

## Syringe Acquisition Experiences and Attitudes among Injection Drug Users Undergoing Short-Term Opioid Detoxification in Massachusetts and Rhode Island

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**ABSTRACT** *Access to sterile syringes for injection drug users (IDUs) is a critical part of a comprehensive strategy to combat the transmission of HIV, hepatitis C virus, and other bloodborne pathogens. Understanding IDUs' experiences and attitudes about syringe acquisition is crucial to ensuring adequate syringe supply and access for this population. This study sought to assess and compare IDUs' syringe acquisition experiences and attitudes and HIV risk behavior in two neighboring states, Massachusetts (MA) and Rhode Island (RI). From March 2008 to May 2009, we surveyed 150 opioid IDUs at detoxification facilities in MA and RI, stratified the sample based on where respondents spent most of their time, and generated descriptive statistics to compare responses among the two groups. A large proportion of our participants (83%) reported pharmacies as a source of syringe in the last 6 months, while only 13% reported syringe exchange programs (SEPs) as a syringe source. Although 91% of our sample reported being able to obtain all of the syringes they needed in the past 6 months, 49% had used syringes or injection equipment previously used by someone else in that same time period. In comparison to syringe acquisition behaviors reported by patients of the same detoxification centers in 2001–2003 (data reported in previous publication), we found notable changes among MA participants. Our results reveal that some IDUs in our sample are still practicing high-risk injection behaviors, indicating a need for expanded and renewed efforts to promote safer injection behavior among IDUs. Our findings also indicate that pharmacies have become an important syringe source for IDUs and may represent a new and important setting in which IDUs can be engaged in a wide array of health services. Efforts should be made to involve pharmacists in providing harm reduction and HIV prevention services to IDUs. Finally, despite limited SEP access (especially in MA), SEPs are still used by approximately one of the three IDUs in our overall sample.*

**KEYWORDS** *Injection drug users, IDUs, Syringes, Non-prescription syringes, Pharmacy, Syringe, Exchange program, Needle exchange program, Harm reduction*

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## INTRODUCTION

Injection drug users (IDUs) remain a population at risk for contracting a variety of bloodborne pathogens, including HIV and hepatitis C virus (HCV). Increasing the accessibility of sterile syringes is a proven public health intervention to lower rates of risky behavior that can result in HIV and HCV transmission among IDUs.<sup>1-6</sup> While it is difficult to make causal inferences about the effects of syringe exchange programs (SEPs) and non-prescription sale of syringes in pharmacies on such risk behaviors, the expansion of such services has likely resulted in a substantial decrease in the incidence of HIV among IDUs in the USA due to reductions in high-risk injection practices.<sup>1,3,7</sup> For example, a recent study comparing HIV risk factors among IDUs in Newark, NJ, where it was illegal to possess or distribute syringes for the purposes of injecting drugs at the time of the study, and New York City, where syringes were legal, found that Newark IDUs were more likely to test seropositive for HIV and for HCV antibody, to obtain syringes from street sellers, to re-use syringes, and to inject with another IDUs' used syringes.<sup>8</sup>

Despite the demonstrated effectiveness of SEPs, a lack of funding and public support for this harm-reduction strategy has inhibited further expansion of SEPs as well as their accessibility.<sup>9,10</sup> An alternative to expanding access to sterile syringes through SEPs that has emerged is the legalization of the purchase and possession of non-prescription sterile syringes.<sup>11</sup> States that have permitted the sale of non-prescription syringes in pharmacies have experienced increased access to sterile syringes and decreased high-risk injection behaviors and/or HIV incidence among IDUs,<sup>6,12-14</sup> demonstrating that sale of nonprescription syringes in pharmacies complements the efforts of SEPs to provide sterile syringes to IDUs.<sup>1,15</sup> Pharmacies are widespread, typically already have insulin syringes in stock for diabetics, tend to have longer hours than SEPs, and are staffed by trained health care professionals. Additionally, it may also be possible to offer other services to IDUs at pharmacies, such as referrals to drug treatment or other medical/social services, although targeted training for pharmacists and pharmacy staff would likely be required to make an intervention successful.<sup>16,17</sup> Offering such services in pharmacies can expand and enhance the scope of services already offered by SEPs, which include safer sex materials, hygiene items, overdose prevention training and naloxone, HIV and HCV testing and counseling, and linkage to drug treatment and other types of medical care.<sup>6,7,16</sup>

