Needle Exchange Evidence Brief

Summary

Needle and Syringe Exchange Programs (NEPs) provide people who inject drugs with the equipment they need to avoid acquiring and/or transmitting blood-borne infections such as HIV and Hepatitis C. NEPs are known to have high needle return rates (>90%). When there are adequate numbers of such services, they can reduce the number of improperly discarded syringes in public and community spaces. Many early NEPs placed restrictions on exchanges (such as requiring 1-for-1 exchanges), but it has been shown that these strategies reduce the effectiveness of NEPs and put communities at elevated risks for harm. Needle stick injuries are not only rare, but carry a low risk of viral transmission. Restricting needle exchanges through policy is an outdated and ineffective practice for addressing substance use in communities. More effective methods for meeting the needs of people who use drugs while maintaining public safety include provisions for adequate NEP services; support for peer-led, community-based programming; installation of needle collection boxes in public spaces and at pharmacies; and promotion of public education campaigns about what to do if discarded needles are encountered (e.g., call needle disposal team; handling procedures).

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Background

Needle and Syringe Exchange Programs (NEPs) are programs in which sterile needles, syringes, and other injection paraphernalia are distributed to and recovered from people who inject drugs (e.g., cocaine, heroin, amphetamines, pharmaceutical opioids, and anabolic steroids). These programs are cost-effective and low-threshold methods to reduce the spread of blood-borne diseases, including hepatitis B, Hepatitis C, and HIV by reducing syringe borrowing and syringe lending.[1] For example, the implementation of an NEPs in New York was associated with a 41% decline in HIV incidence and a 27% decline in Hepatitis C incidence.[2] An additional benefit is fewer discarded syringes in the community. [3]

When incorporated as part of a comprehensive harm reduction strategy, NEPs can build reciprocity and relationships between healthcare providers and people who inject drugs – leading to overall improvements in the health and wellbeing of these individuals, entry intro substance use treatment programs, and reduced injection.[4–9] These considerations make NEPs part of an overall fiscally responsible public health strategy.

Problem Statement

Decision makers sometimes assume that NEPs increase risk to communities by increasing the number of improperly disposed needles. Evidence has shown this assumption to be mistaken. We summarize the relevant evidence below.

Evidence Base

Studies evaluating the impact of NEPs on improper syringe disposal show that cities without NEPs have significantly higher rates of improperly disposed syringes.[3] In a systematic review of 26 articles summarizing research conducted on NEPs, the average needle return rate was found to be 90%, with some regions seeing as much as 112% of needles returned – suggesting that needle exchange programs are not the primary sources of improperly discarded needles and that they are in fact a solution to this problem.[10] Furthermore, due to the fragility of Hepatitis and HIV viral strains, transmission from discarded needles has been shown to be extremely rare.[11,12] No reported cases of HIV acquisition have been reported, and in the case of exposure, prophylactic measures are available to prevent HIV, hepatitis B, and hepatitis C infection.[13-16] For instance, one study estimated that the potential risk for HIV acquisition from a discarded needle is at most 1 in 4,000 – though in reality the risk is

1. Kerr et al. (2010) "Syringe sharing and HIV incidence among injection drug users and increased access to sterile syringes." Am J Public Health.

2. Des Jarlais et al.(2005) "Reductions in hepatitis C virus and HIV infections among injecting drug users in New York City, 1990-2001." AIDS.

3. Tookes et al. (2012) "A comparison of syringe disposal practices among injection drug users in a city with versus a city without needle and syringe programs." Drug Alcohol Depend.

4. Latkin et al. (2006) "Needle exchange program utilization and entry into drug user treatment: is there a long-term connection in Baltimore, Maryland?" Subst Use Misuse.

5. Strathdee et al. (1999) "Needle-exchange attendance and health care utilization promote entry into detoxification." J Urban Health.

6. Shah et al. (2000) "Correlates of enrollment in methadone maintenance treatment programs differ by HIV-serostatus." AIDS.

7. Hagan et al. (2000) "Reduced injection frequency and increased entry and retention in drug treatment associated with needle-exchange participation in Seattle drug injectors." J Subst Abuse Treat.

8. MacNeil et al. (2010). "Impact: a case study examining the closure of a large urban fixed site needle exchange in Canada." Harm Reduct J.

