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## Feasibility of Providing Interventions for Injection Drug Users in Pharmacy Settings: A Case Study Among San Francisco Pharmacists

Valerie J. Rose, Dr.PH, M.P.H.<sup>a</sup>, Alexandra Lutnick, Ph.D.<sup>b</sup>, and Alex H. Kral, Ph.D.<sup>c</sup>

<sup>a</sup>Director of Policy and Evaluation Research, Rose Associates, Public and Community Health Consulting, Oakland, CA

<sup>b</sup>Senior Research Scientist, Urban Health Program, RTI International, San Francisco, CA

<sup>c</sup>Director of Urban Health Program, RTI International, San Francisco, CA

### Abstract

In addition to syringe exchange programs, pharmacies are important venues where injection drug users (IDUs) can access non-prescription syringes and other prevention interventions. This study assessed the feasibility of providing a range of interventions for IDUs in pharmacy settings. Semi-structured qualitative interviews were conducted with 23 participants (policy makers, owner/managers, dispensing pharmacists, and pharmacy staff) from independent and chain/retail pharmacies in San Francisco, California, USA. The highest level of support was for a coupon syringe program and educational materials. Several overarching themes illustrate challenges to implementing pharmacy-based preventive interventions: time, space, sufficient staff, pharmacist training, legal considerations, pharmacist attitudes toward IDUs, and cost and reimbursement issues. This study provides concrete examples of the types of preventive services that pharmacists support and consider feasible, and illustrates that pharmacists welcome the opportunity to broaden their role as critical partners in public health matters related to injection drug use.

### Keywords

Injection drug use; Pharmacy; Non-Prescription Syringe Sales; Policy; Harm Reduction; Public Health

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Injection drug users (IDUs) are at high risk for HIV, viral hepatitis, drug overdose, and soft-tissue infections (Walton et al. 2011; Cunningham et al. 2011; Jones et al. 2010; Mathers et al. 2010). IDUs frequently suffer from limited access to preventive care and treatment for health problems unrelated to substance use (Heinzerling et al. 2006). In addition, the “layering” effect of mental health and other co-occurring disorders combined with drug use associated stigma can create challenges to health care (Lekas, Siegel & Leider 2011). Moreover, several studies (Mehta et al. 2008; Appel et al. 2004; Riley et al. 2002; Chitwood et al. 1999) found that poor access to care is exacerbated by a lack of health insurance and

transportation to healthcare facilities. To address these challenges, syringe exchange programs (SEPs), initially designed to meet the basic syringe access needs of IDUs, have often tried to integrate preventive health care and treatment into their services. For example, many SEPs provide screening for HIV and sexually transmitted infections (STIs), abscess care, and direct linkages to care and drug treatment (Kidorf & King 2008; Birkhead et al. 2007; Heinzerling et al. 2007; Heinzerling et al. 2006; Molitor et al. 2005). Numerous studies demonstrate the effectiveness of SEPs in reducing syringe sharing and lowering rates of new HIV and hepatitis C virus (HCV) infections among IDUs (Bruneau et al. 2011; CDC 2010; Rich et al. 2007; Pouget et al. 2005; Kral et al. 2004; MacDonald et al. 2003; Gibson et al. 2002; Bluthenthal et al. 2001).

Non-prescription syringe sales (NPSS) through pharmacies is another promising intervention that may sustain the trend witnessed with SEPs (Crawford et al., 2011; Riley et al. 2010; Rudolph et al. 2010; Fuller et al. 2007; Cotton-Oldenburg et al. 2001; Singer et al. 1998). In New York City, comprehensive evaluations of NPSS have reported few problems and overall acceptability of NPSS programs. Evaluations of NPSS in Los Angeles and San Francisco document its acceptability, and highlight the opportunity for pharmacists to address the broader health needs of IDUs and expand their role as patient advocates (Cooper et al. 2010; Rose & Raymond 2010). Although the above evaluations demonstrate high levels of acceptability, Lutnick et al. (2012) describe a recent syringe purchase test in San Francisco and Los Angeles where they discovered inconsistencies that may serve as barriers to syringe access among IDUs and result in missed opportunities to provide pertinent health information to this population. The findings from that study suggest a need to conduct outreach to pharmacies to ensure they are stocking the types of syringes that IDUs prefer, to assess the reasons why pharmacies are not providing the requisite health information, and examine whether their omission of disposal options is indicative of their reluctance to serve as disposal sites. The disparate findings between the syringe purchase test and other evaluations of NPSS highlights the importance of assessing implementation through a variety of methods, not just those that rely on self-reports.

