensed pharmacies to sell syringes without a prescription. SB41 and its subsequent amendments enable adults ages ≥18 to purchase and possess an unlimited number of syringes for personal use when acquired from a pharmacy, physician, or authorized SSP. However, pharmacy participation in nonprescription sales under SB41 is voluntary and early demonstration projects showed significant geographic variation in participation (Siddiqui et al., 2015). Local health jurisdictions facing conservative politics, moral arguments about drug use, and opposition from law enforcement, politicians, and pharmacies faced particular challenges with implementation (Rose, Backes, Martinez & McFarland, 2010). Taken together with California’s experience with SSPs, evidence suggests that even well-intentioned state policies are differentially enacted and experienced locally, creating landscapes of antagonism in which uneven access to sterile injection equipment threatens to concentrate disease burden in already socially disadvantaged communities.

Unlike coastal California, which is generally politically liberal, inland California and the Central Valley are more politically conservative (McGhee & Krimm, 2012). The Valley also has a significant drug issues. It is designated as a High-Intensity Drug Trafficking Area by the U.S. Drug Enforcement Administration, as the Interstate 5 drug trafficking corridor running through the Valley transports heroin, methamphetamine, and cocaine from Mexico northward through California. In a study of 96 U.S. metropolitan statistical areas (MSAs), the Fresno MSA ranked second (2.95%) and Bakersfield MSA ranked fourth (2.40%) in prevalence of injection drug use (Brady et al., 2008). Our research therefore focused on Fresno (population ~510,000) in Fresno County and Bakersfield (population of ~364,000) in Kern County, which represent regional urban hubs. Our qualitative work suggests that some young heroin injectors here “got hooked” on prescription opioids and transitioned to injection; however, heroin has an entrenched history and methamphetamine injection is often an intergenerational phenomenon, particularly in rural areas (Syvertsen, Paquette, and Pollini 2017).

Despite alarming levels of injection drug use, syringe access in Fresno and Kern counties remains limited. As of October 2019, there is no SSP in Kern County, and only one SSP in Fresno County, which operates for two hours per week. Fresno's is the only California SSP authorized by a local physician – the result of ongoing local political opposition to the program. In addition, at the time of our study the Fresno SSP was the only regularly operating SSP in Central California. Pharmacy access in these counties is also limited; in a syringe purchase trial of all 248 retail pharmacies in Fresno and Kern counties we found that only 21% sold nonprescription syringes (Pollini, Rudolph, and Case 2015). A subsequent survey suggests that pharmacists who refuse to sell syringes are either unaware of the law or hold biases against people who inject (Pollini 2017). Our additional qualitative work within this region suggest widespread stigma and discrimination impede access to a range of health services for people who use drugs (Paquette, Syvertsen, and Pollini 2018).

Methods

The current analysis draws from fieldwork conducted in 2015 as part of a larger study on SB41 implementation. Our analysis includes participant observation and qualitative interviews with 46 individuals with histories of injection drug use and 8 key informants who provide health services. Study protocols were approved by the IRB at the Pacific Institute for Research and Evaluation.

Data collection

We used targeted and snowball sampling (Schensul, LeCompte, Trotter II, Cromley & Singer, 1999) to recruit people ≥18 years-old who reported past-year injection. In Fresno, we worked through SSP contacts and local health agencies to initiate recruitment. About onequarter of the sample was recruited from the SSP and another local services agency, while the rest were referred by participants. In Bakersfield, we used street-based recruitment in known areas of drug use and worked through local health agencies, who referred just over half of the participants. We purposefully constructed our sample (Johnson, 1990) for variation in gender, age, drug use (heroin vs methamphetamine), and residence (urban vs rural county). The authors, who have public health and anthropology backgrounds and decades of collective experience in drug-related research, conducted all digitally recorded interviews, which typically lasted 60–90 min (range: 45 min to four hours).

Interviews covered local drug market characteristics, drug use histories, injection practices, and healthcare experiences. Specific to this analysis, questions covered where participants accessed syringes, including prompts about pharmacy purchases, attending SSPs, other sources of syringes, and related questions about syringe sharing and reuse. We also collected basic quantitative socio-demographic data. We conducted interviews until we reached saturation, meaning that interviewers heard similar themes repeated across interviews and determined that additional interviews would not provide significant new insights (Guest, Bunce & Johnson, 2006). Participants were reimbursed $50 for their time and received harm reduction materials and referrals.

