

Utilization and Impact of Syringe Exchange Programs Among Intravenous Drug Users

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Question:

In adult IV drug users, does access to syringe exchange programs lead to reduced infection rates, drug-use cessation, and utilization of available resources?

INTRODUCTION & BACKGROUND

Problem: IV drug use

- In 2003, the United Nations Office of Drugs and Crime estimated about 1.4 million people used injection drugs in North America¹
- The most commonly injected drug is heroin

Problem: Syringe sharing and HIV transmission

- In 2010, 8% of the estimated 47,500 new HIV infections in the US were attributed to injection drug use²
- According to a CDC study, approximately 33% of people who inject drugs (PWID) reported sharing syringes and more than half reported sharing other injection equipment in the past 12 months²
- The sharing of needles has become the most common mode of HIV transmission among injection drug users⁶
- HIV-1 can survive over 4 weeks in a contaminated syringe, remaining infectious to individuals who reuse the syringe in that period of time⁶

Intervention: Syringe Exchange Programs (SEPs)

- When AIDS was first observed among people who inject drugs in 1981, almost all US states had laws criminalizing the possession and distribution of needles and syringes for injecting illicit drugs⁶
- In 1988 the federal government instituted a ban on federal funding of syringe exchange.
- State governments have the responsibility to make policy decisions regarding SEPs
- SEPs are harm reduction programs that operate under the recognition that it is impossible to completely eradicate drug use, and recognize that many drug users fail to totally abstain from IV drug use. The goal of these programs is to reduce the risk that injection drug users can pose to themselves and others⁶
- When funded adequately, SEPs have been proven to be effective in reducing HIV infections as well as getting PWID into treatment programs⁶
- The overall return rate for SEPs throughout 26 studies was 90%⁶. Additionally, crime rates have not been found to increase following the opening of SEPs
- In many parts of the US, SEPs are illegal, and the staff and volunteers of these programs are regularly detained and arrested for providing services to PWID



RESULTS

Citation	Study Question	Study Design	Population	Results	Conclusions	Limitations
Allen, et al.	Do PWID in periods of non-active substance use travel shorter distances to utilize SEPs than their active injecting counterparts?	Ecological Study	Sample of 137 active and former PWID (71% male, 78% African-American, mean age of 46.8)	Mean walking distance between active and former PWID was statistically significant (p < 0.05)	PWID who are active and non-active injectors do not have equivalent access to SEP services.	-Geometric point distance estimation method assumes all persons reside at a geometric centroid point -Walking distance was measured, but individuals may have utilized public or private transportation
Bluthenthal, et al.	Is SEP use associated with cessation of syringe sharing among high-risk injection drug users?	Cohort Study	340 PWID, predominantly African American males, > 40 years (criteria: recent drug injection ["track marks"] and being at least 18 years of age) from 2 different Oakland, Ca neighborhoods.	-Of those who used SEPs at both interviews, 68.3% (43 of 63) reported cessation of syringe sharing -For the PWID that didn't use SEP at either interview, 53.7% (101 of 188) quit sharing syringes at follow-up interview	-PWID utilizing SEPs were more likely to quit syringe sharing than individuals who did not use SEPs.	Due to the secret nature of drug use, finding a randomly selective way to select participants is difficult. Biases associated with using self-report data because of the sensitivity and stigma associated with IV drug use.
Bramson, et al.	Do state laws permitting syringe exchange and public funding for such programs alter the incidence of HIV infection among PWID?	Ecological Study	PWID in Metropolitan Statistical Areas (MSAs) throughout the US (25 states met criteria for study).	-There is a correlation between public funding of SEPs and incidence of HIV -Positive correlation between public funding and: • Number of syringes distributed (R ² = 0.42) • SEPs offering a greater number of other services to PWID (R ² = 0.52)	-Public funding for SEPs was associated with low incidence of HIV -Lack of public funding of SEPs was associated with high incidence of HIV	-HIV incidence was estimated based on newly diagnosed cases among PWID, but there is a lag between occurrence and infection diagnosis -MSA population estimates would have missed any PWID living outside MSAs -Types of drugs injected, availability of substance use treatment programs, and sexual transmission of HIV were not controlled for
Strathdee, et al.	In PWID, does attendance at SEPs promote detoxification?	Cohort study	1,483 PWID, with a median age of 40 years old, predominantly African American males.	In PWID, SEP attendance was associated with entering detoxification in HIV-infected (adjusted odds ratio (AOR) = 3.2) and HIV-uninfected users (AOR=1.4)	SEP utilization is associated with an increased likelihood of entering detoxification	-Although the researchers noted that detoxification is more likely to occur in those using SEPs, this study fails to report long-term drug use cessation rates. -There was some selection bias in selecting study participants, limiting the study's external validity.

METHODS

Information regarding the impacts of needle exchange programs was obtained through a literature search. Specifically, PubMed was utilized to identify studies looking at varied outcomes involving adult IV drug users. Search terms utilized included needle exchange, HIV infection rates, cessation, intravenous drug use, and HIV transmission.

DISCUSSION & CONCLUSIONS

- Overall, SEPs have been shown to be effective in decreasing infection transmission if PWID have access and utilize the programs⁹
- Access and utilization of needle exchange programs appears to be multi-factorial based off of:
 - Individual state policy and
 - Federal funding of needle exchange programs
 - However, it is important to acknowledge that there are limitations to needle exchange programs and that it is not just the presence or lack of needle exchange programs, but social factors that play a part in outcomes as well.
 - It is also important to acknowledge that even if needle exchange programs existed everywhere, it would only help partially in terms of infectious transmission and therefore a multi-dimensional approach should be taken:
 - Sexual health promotion in reducing transmission of infections
 - Providing drug use cessation resources at SEPs for individuals who are contemplating quitting, but don't know how
 - Education on infectious disease transmission and its correlation with IV drug use and sharing needles

Changes in current policies can increase SEP funding

- There is a lack of federal funding towards needle exchange
- State policies are varied, and therefore, there are many states that do not support SEPs.

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