Although evaluations of NPSS have highlighted successes and challenges, research with IDUs has demonstrated the ways in which IDUs use pharmacies as a syringe source, as well as their willingness to use pharmacies for additional services. In focus groups among IDUs in Colorado, Connecticut, Kentucky and Missouri, Reich et al. (2002) found that pharmacies were a consistent and reliable source of sterile syringes. Riley et al. (2010) addressed pharmacy use by IDUs in San Francisco, and found that 39% of IDUs interviewed used pharmacies as a consistent source of sterile syringes in addition to SEPs. Lutnick, Case & Kral (2012) conducted a qualitative study with IDUs in San Francisco to assess their opinion about receiving various prevention interventions in pharmacies. IDUs were receptive to pharmacies providing these interventions, albeit with concerns about privacy, confidentiality and willingness of pharmacists to serve them. With pharmacies increasingly selling syringes to IDUs, it is worthwhile to assess whether they can also be venues for providing other services to this population.

Several studies have demonstrated the ways in which pharmacies have expanded prevention and clinical interventions. In Seattle, Washington, a pharmacist evaluated five pediatric

conditions and provided bilingual patient education materials to an underserved immigrant population (Kalister et al. 1999). Grabenstein et al. (2001) evaluated influenza vaccine delivery and the relative contributions between pharmacist- and physician-delivered vaccines among adults in Washington (where pharmacists offer vaccination services) and Oregon (where those services are not offered). Pharmacist-delivered vaccinations were associated with more vaccinations among a high-risk and underserved population, as well as patients under age 65 who take indicated medications for chronic diseases. In June 2011, as part of National HIV testing month, Walgreens pharmacies in Illinois, Florida, Georgia, California, Louisiana and Texas offered free rapid HIV testing (Walgreens 2011). Walgreens has also expanded its online informational content about HIV/AIDS, and there are now more than 300 Walgreens pharmacies that are placing signage and other informational products in their stores in an attempt to communicate with their customers about HIV/AIDS and encourage them to get tested (CDC 2011). The current study assessed the feasibility of expanding the range of pharmacy-based interventions for IDUs from the perspective of pharmacists and other pharmacy stakeholders in San Francisco.

## Methods

As part of a mixed methods feasibility study in five international cities to assess using pharmacies as public health venues to provide health related services to IDUs, key pharmacy stakeholders in San Francisco were recruited to describe their interactions with and perceptions of IDUs, their receptiveness to selected pharmacy-based interventions for IDUs, and their perceptions of facilitators and barriers to service implementation. The types of interventions to be placed in pharmacy settings were identified using preliminary findings from qualitative and quantitative interviews conducted with IDUs in the five cities (Lutnick et al. 2012). Based on recommendations from our study's pharmacist consultant, we used quota sampling (Bernard, 1995) to recruit a diverse sample of participants selected for their potential role in setting pharmacy policy (policy maker, owner/manager, dispensing pharmacist, staff) and the type of pharmacy (independent or chain). Policy makers play a direct role in setting pharmacy policy (e.g., pharmacy managers and corporate pharmacy directors). Licensed pharmacies in San Francisco were identified through a list from the California Board of Pharmacy, with pharmacies restricted to those open to the general public (retail). We divided the list of 110 pharmacies into independent and chain pharmacies, and then used quota sampling to recruit participants. Interviews were conducted in San Francisco, CA, USA between July 2010 and March 2011.

A semi-structured interview guide included items about professional experiences with IDUs and explored participants' perceptions about the potential for including the following interventions in their pharmacies : 1) educational materials; 2) enhanced syringe access (including free, fee based and coupon exchange); 3) syringe disposal; 4) dispensing methadone or naloxone; 5) training (including overdose prevention and safer injection techniques); 6) clinical testing, including HIV testing, and vaccinations, and 7) directly observed antiretroviral therapy for HIV. The majority of interviews were conducted in person, though four were conducted over the phone. The Internal Review Board at RTI International deemed this study exempt as people were participating in their professional roles.