In an effort to increase IDUs' access to sterile syringes, Rhode Island (RI) passed legislation legalizing the sale of non-prescription syringes by pharmacists, at their discretion, in 2000.<sup>18</sup> Following the implementation of this legislation, decreases in syringe sharing and re-use were observed, with rates markedly lower than those reported in neighboring Massachusetts (MA), where syringe possession and non-prescription syringe sale remained illegal until 2006.<sup>11,19</sup>

In 2006, MA passed similar legislation to that of RI, allowing pharmacists to sell non-prescription syringes to anyone over the age of 18 and decriminalizing possession of syringes.<sup>19</sup> Both programs were instituted on a statewide basis. At the time of implementation, and on a yearly basis thereafter, trainings were offered to RI pharmacists in the form of continuing education credit, but no such training was available in MA. Currently, both states permit the sale of non-prescription syringes by pharmacists, at their discretion; neither state requires local approval, requires patients to register, or limits the number of syringes that can be purchased. MA requires public health literature to be distributed with all syringes and also

allows pharmacists to request photo identification to ensure that the purchaser is at least 18 years old (no information is recorded). Statewide data on pharmacy participation rates are not available.

We sought to compare the results of the present survey with the findings of a study from our research group, which was published in 2007.<sup>11</sup> That study was conducted from 2001 to 2003 and examined differences between MA and RI IDUs with respect to syringe sharing and syringe acquisition. While the previous study found marked differences between IDUs in the two sites, we hypothesized that those differences would be much smaller, since MA legalized syringes in 2006. With regards to SEPs, we expected RI IDUs to report higher rates of utilization than MA IDUs, since RI's SEP is located in Providence and services two other urban areas of the state with a mobile outreach van. In contrast, MA only has four fixed-site SEPs (two located in or near Boston, one in central MA, and one on Cape Cod) and one mobile SEP in Boston (see Figure 1 for the map).<sup>20</sup>

In this study, individuals undergoing inpatient detoxification were surveyed at Stanley Street Treatment and Resources (SSTAR), a non-profit agency that operates inpatient opioid detoxification facilities in RI and MA. This is the same facility where participants were interviewed for the 2007 study by the authors. SSTAR accepts insured patients, but the majority of their patients are uninsured and utilize state-funded slots. We chose to conduct this study at these detoxification centers because they were used by our research group previously and present a good opportunity to interact with patients who have recently injected drugs.

## METHODS

From March 2008 to May 2009, we administered a 15- to 20-min, 41-item cross-sectional paper survey to 215 individuals undergoing inpatient detoxification at a level-three detoxification facility with locations in RI and southeastern MA. The



**FIGURE 1.** Map of the four fixed-site SEPs.

survey included questions about current (previous 30 days) and lifetime drug use, access to syringes, criminal justice history, and HIV risk behaviors, as well as access to health and other services in RI and MA. Inclusion criteria included active opioid use prior to study enrollment, proficiency in English, and being 18 years or older. Eligible participants were guided through the informed consent process by trained research assistants and then self-administered an anonymous survey. Among eligible individuals, 30 declined to participate (12%); no demographic data were collected from those who declined to complete the survey.

Although both IDUs ( $N=169$ ) and non-IDUs ( $N=46$ ) completed the survey, only IDU responses were included in the analysis presented here. In order to examine potential differences in responses from the two geographic locations, we stratified the sample into two separate groups based on where participants reported spending the majority of their time. Since we did not obtain data on participant residence, we used participants' responses as to where they spent the majority of their time as a proxy for the most likely location where respondents obtained most of their syringes. We subsequently excluded participants from our analysis if they did not identify either MA or RI as the location where they spent most of their time ( $N=19$ ). Survey results from a total of 150 participants (64 from RI, hereafter referred to as "RI participants" and 86 from MA, hereafter referred to as "MA participants") were analyzed.

Descriptive statistics were generated for participants in both locations. Fisher exact tests and non-directional  $t$  tests were used to compare dichotomous and continuous variables, respectively, for the two sites. All data were analyzed using Stata 11.0 (Stata Corporation, College Station, TX, USA). The Miriam Hospital Institutional Review Board approved all aspects of the study.