Key informants were selected based on their knowledge and experience providing drug-related services. Interviews covered the social and political climate of the Central Valley,

experiences in health services provision, perceptions of local drug use, syringe access, and drug-related harms. Interviews were conducted with a range of individuals to provide key contextual and historical information about drug use and service delivery in the region. Key informants were not reimbursed. Finally, participant observation included volunteering at the Fresno SSP, taking part in community activities in Bakersfield involving outreach to people who use drugs (e.g., free meal provision, faith-based services), and recording daily fieldnotes to gain insight into the local contexts.

Data analysis

All interviews were transcribed verbatim and verified by a research assistant (RA) using a structured protocol. For the interviews with people who inject, our team-based analytical approach began with writing interview summaries to begin identifying major themes. Building a codebook and coding the data started with reading through the same selected interviews and independently generating an initial list of themes and a preliminary coding scheme based on the primary areas of interest in the interview guide (deductive) and emergent themes (inductive) across the interviews (Ryan & Bernard, 2003). The team met to discuss and refine a coding scheme and draft a codebook. Codes were arranged in a hierarchical structure by parent codes (e.g. based on major themes in the interview guide, like drugs) and corresponding sub-codes under each theme (e.g., drug market, transitions to injection). One RA coded all transcripts in consultation with the lead author, who checked for coding consistency.

The lead author examined interviews broadly coded for “syringe access (e.g., pharmacy, syringe exchange, other),” “syringe sharing,” and “syringe reuse.” First, we identified and quantified authorized and unauthorized sources (i.e. by each site, how many participants reported accessing syringes from all different sources). Next, drawing on a modified constant comparison method, we wrote memos on similarities and differences in syringe access across the two study sites to help explain variation and examined consequences of inadequate access through patterns of sharing and reuse.

Given the small number of key informant interviews, we did not formally code these interviews. For this analysis, the first author read through the interviews as well as her fieldnotes, and wrote memos to guide the interpretative analytical process.

Given the emergent importance of local actors in shaping syringe access across all sources of data, we scoured the literature for other examples of work that highlighted the local in political decision-making processes and found that landscapes of antagonism resonated with our findings. Our results are presented according to the frequency of sources by which participants attempted to obtain syringes, followed by a discussion of the consequences of limited access. In each section, perspectives of key informants contextualize and corroborate participant voices, and throughout, we draw attention to how points of antagonism influence health behaviors and outcomes. Representative quotes highlight dominant themes and all names are pseudonyms to protect confidentiality.

Results

Sample characteristics

Our 8 key informants represented harm reduction, medical care, drug treatment, HIV services, and faith-based organizations. We did not collect socio-demographic characteristics. Among our sample of 46 people who inject drugs (22 in Fresno County, 24 in Kern County), the mean age was 39 (range: 20–65), 37% were female, and 37% self-identified as Latino. In terms of recent (past month) injection drug use, 72% reported heroin, 48% methamphetamine, 20% cocaine, and 2% prescription opioids. Characteristics across the two counties were similar in age, but the Fresno sample had a higher percentage of male (64% vs 58%) and Latino (50% vs 25%) participants. The Fresno sample also reported higher rates of recent injection drug use, as several participants in Kern County ($n = 5$) did not report past month injection due to recent recovery efforts. Below, we outline the most common sources of attempted and successful syringe access and examine related health consequences.

Syringe access from pharmacies

About half of individuals at each site had ever successfully purchased syringes from a pharmacy. Pharmacies were a more important source in Kern than Fresno, owing to the lack of a SSP in that county. Nonetheless, participants discussed multiple purchase barriers including inconvenient locations, perceived judgement from pharmacy staff, not having a valid ID, and cost. Most importantly, individual pharmacists created antagonisms when refusing to sell to people who use drugs; this shaped both current and future purchase attempts, as individuals did not want to repeatedly subject themselves to perceived judgment for trying to manage their health. Participants across both sites reported that only certain pharmacies sold nonprescription syringes, with sales perceived as limited to people with valid IDs who did not “look like a drug user.” Miriam, 36 and from Bakersfield, said that purchasing in pharmacies is not always easy:

> Some people are like “Walgreens will sell you them.” Okay, not all Walgreens will because they are like “Oh, you are a junkie, we are not selling you any rigs [syringes].”