All interviews were conducted in English by the lead author (VR), digitally recorded, and transcribed verbatim. Two authors (VR, AL) independently reviewed the transcripts for content and emergent themes. A table was constructed to represent content relevant to each intervention (Miles & Huberman, 1994). Preliminary codes were assigned to specific content related to pharmacist experiences, opinions and support for or opposition to each proposed intervention. Coded transcripts were subsequently entered into the qualitative data analysis program, ATLAS.ti version 6 (Scientific Software Development, Berlin, Germany). Pertinent quotations were extracted from ATLAS.ti and data were analyzed using grounded theory (Strauss 1988). The authors engaged in extensive review and discussion of the data; there were no significant differences of opinion on the emergent themes identified.

## Results

The mean age of respondents was 45.5 years old with a range of 24-71. Pharmacy stakeholders reported limited professional experiences or specific training in how to work with IDUs. However, six respondents described early career training experiences in drug treatment or public hospital settings where they interacted with individuals who were known or suspected to use injection drugs. All except one of the recounted experiences were positive. Despite the reported lack of professional experience or training; pharmacy stakeholders expressed a commitment to the health needs of their patients who inject illicit drugs. Of the 14 dispensing pharmacists in the sample, 36% had sold syringes in the past 12 months and 21% had refused to sell syringes to IDUs. Table 1 provides additional detail on participant characteristics.

### Educational materials

All respondents reported that providing educational materials is a useful strategy to educate IDUs on various health topics such as HIV, HCV, overdose and abscess prevention, and safer injection techniques. They reported that it is feasible to offer materials in their pharmacies, with the exception of space limitations and language or translation considerations. However, three respondents expressed their concerns about the efficacy of this low-threshold intervention. This concern is reflected in the following statement from a pharmacy manager who works in a hospital setting:

I mean, it's more than nothing. But my experience with printed materials is most people don't read it. And most people don't take it. The ones that take it are the educated ones, usually not the ones that need the most help.

### Enhanced Syringe Access

The concept of a coupon exchange program wherein an IDU could present a coupon valued at the price of one or more syringes in exchange for free syringes was supported by all but one of the respondents. Those in support of this intervention felt that a coupon exchange program would provide enhanced access to sterile syringes for IDUs, reduce syringe sharing, and alleviate the need to charge money for this important preventive service. One pharmacy policy maker expressed support for this approach to syringe distribution:

I know we've been supporting, through our association, a number of different pieces of legislation that for the most part, allow pharmacies to sell a given number of syringes without a prescription. So if we're supporting that we certainly would support the coupon program.

The primary hesitations raised about implementing this service relate to cost reimbursement issues, corporate approval for the types of acceptable coupons, and the need to train staff on how to implement the program. As a pharmacy policy maker reflected:

The challenge would be that from a regional standpoint, if you're giving away a free syringe to a patient, where would that coupon come from, and then how would that be set up in the system to ensure that it happens appropriately?

Under limited circumstances, and with corporate approval, respondents supported the concept of selling a single syringe (as opposed to the current practice of selling only ten-packs) and providing free syringes. Two respondents were apprehensive that IDUs might abuse the "privilege" and come in too often for syringes. A chain pharmacy manager expressed concerns about an increase of IDUs coming into the pharmacy.

Well, I would say, you know, from a business perspective, not to be judgmental or anything - certainly that population of people is not someone that a business would like to have come in and out all day or shop too often. There are issues... the image and how other customers might feel about having drug users come in and out of the store pretty frequently.

Another potential barrier to providing enhanced access is the perception of IDUs as undesirable patients because they are either unkempt, suffer from mental illness or are high on drugs. A chain pharmacy manager offered an explanation of how staff education can help to reduce these barriers.

Most pharmacists, I'd say over ninety percent, are all about helping patients and public health and trying to educate the patients on medication use as well as [medical] devices, but there is that, there is that percent that, you know, don't understand it and it's more of an educational process on my part to help them understand.

Overall, respondents felt that these interventions are feasible if appropriate training is provided and if pharmacy policies and procedures are in place, including staff education.

