

Syringe Exchange Programs in Prisons: Reviewing the Evidence

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Injection Drug Use and HIV/AIDS

Injection drug use has been associated with severe health and social harms throughout the world. [1, 2] High rates of disease, death, crime, and the accompanying costs are drug-related harms experienced throughout the world. In terms of public health, injection drug use has been identified as a key risk characteristic for HIV infection in many countries around the world.[3] Explosive epidemics of HIV/AIDS have emerged in various settings, demonstrating that HIV can spread rapidly once established within communities of injection drug users (IDUs). [4, 5] The dynamics of IDU-driven HIV epidemics present unique challenges, giving policy makers and health authorities little time to respond in an effort to contain outbreaks of HIV infection.

Injection Drug Use, HIV/AIDS and Prisons

Incarceration is a common event among IDUs. Evidence from the United States indicates that approximately 80 percent of IDUs have a history of imprisonment,[6] and a 12-city World Health Organization (WHO) study of HIV risk behaviour among IDUs found that between 60 and 90 percent of respondents reported a history

of imprisonment since commencing drug injection.[7] Available evidence indicates that a substantial proportion of drug users inject drugs while in prison, with 50% or more of drug users from several countries reporting injection while in prison.[8-11] In one study in Russia where 20% of prisoners reported injecting drugs while in prison, 14% of these individuals stated that their first injection occurred within a penal institution.[12]

Worldwide, levels of HIV prevalence within inmate populations tend to be much higher than in the general population [13]. HIV prevalence among prisoners varies considerably across settings, although several countries have reported HIV prevalence among prisoners to be between 10-25%.[14-17] The jurisdictions with the highest HIV-prevalence in prisons (apart from countries with large heterosexual HIV epidemics) are areas where HIV infection in the general community is “pervasive among IV drug users, who are dramatically over-represented in correctional institutions.”[18] Incarceration has also been associated with HIV infection in several countries,[19-21] and evidence of rapid spread of HIV infection has been observed within specific prison settings.[11, 22, 23]

Responding to Injection Drug Use and HIV/AIDS

Despite the potentially explosive dynamics of IDU-driven HIV epidemics, there is evidence indicating that HIV epidemics among IDUs have been prevented, stabilized, and reversed in various locations throughout the world.[24, 25] One review of settings with large populations of IDUs suggested that some cities have managed to maintain low HIV seroprevalence among IDUs due to:

- the implementation of HIV prevention measures while seroprevalence was still relatively low;
- the implementation of syringe exchange programs; and
- the provision of outreach services to IDUs.[24]

Other important factors in addressing IDU-driven HIV epidemics include involving drug users in the design and implementation of interventions, the provision of substitution therapies (e.g., methadone), and ensuring that measures are responsive to changes in risk practices and provide adequate coverage.[26, 27]

There is also evidence, however, to indicate that many HIV epidemics have occurred among populations of IDUs due to a failure on the part of governments to quickly implement appropriate interventions.[1] In some settings, a failure to respond quickly to emerging HIV epidemics among IDUs has been followed by more generalized epidemics in which non-IDU members of communities are increasingly becoming infected through sexual contacts.[3]

While effective HIV prevention interventions exist, some of these remain unpopular among politicians.[28] In some countries, such as the United States, effective HIV prevention interventions have not been implemented despite widespread support from scientific and medical bodies in these countries.[29, 30] Among the effective albeit controversial programs are “needle exchange” or “syringe exchange” programs.

Needle Exchange Programs

HIV prevention interventions for IDUs typically focus on preventing blood contact during injection. Therefore, a cornerstone of HIV prevention for IDU involves making sterile syringes available through needle exchange programs (NEPs). Syringes have been distributed to IDUs in various ways, including through fixed locations, outreach workers, mobile units (e.g., vans), and vending machines.

Benefits of NEPs

NEPs have been found to reduce risk behavior, HIV and hepatitis C incidence, and be associated with substantial savings in health care expenditures. [31-35] The specific biologic action of NEPs is a form of vector control, by reducing the time that needles spend in circulation.[27] NEPs are generally regarded as the single most important factor in preventing HIV epidemics among IDUs.[25] An international investigation of NEPs found that in cities with needle exchange or distribution programs HIV seroprevalence decreased by 5.8 percent per year, while HIV prevalence increased by 5.9 percent per year cities without such programs.[25] NEPs have also been found to increase access to various health care programs, including addiction treatment and voluntary HIV testing.[36, 37] Several studies have also demonstrated that the implementation of NEPs have not lead to increases in drug use locally.[38, 39]