Although it is unclear if providers actually thought Miriam was “a junkie” or it was her perception of their reaction, ultimately the result was the same: an antagonistic landscape of pharmacies served as a barrier to sterile syringe access. Key informants corroborated perceptions that sales “are based on looks” and that widespread provider stigma and judgment prevents people from purchasing syringes:

> In other pharmacies, people [who use drugs] are still afraid, ‘if I look a certain way they’re going to turn me away.’ And they have. They’ve turned them away. Now the other thing that I’m finding out is they’re telling them they don’t have that particular size of needle. We don’t have any more of those, this is what we have. To discourage people from buying.
>
> …it would be beneficial to have more folks in the medical field being a little more sympathetic towards clients. There’s a lot of stigma involved.

In addition to outright denial of syringe sales, injectors were antagonized during their purchase transactions, which led them to feel embarrassed, fearful, and ashamed. Jacob, 25 and from Bakersfield, has tried to purchase syringes at multiple pharmacies but has been denied. He now has to go to certain pharmacy locations in the "ghetto," but the process has been so unpleasant that he often resorts to reusing his syringes instead:

> Well, it's already kind of nerve-wracking going in there [a pharmacy] … Honestly, I feel like sometimes the people will give you a dirty look, and be like, "No, we don't have any." Just because. I honestly feel like they're just saying that sometimes because they know you're just going to do drugs and stuff. But then, at the ones in the more ghetto areas, they'll always sell them to you. And it just depends, sometimes they have the really short syringes, which is really hard to hit. So then you just won't get them. You just try using old dull syringes. And also you have to have your ID. For some reason a lot of people don't have IDs.

Importantly, an ID is not legally required to purchase syringes in California, yet pharmacies frequently asked for IDs as reported both in our qualitative interviews and prior purchase trial.

Geographic barriers provided an additional deterrent for individuals in rural areas. Celeste, age 21, lived in a small town in Kern County, from where she drove almost 2 h to Bakersfield to buy at Walgreens. Although she has been hassled and almost denied, she was sent to purchase syringes by her group because she did not "look like" a drug user:

> There's no syringe exchanges out there…. I know at Walgreen's out here you can go get syringes just with an ID, so I was taking multiple trips back and forth from [rural town] trying to help people with their syringe exchanges, and stuff. Everybody was doing it. Everybody's an IV user out there and there's no way to get syringes unless you have a prescription for diabetes, which there really wasn't that many… I would drive out to Bakersfield and go to the Walgreen's, and sometimes they [pharmacy staff] acted all iffy and crazy about it.

Thus, despite providing an important source of syringes (at least occasionally) for half of our sample, individuals reported multiple barriers to pharmacy syringe access. Highly localized and what one participant called the "arbitrary" implementation of SB41 reflects how powerfully individual provider autonomy shapes public health and contributes to constructing broader landscapes of antagonism.

Syringe services programs (SSP)

The SSP landscape in Fresno County differs significantly from Kern County, offering an important view of the antagonisms that politicize health initiatives. Fresno's SSP was started by local citizen activists contesting landscapes of antagonism. In addition to supplying syringes and other harm reduction materials (e.g., cookers, cottons, condoms), the Fresno Free Medical Clinic was established in 1998 by a local physician activist and provides medical care out of a renovated 1960s school bus at the SSP site. For much of its history, the Fresno SSP has operated without authorization from the county and volunteers have been subject to arrest. Even though activists described presenting evidence of SSP effectiveness to

the Fresno County Board of Supervisors, it was not until 2008 that the board authorized the SSP, only to rescind its authorization in 2011. As described by one informant: “It was so gross what our board of supervisors was doing. They criminalized us … we’ve been criminals for most of our 20 years; 17 of those years, we were criminals, to provide healthcare.”

Activists pressed on anyway, eventually lobbying the state for legislation allowing the state health department to authorize exchanges where local political opposition otherwise will not allow it. The Fresno SSP now legally operates under a California Health and Safety Code permitting physicians to furnish syringes without a prescription, “making the [county] supervisors irrelevant.” Garnering state-level support is critical in this context because of gaping sociopolitical disparities in inland California:

> … when the state passes legislation, sometimes they need to take it out of local control. Especially when it comes to health issues. This is a health issue, this should not be a political issue… a good part of the state can just say “No, we don’t want to do that, take a hike.” San Francisco and LA can all have their big programs, but the Central Valley gets left behind a lot of times.