### **Syringe Disposal**

Whether respondents endorsed the idea of offering on-site syringe disposal was dependent on their respective corporate policies. Those participants who work for a pharmacy chain where syringe disposal is corporate practice supported accepting used syringes in appropriate sharps containers. Another chain's corporate policy prohibits the return of used syringes. Regardless of store policy, respondents expressed that it is preferable for individuals to dispose of syringes at pharmacies since it will reduce the likelihood of improper disposal that places others at risk for needle sticks and disease acquisition. A chain pharmacy manager supported this intervention, "*As long as we don't get in direct contact [with the needles]...because we have to protect other people.*"

Three respondents raised the concern that the cost of incineration and disposal of biohazard waste containers would place a financial burden on pharmacies. For this intervention to be feasible, a reimbursement mechanism would need to exist. In addition to the financial burden, respondents from both chain and independent pharmacies were apprehensive about the amount of time required to implement syringe disposal programs. An owner of an independent pharmacy echoed this sentiment, *“If it’s [going to] incur a lot of time and cost on the pharmacy’s part, then I’ll be less likely to implement that type of program just because I am a one-man show essentially.”*

### **Methadone Administration**

Nine respondents reported that dispensing methadone with an appropriate prescription would be no different than dispensing any other medicine. To effectively implement this intervention, pharmacists want IDU patients to feel safe; therefore, dispensing a daily dose of methadone is acceptable if there is time, and private and confidential space. Not only does this intervention lend itself to the prescription based system already in use by pharmacies, it offers an additional incentive. As a manager of a chain pharmacy stated, *“Every time they come, it’s a dollar going to business.”* Although support exists for this intervention, 17 respondents described significant implementation challenges such as the legality of dispensing methadone, the time burden on staff, and concerns about neighborhood and community reactions. In regard to legal barriers, a pharmacy policy maker stated: *“The pharmacies can only dispense methadone for pain. It’s illegal for us to give methadone to a drug user.”* In addition to the legal barriers, others spoke to the ways in which offering this would increase their overhead costs. Pharmacies would need to have licensed staff overseeing the program, and significant staff time would be required to monitor all the medications. A chain pharmacy manager described how administering methadone through the pharmacy may negatively impact other people in the neighborhood:

I think there would be significant challenges to that. I can only speak for our pharmacy specifically; I don’t think people in this neighborhood would be happy if they perceived that this was sort of a methadone clinic in a way...I think our biggest issue here would be that the folks in this neighborhood probably wouldn’t be tolerant of that.

### **Providing Naloxone for Overdose Prevention**

Overall, respondents were in favor of providing naloxone with a valid prescription. A chain pharmacy manager said, *“Oh, I think that’s just like any other prescription, so I don’t have a problem with that.”* Furthermore, 3 pharmacy policy makers suggested that if current federal laws changed to allow them to administer the drug in an emergency situation, they would be open to doing so.

### **Safer Injection and Overdose Prevention Training Programs**

Nineteen of the 23 respondents supported the idea of providing training that could prevent adverse health outcomes among IDUs. Some thought that group classes would be more effective than one-on-one interventions and that the programs would be more effective if conducted by “someone who is more street savvy” than pharmacists. Concerns about

implementation focused on practical issues such as time and space, willingness of pharmacists to teach safer injection since they felt doing so would be enabling further drug use, and ensuring staff had the sufficient expertise to conduct the trainings. One manager of a chain pharmacy captured the tension between being willing to offer trainings and staff's comfort with teaching safer injection techniques. *"If we were properly trained, I would be willing to do that. But I'm not sure too many people would [want to] do that, you know, teaching them how to inject."*

### **Clinical Testing and Vaccination**

Respondents felt that clinical testing for HIV, hepatitis or pregnancy is feasible and desirable. The implementation of these services would be contingent upon modifying regulations regarding pharmacists drawing blood. A policy maker highlighted this difficulty: *"Every time we try to get the authority for pharmacists even to do blood tests or, you know lipids or blood sugar, we get blocked by the laboratory physicians, the pathologists."* Rapid testing for HIV using oral fluids or finger sticks presented none of these challenges. A pharmacy manager said, *"I mean the rapid testing now is just done with a swab of the cheek. You don't have to draw blood like you used to."* Because many pharmacies already provide various vaccines such as those for influenza and shingles, adding vaccinations for tetanus or hepatitis, for example, is perceived as being feasible. The identified challenges to implementing clinical testing and vaccinations included time, space, and the need for pharmacy training to administer each test.