Misinterpretation of a Canadian study

In some circles, two Canadian studies demonstrating an association between HIV infection and use of NEPs have been misinterpreted and misused by people opposed to NEPs.[4, 40] The studies did create confusion, albeit primarily among politicians and not scientists. Some have claimed that the Vancouver study demonstrates a causal relationship between HIV infection and syringe exchange, despite the fact that the study merely demonstrated an association between frequent use of syringe exchange and HIV prevalence. The authors of the paper stated that “our study was not intended to

evaluate the effectiveness of NEP...the fact that frequent NEP attendance was associated with HIV prevalence should not be interpreted as causal” (p. F64).[4]

Given the confusion created by the study, the relationship between frequent syringe exchange attendance and HIV incidence or infection was studied in a follow-study titled “Do Needle Exchange Programmes Increase the Spread of HIV Among Injection Drug Users? An Investigation of a Vancouver Outbreak”.[41] The paper, published in the prestigious journal *AIDS*, demonstrates that the previously observed association between syringes exchange attendance and HIV prevalence reflected a “selection bias” – meaning that syringe exchanges do not cause HIV infection, but rather high risk individuals are the people most likely to frequently attend a syringe exchange program. Consistent with this, the authors of the second paper pointed out that frequent syringe exchange attendees were more likely than non-frequent syringe exchange attendees to live in unstable housing, to inject frequently, inject cocaine, work in the sex trade, inject in “shooting galleries” and to have recently been incarcerated. These characteristics have previously been found to be associated with HIV infection in several studies, and the authors calculated that the rate of HIV infection found among frequent syringe exchange attendees was at the level that would be expected given their risk profile. The authors did investigate the unlikely explanation that syringe exchange prompted increases in risk behaviour, but found no evidence to support this explanation. The authors also ruled out the explanation that syringe exchange prompted the formation of social networks.

Summary

In summary, the evidence to date indicates that NEPS are the most effective HIV prevention intervention that can be offered to IDUs. A wealth of scientific studies suggests that NEPs have been associated with significant declines in HIV incidence, as well as higher uptake of health services, including drug treatment. As well,

investigation has shown that many of the concerns expressed in regard to NEPs (NEPs prompting increases in drug use) have proven to be unfounded and in some cases contrary to empirically-derived evidence.

Needle Exchange Programs in Prisons

An increasing number of penal institutions have established and evaluated needle and syringe exchange or distribution programs.[42] In Switzerland, the first prison-based NEP was implemented in 1992.[43] Since then NEPs have been introduced in penal institutions in Germany, Spain, Moldova, Kyrgyzstan, and Belarus. [44] A recent international review suggests that Italy, Portugal, and Greece are also considering introducing NEPs within prisons.[45] Prison-based NEPs have been implemented in prison systems in Western and Eastern Europe. The NEPs have also been implemented in small and large prisons, prisons for men and women, and in maximum and medium security prisons.

The evidence

Reviews of prison-based NEP evaluations have been highly favourable, indicating that all of the programs reviewed were successful. [45, 46] The programs examined distributed syringes via a number of means including prison health care staff, external community agencies, vending machines, drug counseling services, trained peer outwork workers, or correctional staff. The evaluations indicated that the prison-based NEPs were associated with stable or decreased levels of drug use, substantial declines in syringe sharing as well as no new cases of HIV or hepatitis C infection. Similarly it is noteworthy that the negative consequences of NEP that had been projected by prison officials and staff were not observed in any of the settings. Syringes were not used as weapons against guards or inmates, increases in injection drug use were not observed, and transition into injection drug use among prisoners was not reported. Finally, prison-based NEPs have not undermined efforts to reduce drug use through abstinence-based programs and security measures, and staff attitudes towards NEP were also said to be to be generally positive.

Although most prison-based NEPs were implemented on a pilot basis, these programs have, in most countries, been greatly expanded. The clearest example of this is in Spain, where following an initial pilot of a prison-based NEP, the Director General for Prisons ordered that NEPs be implemented in all but one of the sixty-nine prisons under the jurisdiction of the Spain's Ministry of Interior. Despite these successes, NEPs were recently closed in a few German prisons. These closures, however, were not due to any problems with the NEPs, and they were the undertaken by newly-elected governments, against the wishes of prison staff and administration, who expressed their support of NEPs publicly.[46]

Success factors

While the growing favourable evidence concerning prison-based NEPs is encouraging, prisons should be aware that the efficacy of NEPs can be greatly compromised if access to needles is unduly limited. Recent studies have indicated that restrictive practices (e.g., limited hours of operation) can constrain the effectiveness of NEPs.[47] Therefore, in order to benefit from the protective effects of NEP, prisons must ensure that prisoners have easy access to adequate numbers of syringes. Of the more than 50 prisons that have introduced needle exchange programs have each had to devise their own method of ensuring adequate coverage of the NEP program. The most obvious example of this comes from Moldova, where prisoners were trained to provide syringes and HIV prevention information to their peers after it was found that the previous system of distributing syringes through the medical services was not reaching enough prisoners.

