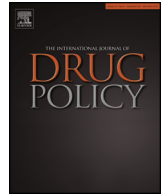




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Research paper

Effect of legal status of pharmacy syringe sales on syringe purchases by persons who inject drugs in San Francisco and San Diego, CA

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ABSTRACT

Background: Sharing blood-contaminated syringes is the main risk factor for acquiring and transmitting blood-borne infections among persons who inject drugs (PWID). To reduce this risk, in 2005, California enacted legislation allowing local health jurisdictions to legalize non-prescription syringe sales after approving a disease prevention demonstration project (DPDP). With San Francisco approving a DPDP immediately and San Diego never approving one, we compared PWID across cities for their use of pharmacies PWID to obtain syringes.

Methods: PWID age 18–30 years old were recruited into separate studies in San Francisco ($n = 243$) and San Diego ($n = 338$) between 2008 and 2011. We used multivariable logistic regression to compare the proportions of PWID who obtained syringes from pharmacies by city while controlling for sociodemographics, injection practices and other risk behaviors.

Results: Overall, most PWID were White (71%), male (63%), and between the ages of 18–25 years (55%). Compared to San Francisco, a smaller proportion of PWID in San Diego had bought syringes from pharmacies in the prior three months (16.9% vs. 49.8%; $p < 0.001$), which remained statistically significant after adjusting for sociodemographic and behavioral factors (adjusted odds ratio = 4.45, 95% confidence interval: 2.98, 6.65).

Conclusions: Use of pharmacies to obtain syringes was greater where it was legal to do so. Public health policy can influence HIV and hepatitis C associated risk among PWID; however, implementation of these policies is crucial for the benefits to be realized.

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Background

Injection drug use has been found to be a major risk factor in acquiring and transmitting blood-borne pathogens, accounting for the majority of hepatitis C virus (HCV) and 8% of new human immunodeficiency virus (HIV) infections in the United States (Centers of Disease Control and Prevention, 2013). These infections can be spread among persons who inject drugs (PWID) through sharing contaminated syringes and drug preparation equipment, high-risk sexual behaviors, and perinatal transmission (Nicolosi, Leite, Musicco, Molinari, & Lazzarin, 1992; Wood et al., 2005). While syringe exchange programs are an important source for sterile syringes for PWID, they often have limited hours of

operation, restrict the number of syringes per exchange, and are inaccessible to PWID without transportation. Thus, pharmacies can be a viable source of sterile syringes for PWID due to the increased availability compared to syringe exchange programs, thereby decreasing the HIV prevalence of those PWID who purchase syringes from a pharmacy (Friedman, Perlis, & Des Jarlais, 2001).

In 2005, California passed Senate Bill 1159, which legalized the sale without a prescription of up to ten hypodermic needles or syringes to persons age 18 years or older for human use, after the local health jurisdiction (typically counties) approved and implemented a Disease Prevention Demonstration Project (DPDP) (California Department of Public Health, 2011a). Once approved, pharmacies within jurisdictions with a DPDP could sell nonprescription syringes after registering with the local health department and agreeing to provide information about accessing drug treatment, testing and treatment for HIV and HCV, and safe disposal of sharps waste. A natural experiment was created since approval was not consistent across the state. San Francisco

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approved a DPDP in the first year, whereas San Diego never approved a DPDP (California Department of Public Health, 2010). In both cities, unrelated studies assessing syringe access among young adult PWID took place concomitantly. Both cities had legal syringe exchange programs (SEPs), although SEP availability in San Francisco was greater than in San Diego. Data collected from San Diego shows that about an average of 300,000 syringes have been disbursed per year in the past five years while San Francisco has been noted to provide 2.3 million clean syringes per year. (Safe Point San Diego Clean Syringe Exchange Program, 2014; San Francisco AIDS Foundation, 2015) By comparing data from both studies, we sought to determine whether the prevalence of purchasing new syringes from pharmacies differed by city after controlling for sociodemographic and behavioral factors that could influence syringe sources used by PWID.

Methods

Study population

Independent studies involving young adult PWID were implemented concurrently in San Francisco and San Diego. Data were combined for this analysis.

San Diego

The Study To Assess Hepatitis C Risk (STHR) was a cross-sectional study to estimate the prevalence and identify correlates of HCV and HIV infections among PWID in San Diego. The study took place between March 2009 and June 2010. Details about the study were published elsewhere (Garfein et al., 2012).