### **Directly Observed Therapy**

Although five respondents believed that providing directly observed therapy (DOT) would be a good service, multiple challenges were mentioned by 15 of the respondents. Two of the key issues are space and time. An infrastructure would need to be developed to implement DOT, inclusive of sufficient staffing and funding. Speaking to the financial barrier, a chain pharmacy manager reflected, *"It's probably too costly to have that done on a daily basis for multiple patients. Well, without reimbursement from insurance - no; we couldn't do that."*

### **Pharmacists' Prioritization of Proposed Interventions**

At the end of the structured qualitative interview, we asked respondents to rank the 3 most feasible interventions they would support, given any reservations they may have expressed earlier. Highly supported interventions were those that are relatively simple to implement or that expand the role of pharmacists without posing legal or financial barriers. The highest level of support was for a coupon syringe exchange program (cited by 13 respondents) and educational materials (cited by 10). Six respondents chose giving free syringes; however, the commentaries on this topic emphasized profit and loss, accountability for supplies, and the potential for a negative image of a pharmacy that provides free syringes. One comment made by a chain pharmacy manager is typical of this concern:

...that might say something about the pharmacy's image or something. Oh, you can go to "X" pharmacy and get free syringes- hmm? How would you feel about - would you consider bringing a prescription to that pharmacy... if that's one of

those pharmacies that you know, hands out free syringes? I think the general public - it might not be ready for that.

Six respondents also prioritized safe disposal of used syringes as something they could support. The following interventions were prioritized to a lesser degree by the respondents: providing vaccines, clinical testing (such as HIV testing) or drug treatment (cited by 4 respondents); selling a single syringe or directly observed therapy (cited by 3); teaching safer injection techniques (cited by 2) and providing naloxone (cited by 1).

## Discussion

This study is among the first to document pharmacists' perspectives about the feasibility of providing various prevention interventions besides non-prescription syringe sales in pharmacies. A majority of respondents regard most of the interventions described above as feasible and desirable, although practical challenges were raised. Several overarching themes illustrate these challenges: time, space, sufficient staff, pharmacist training, legal considerations, pharmacist attitudes toward IDUs, and cost and reimbursement issues. Many of these themes were also raised by IDUs in a companion study by Lutnick et al. (2012). Two of these challenges warrant further explanation. The hectic nature of pharmacy practice and limited area in which to conduct private counseling was repeated throughout the majority of the interviews regardless of the type of intervention proposed. Regarding one legal issue in particular, it should be noted that pharmacies would be required to participate in a Narcotic Treatment Program in order for pharmacists to dispense methadone for opioid dependence.

Pharmacists indicated a willingness to engage in content and time intensive intervention practices such as clinical screening, training on safer injection and overdose prevention, administering vaccines and accepting coupons in exchange for free syringes, as long as they receive the appropriate training and remuneration. Chain pharmacies in particular, indicated that many of the interventions would require corporate approval and they thought that some might require changes in laws which currently prohibit pharmacists from performing clinical testing involving blood draws. Three pharmacy managers and 2 pharmacy policy makers perceived a need to assess individual pharmacist's attitudes toward serving IDUs prior to engaging in new services. A minority of respondents raised the concern that some interventions seem to enable the continued use of illicit drugs. Even so, respondents expressed interest in exploring the possibility of providing these services and might support them in the future. Respondents underscored the importance of establishing trust between patients and pharmacists. Ultimately, they view themselves as knowledgeable public health care providers who can and should help IDUs, just as they would help any other patient.

Although we used strategies to select a diverse and heterogeneous group of participants from chain and independent pharmacies located in multiple neighborhoods in San Francisco, the results of this qualitative study cannot be generalized. Thus, the responses which contribute to support or opposition to the proposed interventions are not to be construed as representative of all pharmacists in San Francisco. Further, due to the nature of self-reported intentions and the reality of actual practice, we cannot presume that respondents' stated

preferences reflect the types of interventions they would provide if requested. Given these limitations, the feasibility of providing these interventions warrant consideration in pharmacy settings.