Operating in an empty cul-de-sac every Saturday afternoon for two hours, until recently the Fresno SSP was funded solely by private donations procured by a volunteer executive director, which limited its ability to expand. Nonetheless, the program distributed almost 1 million syringes in 2017, demonstrating the high level of need in this underserved region. Key informants acknowledged ongoing SSP limitations despite the high volume of services they provide; in addition to being an all-volunteer organization, they continue to operate within antagonistic local political systems, where they need “more local buy in, from politicians, law enforcement. We’ve got great support of the state level, we’ve got great networks with other exchanges around the state. We’re doing good on those aspects, but just getting the local buy in…” Another informant concurred: “But it’s not enough. We really need more ongoing government help. It would be really nice.”

Despite these limitations, all but two individuals in Fresno reported using the SSP. For clients like Emilio, age 47 and from Fresno, the SSP “thankfully” served as his primary source for syringes after not being able to access from pharmacies where it was “embarrassing” to even try:

> So the only place that we found to get them is the exchange. Otherwise, you’re asking people. You know, mostly always, we’re asking different people that were doing it. Obviously, most people are doing heroin, but …. hitting them up or using the only ones you have and use them over, you know. But it’s hard to do stuff like that, you know, because you want to be careful and not use other people’s stuff.

In contrast to Fresno, where long-term operation of a SSP was made possible by activists willing to garner the resources necessary and risk arrest, landscapes of antagonism have prevented anyone in Kern County from stepping in to contest the local conservative politics. One informant described SSP as a “hot potato” that no one wanted to take responsibility for, often because people do not have the political capital or feel their jobs might be in jeopardy:

> … for things like syringe exchange, everybody wants it to happen but nobody wants to take the ball and run because it could affect either their regular job or other things that they do. Just because it's seen as very negative. The people, even at public health and mental health who say, you know, it's a really good idea, it's a good harm reduction, they don't have the political clout to make it happen.

Informants from faith-based organizations struggled with SSP although they ultimately favored the idea. According to one individual: "I mean, I won't personally do it, but anybody that is trying to help do that to stop the disease, I'm good with that." Given the inability or unwillingness of many organizations to start an SSP, one informant said that it is left to the realm of volunteers because "when you have people that are volunteers, who are passionate, they can do whatever they want."

In the absence of programming, only one person in Kern County had ever been to an SSP and several others had never even heard of the concept. For those without SSP access, we asked for their thoughts on implementing such a program. While most thought it would be useful, a few were skeptical and said it would take considerable effort to gain trust. Overall, most thought a SSP would improve syringe access and rid public spaces of discarded syringes. Kelly Ann, 30 and from Bakersfield, noted her support:

> I would use it, definitely would use it. I think it would make other people use it, and maybe not throw [syringes] in the trash or on the road because they are not going to throw something on the road if they're going get something back for it.

Karen, 33 and from Bakersfield, also said SSP is "absolutely" needed due to widespread injection drug use:

> There's so many people here that need that. In [area of Bakersfield] alone, it would save thousands, hundreds of people's lives. The drug epidemic in this county alone is just out of control. It's spiraling, spiraling. It's not just in the bad neighborhoods anymore…I've been in jail with girls from [wealthy area] that are the cheerleaders. That are hooked on heroin, that got hepatitis and this and that. It's everywhere here…It [an SSP] would do this place so much justice.

Other sources of syringes: diabetics, dealers, and dumpsters

Given the antagonisms operating between state and local actors and subsequent constraints on syringe access, individuals were forced to access syringes from informal channels including diabetic individuals, dealers, friends, and other street-based sources. Key informants also knew about these alternative sources:

> Sometimes they purchase them, sometimes they can get them from whatever, for free, or whatever. Sometimes they have a source where they'll dig syringes out of a trashcan, where they know a diabetic lives someplace. Hopefully, they're sterilizing them properly, but studies show that they're not always sterilized properly.