## RESULTS

A total of 150 inpatients, 64 reporting spending most of their time in RI and 86 reporting spending most of their time in MA, completed surveys. Eighty-five percent of participants were Caucasian, 7% were Hispanic, and 1% were African-American. No statistically significant differences were observed between MA and RI participants with respect to age, gender, and substances used, although ethnicity and having never previously utilized drug treatment differed slightly between the groups (Table 1). In addition, no statistically significant differences were found regarding HIV or HCV testing or self-reported serostatus. Among all participants, 1% reported infection with HIV and 48% with HCV. A total of 67% of participants reported receiving an HIV test in the prior 6 months and 83% reported ever being tested for hepatitis C.

Table 2 summarizes survey responses regarding syringe acquisition. The vast majority of participants (91%) reported being able to obtain all the syringes they needed (Table 2). Across locations, there was a statistically significant difference in reported SEP usage. Among RI participants, 48% reported ever using a SEP, while only 17% of MA participants reported ever using an SEP ( $p<0.01$ ). In addition, 18% of participants from RI versus 1% from MA reported obtaining syringes from a SEP in the prior 6 months ( $p<0.01$ ). The most commonly reported barriers to accessing SEPs included distance (22%), being unaware of SEPs (27%), and availability of needles elsewhere (21%). Additionally, a quarter of all participants responded that it was easier to obtain syringes at a pharmacy than from an SEP. No

**TABLE 1 Demographics (location based on where participants reported spending most of their time)**

	RI	MA	Total sample	<i>P</i> value
Mean age in years (S.D.) <sup>a</sup>	32.2 (8.3)	31.3 (9.2)	31.7 (8.8)	0.55
Drug use				
Mean age at first injection in years (S.D.)	23.5 (7.03)	22.6 (6.6)	23 (6.8)	0.41
Mean number of injections per day (S.D.)	11.1 (20.3)	6.5 (4.4)	8.5 (15.3)	0.07
Median number of injections per day	4	4	4	
	RI: <i>N</i> (%) <sup>c</sup>	MA: <i>N</i> (%) <sup>c</sup>	Total: <i>N</i> (%) <sup>c</sup>	<i>P</i> value
Gender				
Female	25 (39.1)	29 (33.7)	54 (36.0)	0.48
Male	37 (57.8)	57 (66.3)	94 (62.7)	
No response	2 (3.1)	0 (0.0)	2 (1.3)	
Ethnicity				
White	51 (79.7)	77 (89.5)	128 (85.3)	0.04
Hispanic	9 (14.1)	2 (2.3)	11 (7.3)	
Native American	1 (1.6)	3 (3.5)	4 (2.7)	
Cape Verdean	1 (1.6)	3 (3.5)	4 (2.7)	
Black	1 (1.6)	0 (0.0)	1 (0.7)	
Other	1 (1.6)	1 (1.2)	2 (1.3)	
Substances used:				
Heroin	64 (100.0)	83 (96.5)	147 (98.0)	0.26
Cocaine	38 (59.4)	47 (54.7)	85 (56.7)	0.62
Alcohol	29 (45.3)	33 (38.4)	62 (41.3)	0.41
Incarceration in past year				
Yes	44 (68.8)	52 (60.5)	96 (64.0)	0.60
No	20 (31.3)	30 (34.9)	50 (33.3)	
No response	0 (0.0)	4 (4.7)	4 (2.7)	
First time at SSTAR				
Yes	11 (17.2)	23 (26.7)	34 (22.7)	0.17
No	53 (82.8)	62 (72.1)	115 (76.7)	
No response	0 (0.0)	1 (1.2)	1 (0.7)	
Previous drug treatment <sup>b</sup>				
Medication-assisted therapy (MAT)	45 (70.3)	60 (69.8)	105 (70.0)	1.00
Non-MAT treatment	41 (64.1)	55 (63.9)	96 (64.0)	1.00
None	0 (0.0)	17 (19.8)	17 (11.3)	<0.01

<sup>a</sup>For this question only, *N*=60 from RI and *N*=84 for MA

<sup>b</sup>Percent total does not equal 100 because multiple responses were permitted

<sup>c</sup>*N*=64 for RI, *N*=86 for MA, total *N*=150

statistically significant differences were found across locations regarding barriers to accessing SEPs (Table 2).