## Conclusion

This study provides concrete examples of the types of preventive services that pharmacists support and consider feasible (i.e., a coupon exchange program and providing educational materials). It also suggests that if time and space barriers are minimized, with appropriate protocols in place, liability issues resolved, and with proper training, some pharmacists will welcome the opportunity to expand their role as critical partners in public health matters related to injection drug use. Organizations that work with IDUs and pharmacists should explore partnerships to implement prevention interventions. Regional and state pharmacy associations are active in promoting continuing pharmacist education; the results of this study may provide useful information for the development of continuing education modules regarding future ancillary services.

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## References

- Appel PW, Ellison AA, Jansky HK, Oldak R. Barriers to enrollment in drug abuse treatment and suggestions for reducing them: Opinions of drug injecting street outreach clients and other system stakeholders. *The American Journal of Drug and Alcohol Abuse*. 2004; 30(1):129–153. [PubMed: 15083558]
- Bernard, HR. *Research Methods in Anthropology, Quantitative and Qualitative Approaches* 2nd Ed. Walnut Creek: CA: Alta Mira Press; 1995. ISBN 0-8038-5244-9 – ISBN 0-8039-5245-7
- Birkhead GS, Klein SJ, Candelas AR, O'Connell DA, Rothman JR, Feldman IS, Tsui DS, Cotroneo RA, Flanigan CA. Integrating multiple programme and policy approaches to hepatitis C prevention and care for injection drug users: a comprehensive approach. *International Journal of Drug Policy*. 2007; 18(5):417–425. [PubMed: 17854731]
- Bluthenthal RN, Kral AH, Gee L, Lorvick J, Moore L, Seal K, Edlin BR. Trends in HIV seroprevalence and risk among gay and bisexual men who inject drugs in San Francisco, 1988 to 2000. *Journal of Acquired Immune Deficiency Syndromes*. 2001; 28(3):264–269. [PubMed: 11694834]
- Bruneau J, Daniel M, Abrahamowicz M, Zang G, Lamothe F, Vincelette J. Trends in human immunodeficiency virus incidence and risk behavior among injection drug users in Montreal, Canada: a 16-year longitudinal study. *American Journal of Epidemiology*. 2011; 173(9):1049–1058. [PubMed: 21362739]
- CDC. [Accessed August 4, 2011] Walgreens, EBONY encourages Americans to “Be Greater than AIDS”. <http://www.cdc.gov/nchhstp/newsroom/WalgreensPressRelease.html>
- Centers for Disease Control and Prevention (CDC). *MMWR Morbidity and Mortality Weekly Report*. Vol. 59. Syringe Exchange Programs-- 2008; 2010. p. 1488-1491.
- Chitwood DD, McBride DC, French MT, Comerford M. Health care need and utilization: a preliminary comparison of injection drug users, other illicit drug users, and nonusers. *Substance Use Misuse*. 1993; 34(4-5):727–746. [PubMed: 10210102]