Circulation and uncertainty emerged as themes around informal syringe sources; in many cases, these syringes were recirculated among multiple injectors who could not be sure where they came from or how many times they had been used. While syringes were often sold in unopened packages, sometimes they were sold individually, and some participants

admitted to selling “one timers,” or syringes used once before. While informal sources were common across both sites, in the absence of an SSP, they played a critical role in Kern County.

Diabetic individuals were a particularly important source in Kern, where nearly half of the sample accessed syringes from this source. Bryan, 22, talked about accessing syringes from diabetic individuals on the street. He discussed the circular nature of syringes passing from source to source:

> There’s a lot of people out on the streets that have diabetes. I mean, there’s lot of people on the street I’ve noticed with diabetes. A lot of them that are heroin addicts, they will use their syringes not only for insulin, but for their heroin. Once they’re done with them, they will give them, the ones that they’re not using anymore, to someone. It’s kind of like a trade. They’re getting passed on. A lot of times, I’ll get a syringe that’s been who knows how many times it’s been passed on from person to person. All the numbers are completely worn off…The syringe will be like all bent, reshaped.

Karen has also traded drugs with diabetic individuals to get new syringes, and in turn, sometimes gave away her once-used syringes to other people who bought drugs from her:

> A lot of the times when I would sell a bag of dope, a lot of people would be like, “Do you have any rigs that you’ve used?” They would be happy as Christmas if I’d give them one of my rigs that I used once.

Several others in each site reported paying extra for a syringe with their purchase of drugs from a dealer. Marcus, a 25 year-old from Fresno, sometimes misses the SSP and relies on his dealer for syringes. Otherwise, he has to turn to a “few shady bricks” in Fresno’s Skid Row areas where people sometimes pull a syringe out of their back pocket to sell. Although he cannot be certain where the syringe came from, he has been “willing to take that risk” out of limited options.

Constraints on legitimate sources has created an underground economy in which individuals charge significantly higher prices than what syringes cost at the pharmacy. Prices typically ranged from $1 to 2 per syringe, which is far more expensive than our pharmacy purchase trial median price of $3.19 for a 10-pack. Zaida, 25 and from Fresno, said the SSP made her drug use “less scary,” and she sometimes gave away or sold syringes from the SSP to others need:

> … if I have extra, I’m more than happy to give people rigs or, you know, sell them to them if I’m hungry or if I need a dollar or two… Like, if I’m not doing it [selling syringes on the street] somebody else is.

Finally, several participants in Kern reported other less common sources of accessing syringes, including dumpsters, public parks, flea markets, traveling out of state, and from parents working in a healthcare field. Bryan, who accessed syringes from diabetic individuals off the street, noted that finding syringes in public spaces was a source for many street-based users like himself:

> … people are going and they're finding syringes in the trash. They're finding a whole bunch of broken syringes and piecing them together. They're getting the [public] bathroom water and stuff like that to inject with and sharing syringes. That's highly common. Yeah, I've done it. Everybody does it. It's out of necessity really.

While obtaining syringes from the trash was not the norm in our sample, Bryan suggests that is not uncommon. His story demonstrates the lengths that individuals will go to access not only sterile syringes – but any syringe at all – in environments where antagonisms contribute to limited sterile syringe access.

The fatalism of limited syringe access

Across our sample, most individuals were conscientious about their health, knew the risks of sharing, and preferred not to share, yet their options were often constrained by landscapes of antagonism that impeded sterile syringe access. Multiple individuals, particularly younger injectors and those in Fresno, said they were "OCD," "germaphobic," and called sharing "gross." Contrary to stereotypes, sharing was looked down upon and viewed as a last resort.

We heard somewhat less about sharing in the Fresno site, where HIV/HCV knowledge was high, compared to Kern County. In Kern County, a sub-set of individuals shared fatalistic perceptions that "everyone" was already infected HCV, which shaped their sharing practices. Jimmy, age 48, had HCV that eventually cleared, but below recounts conversations "playing around" with friends in which he made light of sharing in the context of untreated HCV:

> A couple times, I was like, "Hey, you got a new syringe?" "No, but I got Hep C, they told me." "I don't give a shit, I've got Hep C, too, shit. So we'll make a cocktail!"