A large proportion of participants from both MA and RI reported buying syringes from pharmacies in the previous 6 months (78% from RI and 87% from MA; Table 2). A high proportion of respondents, 87% from MA and 88% from RI, correctly identified their states' syringe laws. Overall, the majority of respondents reported learning about syringe laws from friends (66%). Other common sources were pharmacists (31%), health care professionals (23%), and the news (20%; data not shown). A total of 20% of respondents reported ever being declined syringe sale at a pharmacy. When asked about comfort level while acquiring syringes in pharmacies, there were no statistically significant differences regarding respondents'

**TABLE 2 Syringe access and acquisition history and experiences (location based on where participants reported spending most of their time)**

	RI	MA	Total sample	P value
Syringe cost (per syringe)				
Mean cost from pharmacy, in cents (S.D.) <sup>a</sup>	20.7 (40.0)	15.3 (35.4)	17.5 (37.3)	0.42
Median cost from pharmacy, in cents <sup>a</sup>	32.5	30	30	
Mean cost from someone else, in cents <sup>b</sup>	82.8 (36.6)	87.0 (32.4)	85.2 (34.2)	0.56
Median cost from someone else, in cents <sup>b</sup>	99	99	99	
	RI: N (%) <sup>c</sup>	MA: N (%) <sup>c</sup>	Total: N (%) <sup>c</sup>	P value
Syringe sources, prior 6 months <sup>d</sup>				
Bought at a pharmacy	50 (78.1)	75 (87.2)	125 (83.3)	0.33
From a friend	13 (20.3)	20 (23.3)	33 (22.0)	0.84
Bought from someone	10 (15.6)	11 (12.8)	21 (14.0)	0.63
SEP	18 (28.1)	1 (1.2)	19 (12.7)	<0.01
Other	3 (4.7)	2 (2.3)	5 (3.3)	0.65
No response	4 (6.3)	2 (2.3)	6 (4.0)	
Able to obtain all syringes needed, prior 6 months				
Yes	58 (90.6)	79 (91.9)	137 (91.3)	0.75
No	5 (7.8)	5 (5.8)	10 (6.7)	
No response	1 (1.6)	2 (2.3)	3 (2.0)	
Tried to buy at pharmacy, prior 6 months				
Yes	54 (84.4)	80 (93.0)	134 (89.3)	0.08
No	9 (14.1)	4 (4.7)	13 (8.7)	
No response	1 (1.6)	2 (2.3)	3 (2.0)	
Pharmacist ever declined syringe sale				
Yes	15 (23.4)	10 (11.6)	25 (16.7)	0.07
No	46 (71.9)	73 (84.9)	119 (79.3)	
No response	1 (1.6)	3 (3.5)	4 (2.7)	
Treatment when buying syringe				
Bad/uncomfortable	12 (18.8)	21 (24.4)	33 (22.0)	0.12
Okay/slightly uncomfortable	35 (54.7)	35 (40.7)	70 (46.7)	
Good	11 (17.2)	25 (29.1)	36 (24.0)	
No response	3 (4.7)	3 (3.5)	6 (4.0)	
Not applicable	3 (4.7)	2 (2.3)	5 (3.3)	
Desired services from pharmacies <sup>d</sup>				
Drug treatment/counseling	16 (25.0)	33 (38.4)	49 (32.7)	0.15
Safe syringe disposal	16 (25.0)	30 (34.9)	46 (30.7)	0.36
Overdose prevention	16 (25.0)	22 (25.6)	38 (25.3)	1.00
HIV, HCV testing	11 (17.2)	23 (26.7)	34 (22.7)	0.31
Applying for medical insurance	20 (31.3)	13 (15.1)	33 (22.0)	0.01
Community services	19 (29.7)	13 (15.1)	32 (21.3)	0.02
Medical services	17 (26.6)	15 (17.4)	32 (21.3)	0.15
No response	8 (12.5)	6 (7.0)	14 (9.3)	
Ever participated in SEP				
Yes	31 (48.4)	15 (17.4)	46 (30.7)	<0.01
No	31 (48.4)	69 (80.2)	100 (66.7)	
No response	2 (3.1)	2 (2.3)	4 (2.7)	
Issues that prevented participants from accessing SEP <sup>d</sup>				
Not aware of the program	13 (20.3)	28 (32.6)	41 (27.3)	0.13
Buying at the pharmacy is easier	18 (28.1)	19 (22.1)	37 (24.7)	0.33
Too far away	11 (17.2)	22 (25.6)	33 (22.0)	0.31
Can get needles elsewhere	10 (15.6)	22 (25.6)	32 (21.3)	0.22
Afraid someone would find out	3 (4.7)	13 (15.1)	16 (10.7)	0.06