9. Macneil et al. (2011) "Needle exchange as a safe haven in an unsafe world." Drug and Alcohol Review.

10. Ksobiech K. (2004) "Return Rates for Needle Exchange Programs: A Common Criticism Answered." Harm Reduction Journal.

considerably lower, especially when considering advancements in treatment and the relatively rare occurrence of these exposures.[15] Nevertheless, there continues to be significant public interest in ensuring needles are disposed of safely.

Restrictions on NEPs

Despite the benefits of NEPs on reducing the number of improperly discarded needles, distribution restrictions are often proposed to address this problem. However, there is no evidence to suggest that distribution restrictions (for instance, through the closing of NEPs, or requiring 1:1 exchanges) reduce the improper disposal of needles. Conversely, distribution restrictions are known to result in an overall reduction in the number of sterile needles in circulation and impose increased risks for people who use drugs. They introduce new risks by requiring individuals to carry a large number of needles between exchanges or in absence of clean needles to re-use needles.[17,18] Bluthenthal et al. demonstrated that HIV risk is three times higher among those with restricted access to syringes compared to those with adequate access through a non-restrictive program.[19] Clearly, policies that restrict access to sterile needles are potentially very costly policies, being associated with less effective harm reduction and poorer health outcomes.

11. Canadian Pediatric Society. (2008) "Needle stick injuries in the community." Paediatr Child Health.

12. Aragón et al. (1996) "Hepatitis B prevention and risk of HIV infection in children injured by discarded needles and/or syringes]. Aten Primaria."

13. Slinger et al. (2000) "Community-acquired needle stick injuries in Canadian children: Review of Canadian Hospitals Injury Reporting and Prevention Program data from 1991 to 1996." Paediatr Child Health.

14. Babl et al. (2000) "HIV postexposure prophylaxis for children and adolescents." Am J Emerg Med.

15. Russell et al (2002). "A prospective study of children with community-acquired needlestick injuries in Melbourne." Journal of Paediatrics and Child Health.

16. Thomas et al. (2006) "Multiple needle-stick injuries with risk of human immunodeficiency virus exposure in a primary school." Pediatr Infect Dis J.

17. Kaplan et al. (1994) "A circulation theory of needle exchange." AIDS.

18. Heller et al. (2009) "The syringe gap: an assessment of sterile syringe need and acquisition among syringe exchange program participants in New York City."

19. Bluthenthal et al. (2007) "Examination of the association between syringe exchange program (SEP) dispensation policy and SEP client-level syringe coverage among injection drug users." Addiction.

20. Strike et al. (2013) "Best Practice Recommendations for Canadian Harm Reduction Programs that Provide Service to People Who Use Drugs and are at Risk for HIV, HCV, and Other Harms: Part 1"

Recommendations

Based on existing evidence and best practices,[20,21] cost- effectiveness considerations, and the context of high rates of overdose in Canada, limiting the availability and effectiveness of NEPs for people who use drugs is not a wise policy. Decision makers should instead evaluate whether they have developed a sufficiently comprehensive harm reduction plan to ensure proper distribution and retrieval. Comprehensive needle distribution programs have been implemented in many jurisdictions (e.g., Ontario)[22] to ensure adequate coverage and facilitate the proper disposal of needles and syringes. Based on these models, we recommend that: [22,23,24]

- decision-makers develop relationships with community members who use drugs, public health coalitions, and harm reduction researchers in order to build trust and facilitate community-based, peer-led outreach, education, and needle recovery;
- needle disposal boxes be made available in restrooms, parks, and other areas where people may safely discard of needles;
- pharmacy take back programs allow individuals to return needles to either their source origin or to a different origin;
- school-based curriculums and advertising campaigns provide education to the general public on what to do if they encounter a discarded needle; and
- hazardous waste disposal personnel be made available by email or hotline to retrieve discarded syringes identified by community members.

21. Bluthenthal et al. "Recommended Best Practices For Effective Syringe Exchange Programs In The United States"

22. Strike et al. (2006) Ontario needle exchange programs: Best practice recommendations.Available from: http://www.ohrdp.ca/wp-content/uploads/pdf/Best_Practices_Report.pdf

23. Kanellakos. (2008) Needle Exchange Program - Update Ottawa, Ontario: Community and Protective Services Committee; 2008.

24. Weeks et al. (2004 "Needle Exchange Programs (NEPs) FAQs" Canadian Centre on Substance Abuse.