Even though Bryan, who accessed syringes on the street, was much younger than Jimmy, he shared a similar sense of fatalism that "everybody" had HCV:

> Pretty much everybody I know has it, but they don't care because, like I said, are you going to risk being sick or are you going to get high? We call it feeling normal or going to work. Like I said, that's one of the choices that you make. Here, you can use this [a used syringe], but that always comes with, "You can use this, but I have hep C." "Oh, okay, that's cool. I have it, too, already," so it doesn't even matter.

Importantly, lack of adequate syringe access does not just manifest in syringe sharing: we also documented tremendous levels of syringe reuse across both sites. Participants reused syringes anywhere from twice to "20 times" to "until the syringe comes off and sticks in my arm" or "until they don't work." Re-sharpening syringes on matchbooks was also highly common. In Bakersfield, individuals shared especially dangerous stories of excessive reuse. Derrick, age 36, represented an extreme case:

> We've taken matchbooks and try to get them sharper because our arms were so jacked up. Yeah, it was working fine, but the syringe is so dull and messed up that it's not doing what it is supposed to do. I've gotten knife sharpeners and taken them to them. Even a Dremel [rotary tool] once. We have hot glue gunned when the

> plunger was broken, because we have used it so many times and hot glued it together. Even taken a lighter and just tried to glue it back together. It still breaks. It is in your arm and you are like “Crap, am I going to get it in?” So there has been a couple of times where the plunger is broken and I have had it in my arm. It took me a couple of times to get that one, so we grabbed a piece of a twig that … It was really iffy, but it fit through the hole of the rig to where I could get it to push the rest of the plunger in so I could get the rest of my shot, because I wasn’t going to waste it. It is all I had.

In sum, inadequate syringe access resulting from landscapes of antagonism created scenarios in which people had little choice but to share and reuse syringes, putting them at risk of health harms and creating a sense of fatalism about their health.

Discussion

Landscapes of antagonism create the conditions that perpetuate a drug crisis of our own making. We have long known that access to sterile syringes reduces syringe sharing and reuse and curtails injection-related health harms (Aspinall et al., 2013; Fernandes et al., 2017). However, even as progressive states like California enact legislation to expand access, “landscapes of antagonism” prevent state laws from fully reaching their potential to ensure the public health. While our evidence illustrates how landscapes of antagonism create precarity in syringe access and exacerbate inequities in the Central Valley, our results have broad applicability to other locations facing similar antagonisms. Our analysis lays the groundwork for a critical scholarship demanding greater accountability to ensure access to these lifesaving public health services.

Landscapes of antagonism reveal how complex negotiations between multiple actors make a difference in how syringe access is enacted locally. Our work reveals a highly contested process not only in terms of state versus local politics, but also within local arenas of power that include politicians, healthcare providers, and ordinary citizens. Some local actors are social justice advocates, others are obstructionist, while others may wish for change but are unwilling or unable to champion the cause (e.g., because they fear losing their job). All of these actors differentially shape local outcomes in ways that by no means ensure that broader level (i.e. federal or state) policies such as non-prescription pharmacy sales and SSPs operate as intended. Instead, as the system is currently devised, drug use continues to be treated as an exceptional health condition, often leaving legislation in the hands of local actors who, as one key informant pointed out, “don’t necessarily have the expertise in the medical field.”

Our study draws attention to several public health implications. First, findings suggest that the intention of SB41 allowing non-prescription purchase of syringes in pharmacies is having limited success. An increasing number of states allow syringe sales in pharmacies, but negative provider attitudes towards people who use drugs is a key barrier (Chiarello, 2016). Nearly half of our sample tried to obtain syringes from a pharmacy, many of whom engaged in interactions with providers that left them feeling stigmatized and discriminated against for “looking like a drug user” (Davidson et al., 2012; Pollini et al., 2011). Some

participants gave up entirely on pharmacy access rather than risk continued exposure to social harm. Efforts to educate about the law and promote a humanized understanding of drug use, including how syringe access can mitigate harm, are urgently needed in pharmacy contexts.

Second, SSPs are a critically important but still underdeveloped resource to meet demand for sterile syringes. Landscapes of antagonism across California reflect broader trends that SSPs operate in urban and socially progressive areas (Allen et al., 2015; Heller & Paone, 2011; Rich & Adashi, 2015), even though injection drug use is expanding into non-urban territories (Paquette & Pollini, 2018). In the case of Fresno, which finally received authorization from state rather than local government, the SSP has been driven by citizen activists who for more than two decades have navigated antagonistic relationships with local politicians unsupportive of expanding services. The results are critical, as even operating just two hours per week the program distributes one million syringes annually.