Moldova has also demonstrated the NEPs can be implemented in countries in which prisoners are housed in barrack-style accommodations and share sleeping quarters. While this type of prison is different from prisons in countries like Switzerland and Germany where prison-based NEPs were first established, prison-based NEPs have now been successfully run in prisons with

barrack-style accommodations since 1999. As indicated previously, the prison-based NEP services in Moldova are provided by prisoners who are trained and supervised by medical staff to provide sterile syringes and HIV prevention support to their peers. Initially, 8 peers were trained to service four different sites in the prison (i.e., two peers per site). This way, the NEP services could be provided on 24-hour basis in a highly confidential manner.

Making bleach available is not enough

Some have suggested that provision of bleach in prisons may be simpler and less controversial than providing sterile syringes. However, while making bleach available is important, it is not enough. While the efficacy of using bleach to eliminate HIV has been well established,[48] bleach is not fully effective in reducing hepatitis C infection,[49] and therefore is not regarded as the gold standard for preventing the transmission of infectious diseases among IDUs. As well, previous studies indicate that many IDUs have trouble remembering how to properly disinfect syringes using bleach,[50] and evidence from Australia indicates that a substantial proportion of prisoners do not avail themselves of bleach even when it is made available.[51] The probability of effective decontamination is further decreased in prison as cleaning is a time consuming procedure, and some prisoners may be reticent to engage in any activity that increases the risk that prison staff will be alerted to their illicit drug use. Further, prisoners often manufacture syringes out of materials such as ballpoint pens and sometimes will alter conventional syringes to make them easier to conceal. Such syringes may be more difficult to effectively disinfect with bleach.[52] In conclusion, while offering bleach to prisoners may represent a positive step forward, problems with the uptake of these programs, as well as the limited effectiveness of bleach in preventing hepatitis C infection suggests that this intervention alone is clearly an inadequate response to drug-related harms in prisons.

Funding

While many prison medical services, particularly in Eastern Europe and fSU countries, are challenged by a lack of appropriate funding, prison-based NEPs have been shown to be inexpensive to operate, and have been successfully implemented in low-income countries, such as Moldova, Kyrgystan, and Belarus. As well, there is considerable cost avoidance associated with prison-base NEPs, as the cost of treating HIV/AIDS or providing care and support to those infected is substantially greater than the cost associated with preventing new HIV infections through the provision of sterile syringes.[53]

Conclusion

A wealth of scientific evidence has shown that needle exchange programs (NEPs) are the most effective intervention available for the prevention of HIV infection among injection drug users (IDUs). As well, NEPs have been associated with increased access to care and treatment and with substantial cost-savings. The concerns raised about NEPs have been shown to be unfounded. NEPs have not led increased levels of risk behaviour or drug use in places where they have been implemented.

NEPs have increasingly been established in prison settings. There are now six countries with prison-based NEPs, and other countries are considering adding this to their HIV prevention efforts. Evaluations of prison-based NEPs have been highly and consistently favourable, showing

that the NEPs were associated with substantial declines in HIV risk behaviour (e.g., syringe sharing), stable or decreased levels of drug use, and stable or reduced levels of HIV prevalence. These programs have also been generally well-accepted by prison staff, including some who were initially opposed to such programs. As well, none of the adverse consequences that were projected by some have been observed. In particular, syringes have not been used as weapons, and drug use has not increased following the implementation of NEPs. Finally, the establishment of NEPs has not compromised efforts to reduce drug use through abstinence-based programs or security measures.

Given the existing evidence of the growing problems of HIV/AIDS and injection drug use in prisons in Eastern Europe and the former Soviet Union, it is clear that the time to act is now. A failure to implement effective HIV prevention measures could result in further spread of HIV infection among IDUs, the larger prison population, and could potentially lead to generalized epidemics in the local non-IDU population. Further spread of HIV would lead not only to greater suffering for affected individuals and their families, but also would be result in substantial and avoidable health care costs. Despite the controversy concerning NEPs, the evidence is clear. NEPs are effective, and should be considered to be an essential response to the dual epidemics of injection drug use and HIV/AIDS.

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