In brief, PWID were identified through venue-based recruitment at San Diego's two SEP locations, street outreach (i.e., word-of-mouth, street intercepts, targeted advertising, and flyers), and respondent driven sampling (RDS) (Heckathorn, 2002). Individuals were eligible if they were 18–40 years old, injected at least once within the past 6 months, currently resided in San Diego County and agreed to serologic testing for HCV and HIV infection. All participants completed a behavioral risk assessment followed by counseling and testing for HCV and HIV infection. Behavioral data were collected using audio computer-assisted self-interviewing (ACASI). The study was approved by the University of California San Diego Human Research Protections Program. The current analysis was also approved by the San Diego State University Institutional Review Board.

For the current analysis STHR participants over 30 year-olds were excluded to match the age range of the San Francisco cohort. Of the 566 participants enrolled in STHR, 338 were between the ages of 18 and 30 years and provided complete responses to questions used in the current analysis.

San Francisco

“U Find Out” (UFO) is a longitudinal cohort study of young adult PWID in San Francisco that has been ongoing since 2000. The study's methods are described elsewhere (Hahn, Page-Shafer, Lum, Ochoa, & Moss, 2001; Hahn et al., 2002; Page et al., 2009). Participants were recruited through street outreach, targeted advertising and word-of-mouth. Eligibility criteria included age ≤ 30 years, reported injecting drugs in the prior month, English as their primary language, and no plans to move from San Francisco within the next three months. At baseline, participants completed an interviewer-administered behavioral risk assessment, followed by testing for HCV infection. Participants who tested HCV negative were eligible for the longitudinal cohort. The questionnaire included demographic information and drug-use behaviors in the prior three months. Participants also received pre- and post-test counseling.

Since enrolment of new cohort participants was temporarily suspended 2009–2010, we obtained a cross-sectional sample of PWID for the current analysis by including baseline data from individuals enrolled between 2008 and 2011 and follow-up data from the earliest visit during that period for individuals already enrolled in the cohort. A total of 245 unique individuals age 18–30 years were included in this analysis.

Data collection

The dependent variable for this analysis is accessing new syringes from pharmacies in the past three months. In STHR, participants were asked, “In the last 3 months, when you used a syringe for injecting drugs, from where did you get the syringe?” and given multiple response options including “from a pharmacist”, which was the first option listed. In UFO, participants were asked, “In the last 3 months, did you personally get any new rigs from a pharmacy (including for other people)?”, to which they could respond “yes” or “no”. From these two questions, we created a common dependent variable for “Purchased syringe from a pharmacy” coded as “yes” or “no”. The primary covariate in this analysis is the location (San Francisco vs. San Diego).

Sociodemographic variables

While an extensive set of variables were collected in each study, the current analysis was restricted to questions that were comparable across the studies. In addition to characterizing the sample in terms of sociodemographics, injection practices, and other risk behaviors, we included variables that were considered potential confounders of the putative association between location and accessing syringes from a pharmacy in the prior three months. While the wording of most variables allowed for direct comparisons, recoding was required for the following variables to make them comparable.

Stable housing

In STHR, participants were asked “In the past 6 months, where did you sleep most of the time?” and allowed to select one item from a list of options. In UFO, participants were asked “What is the MAIN type of place you lived in the last 3 months?” These variables were combined to produce a variable for “Unstable Housing” that was coded as “yes” if participants selected a non-stable place to live (e.g., on the streets, in a shelter, car, shooting gallery, halfway house, jail, etc.). The reference category is “no”.

Syringe exchange program

In STHR, participants were asked “Have you used a local syringe exchange program in the last 3 months?” In the UFO participant questionnaire, “In the last 3 months did you personally get any new rigs from a needle exchange (including for other people)?” Response categories were ‘yes’ and ‘no’ for both studies. Reference category is “no”.

Income source

Income source refers to past six months for STHR participants and past three months for UFO participants. Income source was collapsed into four categories, “income generated from restricted or prohibited activities” (i.e., theft, robbing, stealing, selling syringes, selling drugs or running drugs, trading sex for money, panhandling and other restricted or illicit sources of income), “income from paid work or assistance” (i.e., regular job, temporary employment, public assistance, getting money from friends or family), “income from both sources”, and “income generated from other activities” (i.e., recycling, bartering, stipends, selling crafts). The referent category is income from restricted or prohibited activities.

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