- Cooper EN, Dodson C, Stopka TJ, Riley ED, Garfein RS, Bluthenthal RN. Pharmacy participation in non-prescription syringe sales in Los Angeles and San Francisco Counties, 2007. *Journal of Urban Health*. 2007; 87(4):543–552. [PubMed: 20549568]
- Cotton-Oldenburg NU, Carr P, Deboer JM, Collision EK, Novotny G. Impact of pharmacy-based syringe access on injection practices among injection drug users in Minnesota, 1998 to 1999. *Journal of Acquired Immune Deficiency Syndromes*. 2001; 2(2):183–192.
- Crawford ND, Blaney S, Amesty S, Rivera AV, Turner AK, Ompad DC, Fullet CM. Individual- and neighborhood-level characteristics associated with support of in-pharmacy vaccination among ESAP-registered pharmacies: pharmacists' role in reducing racial/ethnic disparities in influenza vaccinations in New York City. *Journal of Urban Health*. 2011; 88(1):176, 185. [PubMed: 21279450]
- Cunningham CO, Sohler NL, Cooperman NA, Berg KM, Litwin AH, Arnsten JH. Strategies to improve access to and utilization of health care services and adherence to antiretroviral therapy among HIV-infected drug users. *Substance Use Misuse*. 2011; 46(2-3):218–232. [PubMed: 21303242]
- Fuller CM, Galea S, Caceres W, Blaney S, Sisco S, Vlahov D. Multilevel community-based intervention to increase access to sterile syringes among injection drug users through pharmacy sales in New York City. *American Journal of Public Health*. 2007; 97(1):117–124. [PubMed: 17138929]
- Gibson DR, Brand R, Anderson K, Kahn JG, Perales D, Guydish J. Two- to sixfold decreased odds of HIV risk behavior associated with use of syringe exchange. *Journal of Acquired Immune Deficiency Syndromes*. 2002; 31(2):237–242. [PubMed: 12394803]
- Grabenstein JD, Guess HA, Hartzema AG, Koch GG, Konrad TR. Effect of vaccination by community pharmacists among adult prescription recipients. *Medical Care*. 2001; 39(4):340–348. [PubMed: 11329521]
- Heinzerling KG, Kral AH, Flynn NM, Anderson RL, Scott A, Gilbert ML, Asch SM, Bluthenthal RN. Human immunodeficiency virus and hepatitis C virus testing services at syringe exchange programs: availability and outcomes. *Journal of Substance Abuse Treatment*. 2007; 32(4):423–429.
- Heinzerling KG, Kral AH, Flynn NM, Anderson RL, Scott A, Gilbert ML, Asch SM, Bluthenthal RN. Unmet need for recommended preventive health services among clients of California syringe exchange programs: implications for quality improvement. *Drug and Alcohol Dependence*. 2006; 81(2):167–178. [PubMed: 16043308]
- Jones DL, Waldrop-Valverde D, Gonzalez P, Mack A, Kumar AM, Ownby R, Weiss SM, Kumar M. Mental health in HIV seronegative and seropositive IDUs in South Florida. 2010; *AIDS Care*. 2010; 22(2):152–158. [PubMed: 19662550]
- Kalister H, Newman RD, Read L, Walters C, Hrachovec J, Graham EA. Pharmacy-based evaluation and treatment of minor illnesses in a culturally diverse pediatric clinic. *Archives of Pediatrics and Adolescent Medicine*. 1999; 153(7):731–735. [PubMed: 10401807]
- Kidorf M, King VL. Expanding the public health benefits of syringe exchange programs. *Canadian Journal of Psychiatry*. 2008; 53(8):487–495.
- Kral AH, Anderson R, Flynn NM, Bluthenthal RN. Injection risk behaviors among clients of syringe exchange programs with different syringe dispensation policies. *Journal of Acquired Immune Deficiency Syndromes*. 2004; 37(2):1307–1312. [PubMed: 15385739]
- Lekas HM, Siegel K, Leider J. Felt and enacted stigma among HIV/HCV-coinfected adults, the impact of stigma layering. *Qualitative Health Research*. 2011; 21(9):1205–1219. [PubMed: 21498828]
- Lutnick A, Case P, Kral AH. Injection drug users' perspectives on placing HIV prevention and other clinical services in pharmacy settings. *Journal of Urban Health*. 2012
- Lutnick A, Cooper E, Dodson C, Bluthenthal R, Kral A. Pharmacy syringe purchase test of non-prescription syringe sales in San Francisco and Los Angeles, 2010. *Journal of Urban Health*. 2013; 90(2):276–283. [PubMed: 22718357]
- MacDonald M, Law M, Kaldor J, Hales J, Dore G. Effectiveness of needle and syringe programs for prevention HIV transmission. *International Journal of Drug Policy*. 2003; 14(5/6):353–357.