In Kern County, where SSP is a “hot potato” no one wants to risk starting, access to syringes are constrained by a largely unsupportive political environment. Similar debates are ongoing nationally (Allen et al., 2015; Rich & Adashi, 2015), where local decision makers have been reluctant or even actively resistant to establishing these programs. A high profile HIV outbreak in rural Scott County, Indiana, eventually forced then-governor Mike Pence to declare a public health emergency after prayerful contemplation to enact a temporary SSP that contained the outbreak (Strathdee & Beyrer, 2015). This outbreak drew attention to the vulnerability of non-urban areas and shortly afterwards, the CDC released a report naming the 220 counties most at risk for HIV/HCV outbreaks linked to injection drug use (Van Handel et al., 2016). However, a recent analysis found that as of 2018, only onequarter of those counties (47/220) had actually implemented a SSP (Kishore, Hayden & Rich, 2019). Even in rural Indiana where the Scott County program was effective (Patel et al., 2018), two nearby SSPs have since opened and closed due to county-level political leaders’ moral opposition, including a county commissioner who evoked a Biblical passage about the “wicked” needing to turn from their ways (Rudavsky, 2017). In West Virginia, with arguably the worst drug-related health outcomes in the country, an SSP was recently shut down due to similar local political opposition, including a mayor who called harm reduction a “mini-mall for junkies” (Pollini, 2019). In Orange County, California, a judge granted a county injunction to permanently close the SSP in 2018, even though the Orange County Health Care Agency was awarded $800,000 for HIV prevention efforts from the state Department of Public Health, who strongly encouraged them to use the funding in part to support their local SSP (Orange County needle exchange program, nd). Our results from Kern County suggest how landscapes of antagonism have stalled efforts to start a SSP, which profoundly shapes syringe access. As a result, individuals obtained syringes from potentially dangerous sources. Taken together, the evidence suggests the importance of state-level intervention in expanding services across local geographies.

Landscapes of antagonism create the conditions that could ultimately reverse decades of declining HIV incidence among people who inject drugs (Wejnert et al., 2016). Although HIV has overall remained low in the Central Valley, constrained syringe access led to high levels of sharing and shaped fatalistic attitudes about “everyone” having HCV, which could

be a harbinger for explosive new HIV epidemics – particularly in nonurban areas (Paquette & Pollini, 2018; Van Handel et al., 2016). Infections, abscesses, wounds, and other illnesses from inadequate access also reinforces stigma, discrimination, and fatalistic risk behaviors that further marginalize individuals.

Viewing syringe access through the lens of landscapes of antagonism highlights the "ambiguous and contradictory" role of local actors (Newman, 2014: 3290) in shaping the health and welfare of people who inject drugs. These landscapes also obfuscate bigger questions for public health, including: *who should ultimately be held accountable?* In other words, should we continue to enable autonomy in local decision-making or should higher levels of government and public health authority assert control? Should the success of an evidence-based policy to address drug harms rest entirely on the efforts of social justice activists and volunteers?

As it currently stands, syringe access in the U.S. is based on where one lives instead of scientific evidence. Reflecting broader neoliberal politics, current drug policies shift the burden of responsibility to individuals who do not have adequate resources to take precautions in their drug use, thereby increasing their risk of health harms and further reinforcing their social marginalization.

Our study has limitations and strengths. We used the Fresno SSP and other agencies as initial points of recruitment, which biases our sample toward individuals who engage in services. However, this likely underestimates constrained syringe access in the region. Qualitative research is not generalizable, but working with both key informants and individuals who use drugs lends critical contextual insight into local syringe access and how state and local policies profoundly shape individual lived experience.

Conclusions

Insufficient syringe access in the Central Valley results from landscapes of antagonism in which multiple actors at state and local levels often clash over the implementation of evidence-based drug policies. In California, as other U.S. contexts, this limits access to sterile syringes, which can exacerbate infectious disease transmission and create multiple health harms. Until we find ways to cooperate in supporting evidence-based health policies to make injection drug use safer, the ongoing drug "crisis" of our own making will only deepen. Thus, we ask: *shouldn't we enact drug policies based on scientific evidence rather than local political antagonisms?*

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