**TABLE 2 (continued)**

	RI: <i>N</i> (%) <sup>c</sup>	MA: <i>N</i> (%) <sup>c</sup>	Total: <i>N</i> (%) <sup>c</sup>	<i>P</i> value
Afraid of police harassment	4 (6.3)	6 (7.0)	10 (6.7)	1.00
Not open when I want it to be	5 (7.8)	3 (3.5)	8 (5.3)	0.28
Felt unsafe going	3 (4.7)	5 (5.8)	8 (5.3)	1.00
Other	3 (4.7)	2 (2.3)	5 (3.3)	0.80
No response	10 (15.6)	11 (12.8)	21 (14.0)	

<sup>a</sup>For this question, *N*=54 for RI and *N*=80 for MA

<sup>b</sup>For this question, *N*=60 for RI and *N*=82 for MA

<sup>c</sup>*N*=64 for RI, *N*=86 for MA, total *N*=150

<sup>d</sup>Percent total does not equal 100 because multiple responses were permitted

reported purchasing experiences across locations and, overall, only 22% perceived their last attempt to purchase a sterile syringe in a pharmacy to be a negative experience (Table 2). With respect to gender, 86% of females in the sample reported feeling uncomfortable or slightly uncomfortable when buying syringes from pharmacies while only 67% of males did (*p*=0.02, data not shown).

We also assessed respondents' views about specific pharmacy-based HIV prevention related services. For the most part, responses to these questions did not differ between locations, although more Rhode Island respondents favored community services and medical insurance application offered through pharmacies (Table 2). With respect to gender, a larger proportion of females reported having a favorable view about an array of potential social and medical services from pharmacies. In addition, female respondents favored the implementation of drug counseling (*p*<0.01) and other medical services (*p*=0.02) through pharmacies at significantly higher rates than male respondents (data not shown).

Table 3 documents HIV risk behaviors and injection practices. The vast majority of respondents (94%) reported ever reusing a syringe, with more RI participants citing a lack of sterile syringes as a factor in syringe reuse, though not statistically significant (Table 3). In total, about half (49%) of respondents reported using injection equipment used by others in the previous 6 months (Table 3). No statistically significant differences were found regarding reasons for sharing injection equipment across locations. Among participants from both RI and MA, respondents who shared injection equipment cited that they lacked their own works (41%), trusted the person they shared with (18%), only shared with one regular partner (13%), or that they cleaned their needles with bleach (15%) as reasons for sharing. Likewise, no statistically significant differences were found regarding respondents' reported syringe sharing partners, though common responses included primary sex partners (32%), male friends (21%), and female friends (17%). Responses regarding syringe disposal also did not vary across locations: overall 82% reported disposal by trash, 32% by leaving syringes on the ground, and 35% by flushing down the toilet (respondents could report multiple disposal methods).

**DISCUSSION**

Although the importance of pharmacies as a syringe source has been documented elsewhere, many previous studies reported findings from urban areas with good SEP

**TABLE 3 Injection behaviors and HIV risk (location based on where participants reported spending most of their time)**

	RI: N (%) <sup>a</sup>	MA: N (%) <sup>a</sup>	Total: N (%) <sup>a</sup>	P value
Ever re-used a syringe				
Yes	60 (93.8)	81 (94.2)	141 (94.0)	1.00
No	2 (3.1)	2 (2.3)	4 (2.7)	
No response	2 (3.1)	3 (3.5)	5 (3.3)	
Reasons for not using a new syringe <sup>b</sup>				
Habit of reusing	19 (29.7)	34 (39.5)	53 (35.3)	0.16
Cost	24 (37.5)	22 (25.6)	46 (30.7)	0.21
Syringe not available when I want to inject	12 (18.8)	28 (32.6)	40 (26.7)	<b>0.04</b>
Worried about getting caught with syringes	12 (18.8)	17 (19.8)	29 (19.3)	0.83
It's OK to reuse syringes	10 (15.6)	14 (16.3)	24 (16.0)	0.83
Unable to obtain enough sterile syringes	10 (15.6)	2 (2.3)	12 (8.0)	< <b>0.01</b>
Other	6 (9.4)	1 (1.2)	7 (4.7)	<b>0.04</b>
No response	3 (4.7)	9 (10.5)	12 (8.0)	
Ever used syringe/injection equipment that were already used by someone else				
Yes	40 (62.5)	53 (61.6)	93 (62.0)	0.86
No	20 (31.3)	29 (33.7)	49 (32.7)	
No response	4 (6.3)	4 (4.7)	8 (5.3)	
Frequency of using injection equipment that were previously used by someone else, prior 6 months				
Always	1 (1.6)	1 (1.2)	2 (1.3)	0.87
Sometimes	31 (48.4)	40 (46.5)	71 (47.3)	
Never	26 (40.6)	39 (45.3)	65 (43.3)	
No Response	6 (6.0)	6 (7.0)	12 (8.0)	