- Mathers BM, Degenhardt L, Wiessing AH, Hickman M, Matrick P, Myers B, Ambekar A, Strathdee SA. HIV prevention, treatment, and care services for people who inject drugs: a systematic review of global, regional, and national coverage. *The Lancet*. 2010; 20(375):1014–1028.
- Mehta SH, Genberg BL, Astemborski J, Kavasery R, Kirk GD, Vlahov D, Strathdee SA, Thomas DL. Limited uptake of hepatitis C treatment among injection drug users. *Journal of Community Health*. 2008; 33(3):126–133. [PubMed: 18165889]
- Miles, MB.; Huberman, AM. *Qualitative data analysis*. 2nd Ed. Thousand Oaks: CA: Sage Publications; 1994. ISBN-0-8039-4653-9
- Molitor F, Kuenneth C, Waltemeyer J, Mendoza M, Aguirre A, Brockmann K, Crump C. Linking HIV-infected persons of color and injection drug users to HIV medical and other services: the California Bridge Project. *AIDS Patient Care and STDs*. 2005; 19(6):406–412. [PubMed: 15989436]
- Pouget ER, Deren S, Fuller CM, Blaney S, McMahon JM, Kang SY, Tortu S, Andia JF, DesJarlais DC, Vlahov D. Receptive syringe sharing among injection drug users in Harlem and the Bronx during the New York State Expanded Syringe Access Demonstration Program. *Journal of Acquired Immune Deficiency Syndromes*. 2005; 39(4):471–477. [PubMed: 16010172]
- Reich W, Compton WM, Horton JC, Cotler LB, Cunningham-Williams RM, Booth R, Singer M, Leukefeld C, Fink J, Stopka TJ, Corsi KF, Tindall MS. Injection drug users report good access to pharmacy sale of syringes. *Journal of the American Pharmaceutical Association (Wash)*. 2002; 42(6 Suppl 2):S68–S72.
- Rich JD, Hogan JW, Wolf F, DeLong A, Zaller ND, Mehrotra M, Reinert S. Lower syringe sharing and re-use after syringe legalization in Rhode Island. *Drug and Alcohol Dependence*. 2007; 89(2-3):292–297. [PubMed: 17386980]
- Riley ED, Kral AH, Stopka TJ, Garfein RS, Reuckhaus P, Bluthenthal RN. Access to sterile syringes through San Francisco pharmacies and the association with HIV risk behavior among injection drug users. *Journal of Urban Health*. 2010; 87(4):534–542. [PubMed: 20526690]
- Riley ED, Wu AW, Junge B, Marx M, Strathdee SA, Vlahov D. Health services utilization by injection drug users participating in a needle exchange program. *The American Journal of Drug and Alcohol Abuse*. 2002; 28(3):497–511. [PubMed: 12211362]
- Rose VJ, Raymond HF. Evaluation of nonprescription syringe sales in San Francisco. *Journal of the American Pharmacists Association*. 2010; 50(5):595–599. [PubMed: 20833617]
- Rudolph AE, Standish K, Amesty S, Crawford ND, Stern RJ, Badillo WE, Boyer A, Brown D, Ranger N, Orduna JM, Lasenburg L, Lippek S, Fuller CM. A community based approach to linking injecting drug users with needed services through pharmacies: an evaluation of a pilot intervention in New York City. *AIDS Education and Prevention*. 2010; 22(3):238–251. [PubMed: 20528131]
- Singer M, Baer H, Scott G, Horowitz S, Weinstein B. Pharmacy access to syringes among injection drug users: follow-up findings from Hartford, Connecticut. *Public Health Reports*. 1998; 113(Suppl 1):81–89. [PubMed: 9722813]
- Strauss, A.; Corbin, J. *Basics of qualitative research: Techniques and procedures for developing grounded theory*. 2nd ed.. Thousand Oaks: Sage Publications; 1988.
- Walgreens. Free HIV testing at select Walgreens. <http://www.greaterthan.org/2011/06/walgreens-free-hiv-testing-locations>.
- Walton G, Co SJ, Milloy MJ, Qi J, Kerr T, Wood E. High prevalence of childhood emotional, physical and sexual trauma among a Canadian cohort of HIV-seropositive illicit drug users. *AIDS Care*. 2011; 23(6):714–721. [PubMed: 21390877]

**Table 1**

## Pharmacy Stakeholders in San Francisco (N=23)

	%
<b>Gender</b>	
Male	74%
Female	26%
<b>Race</b>	
White	52%
Asian	39%
African American/Black	4%
Multi-racial	4%
<b>Pharmacy Type</b>	
Chain	60%
Independent	40%
<b>Respondent Role</b>	
Pharmacy Manager/supervisor	57%
Staff (clerk, technician, intern)	13%
Store Manager/owner	9%
Policy Maker	22%