<sup>a</sup>N=64 for RI, N=86 for MA, total N=150

<sup>b</sup>Percent total is not equal to 100 because multiple responses were permitted

coverage. Here, we report the findings from RI, a geographic location with an accessible (but likely underutilized) SEP, and southeastern MA, a location without an SEP. In both locations, pharmacies were the most common source of syringes. The overall utilization of pharmacies as a syringe source was slightly higher in MA, although the difference between locations was not significant. These findings suggest that IDUs will utilize pharmacies as a syringe source in locations with and without SEP coverage, and reinforce findings from other authors that non-prescription syringe sales in pharmacies compliment the activities of SEPs.<sup>1,15</sup>

Legislative and regulatory changes in the past 10 years have increased access to syringes in both RI and MA while simultaneously lessening the legal repercussions for syringe possession. The success of these changes is reflected in our results, as the vast majority of our participants (91%) reported being able to obtain all of the syringes that they have needed for the past 6 months.

Both RI and MA legalized the purchase of non-prescription syringes in pharmacies; however, each state did so 6 years apart. Thus, in the current study, we expected prior differences between the sites to be diminished, and we also expected syringe accessibility to be increased in MA, in comparison to the 2001–2003 study by our research group. We also anticipated a difference in SEP utilization between MA and RI participants, since there is no SEP in southeastern MA, but decent statewide SEP coverage in RI. Both of these hypotheses proved accurate.



In comparison to the 2001–2003 study by our research group, we noted some important changes in the differences between MA and RI participants' syringe acquisition and syringe use behaviors. In 2001–2003, only 32% of MA and 79% of RI participants had purchased syringes from pharmacies in the past 6 months. In the current study, the portion of RI residents purchasing syringes at pharmacies was similar (78%), but 87% of MA participants reported using pharmacies as a syringe source. Rates of SEP utilization were also different from the 2001–2003 study, with 11% of RI and 6% of MA participants reporting SEPs as a syringe source in that study, compared with 28% of RI and 1% of MA participants in the current sample. Also, when asked if they were able to obtain all of the syringes needed in the past 6 months, only 79% of MA participants from the prior study answered in the affirmative, whereas 91% of MA participants in the current sample were able to obtain all of the syringes they needed (prior 6 months, change in RI respondents between studies was small). We also observed a decrease in the percentage of MA participants who reported “always” using injection equipment previously used by someone else, with 10% of MA participants in the 2001–2003 study reporting that answer, compared to only 1.6% in the current sample (prior 30 days, RI rates were similar for both study periods). These data highlight the success of legalizing non-prescription syringes sales in pharmacies as a way to increase access to sterile syringes and decrease the rate of high-risk injection practices among IDUs.

In the current study, in both MA and RI, less than one quarter of participants reported a pharmacist ever declining to sell them a syringe; however, more than two thirds of our sample reported ever feeling uncomfortable or slightly uncomfortable while buying syringes in a pharmacy. While our findings demonstrate the importance of pharmacies as a source of syringes for IDUs, they also suggest that negative interactions between IDUs attempting to purchase sterile syringes and pharmacists can pose a critical barrier to syringe access in pharmacy settings. IDUs are a highly stigmatized population and any stigma or unfair treatment—perceived or experienced—during the process of syringe acquisition in a pharmacy may cause IDUs to become reluctant to utilize pharmacies as a syringe source and may limit the opportunity for pharmacy staff to engage IDUs in important health services. The high prevalence of individuals reporting uncomfortable experiences indicates a need for continuing education among pharmacists and pharmacy staff regarding the medical basis of addiction and the public health and medical benefits of accessible, sterile syringes for IDUs. Further research is still needed to understand pharmacists' interest and willingness to engage in the pharmacy-based provision of health-related services to IDUs. Our findings, however, highlight the importance of integrating legalization efforts with interventions to better adapt harm reduction initiatives to pharmacy settings and to more effectively engage this group of health care providers in HIV prevention efforts.

In our assessment of syringe acquisition behaviors, we also examined issues regarding SEP utilization. Surprisingly, less than one fifth of our sample reported acquiring syringes from a SEP in the previous 6 months, with only one person from MA reporting SEPs as a syringe source. The benefits of SEPs, such as the ability of SEP staff to form productive relationships with clients, are well established and the low rates of SEP utilization in our sample suggest possible significant barriers to accessing SEPs among IDUs in both states. Although we identified some possible barriers to SEP utilization, including a lack of program awareness among IDUs (reported by 27% of respondents) and SEPs being located too far away (22%), the impact of these and other barriers on SEP utilization is still unclear. Although there

are no data available to determine whether SEPs in MA and RI currently reach the majority of IDUs, we believe, based on current and prior research, that SEPs cover the majority of locations where IDU densities are high in RI, but not in southeastern MA.

Finally, it is notable that many respondents in our sample reported risk factors for HIV infection (Table 3). Despite the existence of SEPs and the non-prescription sale of syringes in both MA and RI, nearly half of our sample reported sharing syringes and/or injection equipment in the past 6 months. While non-prescription syringes may be available at most pharmacies in MA and RI, some pharmacies may only sell syringes in larger quantities at costs that make them inaccessible to many IDUs.<sup>21</sup> This finding has important policy implications as it suggests that, even with expansion of syringe access to pharmacy settings, important barriers exist to utilizing these new venues that must be better understood. In particular, research should examine how legalization policies and cost-related barriers associated with non-prescription syringe purchase impact syringe accessibility and HIV risk behaviors among IDUs.

The generalizability of our findings is limited by our sampling of IDUs undergoing inpatient detoxification, which may not be representative of all IDUs in RI or southeastern MA. Selection bias may have occurred, but was likely avoided by recruiting at an acute detoxification center that accepts uninsured patients. Self-report and recall biases are possible, although they were likely avoided by using lifetime or short, recent time frames for most survey questions. Prior research has validated the accuracy of self-report among IDUs.<sup>22,23</sup> Our relatively small sample size also limited the statistical power of our analyses. Since this was a cross-sectional survey, we cannot infer causality for any of the outcomes. Additionally, we did not assess place of residency, and instead used the location where individuals spent most of their time as a proxy for geographic location. Since SEPs are concentrated in urban areas of MA and RI, it would have been useful to compare place of residence with SEP availability and utilization. Finally, data from the 2007 paper are no longer available, precluding concurrent statistical analyses of the two samples to determine statistical significance for the differences observed. Despite these limitations, our findings highlight a critical shift in syringe acquisition behaviors among IDUs. The sale of non-prescription syringes in pharmacies has resulted in many IDUs in both RI and MA accessing their syringes in pharmacies, and our study provides empirical evidence for this shift.

## CONCLUSIONS

While syringe accessibility has greatly improved in both Rhode Island and Massachusetts in the last 10 years, it is important that this issue remains a focal point in HIV/HCV prevention efforts, as challenges still remain to ensure that IDUs are able to access syringes and other important medical services. Our study finds that pharmacies have become an important syringe source for this population and may represent a new and important setting in which IDUs can be engaged in a wide array of health services. Although pharmacists are highly trained health care professionals who possess the requisite skills for patient interaction and counseling, this important resource has not yet been extensively utilized with regard to HIV/HCV prevention efforts. With the pharmacy-based sale of non-prescription syringes now legal in at least 44 states,<sup>24</sup> efforts should be made to involve this group of health care professionals in providing harm reduction and HIV prevention services

to IDUs. Our findings also highlight the continuing importance of SEPs as a syringe source and the need to bolster SEPs, as they remain the only venue in which IDUs are able to access sterile syringes free of cost. State and federal support for both SEPs and legalization of non-prescription syringe purchase and possession is urgently needed to reduce HIV/HCV transmission in this critical at-risk population.

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