



National Collaborating Centre  
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# evidence review

## Programs for Injection Drug Users—A Harm Reduction Approach

### What is a Harm Reduction Approach?

Harm reduction does not aim to eliminate drug use, but focuses on minimizing the personal and social harms associated with drug injection. Most interventions aimed at injection drug use embrace the harm reduction approach. This approach also aims to reduce the cost of drug use, which translates to a more expensive health care system (1). Because there is no evidence that harm reduction approaches promote drug abuse, the resistance of some governments to implementing harm reduction approaches has been criticized (2,3).

*This evidence review is part of a series on HIV prevention and control produced by the National Collaborating Centre for Infectious Diseases. It is intended to inform public health practitioners and community-based workers and guide their practice.*

### What is the Prevalence of Injection Drug Use?

Injection drug use is a major risk factor for HIV in seven of the 10 UNAIDS regions, including North America (2). It is believed that by 2010, the epicentre of the global HIV epidemic could shift from Sub-Saharan Africa to Asia and other areas, where injection drug use makes a much greater contribution to the HIV epidemic (2). Asia has an estimated 8.3 million people living with HIV. The epidemic is highly heterogeneous but injection drug use is an important risk factor across the continent (4,5). For example, people who inject drugs (IDU) account for almost half of the 650,000 people living with HIV in China (4).

### Highlights

- There is strong evidence to support the harm reduction approach for preventing HIV among IDU.
- No evidence has been found that harm reduction programs promote drug use.
- There is strong evidence that needle exchange programs reduce the use of dirty needles and needle sharing, which in turn reduces HIV transmission.

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In Canada, IDU represent the exposure category with the second highest proportion of HIV infections after the men who have sex with men (MSM) category (6). IDU accounted for 16.9% (estimated 9,860 adults) of prevalent HIV infections and 14% (estimated 350 to 650 adults) of new HIV infections in 2005 (6). The Public Health Agency of Canada notes that this rate of new infections is unacceptably high, despite a small decrease in proportion since 2002. IDU are not only at risk of being infected with HIV, but they frequently spread HIV to their sexual partners and children (1,7).

### **How Many IDUs have Access to HIV Prevention Services?**

Less than approximately 20% of IDU around the world have access to HIV prevention services and less than perhaps 10% in Eastern Europe and Central Asia (4). The lack of access to HIV prevention services for IDU is partially due to a lack of political leadership and counterproductive laws and policies in some countries (4,8-11). It is increasingly important and urgent to scale up effective HIV prevention interventions for IDU in Canada and throughout the world.

**Tailoring interventions to a specific group of IDU may be most effective in altering norms to attain sustainable health protective behaviours.**

### **What Harm Reduction Strategies are Effective?**

Approaches to HIV risk reduction among IDU include drug abuse treatment, educational programs, HIV testing and counselling, street-based outreach by peer educators, community-level interventions for safer sex and drug related behaviours, syringe exchange programs, substitution treatment, and provision of safe injection sites (12,13).

There have been numerous high-quality reviews and meta-analyses of studies on harm reduction interventions to prevent HIV infection among IDU (7,12-21). Most of this research has focused on needle syringe programs (NSPs), which subsequently have the strongest evidence of effectiveness (21). Wodak and Cooney (20) conducted the first international review of the effectiveness of NSPs, including syringe exchange, syringe decontamination and disposal, syringe pharmacy and vending machine distribution programs, and injecting paraphernalia legislation to reduce HIV infection among IDU. The authors' conservative interpretation of the findings revealed "compelling evidence of effectiveness, safety, and cost-effectiveness [of NSPs], consistent with seven previous reviews conducted by or on behalf of U.S. government agencies" (2). Furthermore, NSPs were shown to fulfil six of the nine Bradford Hill criteria: strength of association, replication of findings, temporal sequence, biological plausibility, coherence of evidence, and reasoning by analogy; and six additional criteria: cost-effectiveness, absence of negative consequences, feasibility of implementation, expansion and coverage, unanticipated benefits, and application to special populations (2).

Supervised injection facilities are the most recent addition to harm reduction interventions. North America's first and only medical facility, called Insite, opened in Vancouver in 2003 (9). A three-year evaluation of Insite reveals large reductions in public drug use, syringe sharing, and publicly discarded syringes. The evaluation also shows the use of the facility was associated with a 30% increased use of detoxification services, as well as other medical, educational, and community services. It was also associated with increased rates of long-term addiction treatment initiation and reduced injecting. There were no increases in drug dealing near the facility, drug acquisition crime, rates of new IDU, or drug use relapse among former IDU (21).

Other harm reduction approaches for IDU are supported by evidence, but impacts of some of these interventions need to be more cautiously interpreted because of a limited number of studies and reviews. Methadone maintenance treatment for IDU also reduces injecting use, sharing of injection equipment, and incidence of multiple sex partners and sex trading (22).

### **What about HIV Behaviour Interventions for IDUs?**

HIV prevention interventions within drug treatment programs show more favourable results in reducing HIV risk than drug treatment programs alone (18). Educational programs have the potential to promote change in a wide range of drug use and sexual risk behaviours; they have particularly positive effects on decreasing sharing or lending drug paraphernalia and increasing bleach use (17). Meta-analysis of 37 randomized controlled trials evaluating 49 independent HIV risk reduction interventions conclude that interventions promote condom use and entry into drug treatment, reduce injection and non-injection drug use, and reduce sex trading for drugs (15).

### **What about Social and Peer-based Interventions?**

Network analyses have attempted to understand the relationships between social support and risk behaviours of IDU. Characteristics of social networks and their influence on risk behaviours vary depending on numerous factors, including type of injecting drug used (23), sources and forms of social support (24), and types of risk behaviours targeted (25). Thus, tailoring interventions to a specific group of IDU may be most effective in altering norms to attain sustainable health protective behaviours. Community outreach, which relies on peers to initiate education and support, is a commonly used strategy that has been effective in reaching out-of-treatment IDU, providing means for risk-reducing behaviour changes, and reducing HIV incidence among participants (16).

### **What are the Gaps in the Literature?**

It may be beneficial to adopt a comprehensive perspective on HIV prevention among IDU. The multidisciplinary team model of HIV care provides support services (such as case management, transportation, mental health, and chemical dependency) in addition to clinical care. This approach has led to an increase in patients' access to and retention in HIV primary care (26).

Though there is a gap in the literature specific to IDU, a support and care model for IDU may be similarly effective in getting much needed services to this marginalized group. There is also a need to focus on primary prevention of injection drug use. Evidence suggests that injection-related risk behaviours may be "established as early as the onset of injection initiation, supporting the need to educate non-injectors of the harms associated with unsafe injection practices" (27). These efforts should target adolescents, especially girls and young women, who are more at risk of initiating injection drugs at an early age (28,29).

The results of a comparative international study of harm reduction programs show that NSPs reduce needle sharing.

### **What Recommendations Can Be Made?**

Overall, there is consistent evidence that harm reduction approaches prevent HIV infection among IDU. None of the studies reviewed for this report indicated negative impacts resulting from the interventions, such as an increase in drug use. Strong evidence supports needle syringe programs, while other interventions vary in the quantity and quality of research that support them. The results of a comparative international study of harm reduction programs show that NSPs reduce needle sharing. However, universal access to these types of programs for IDU will require strong government leadership, support from the community at large, and prioritized, staffed, and funded advocacy programs from the public health system (8).



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**National Collaborating Centre  
for Infectious Diseases**

**Centre de collaboration nationale  
des maladies infectieuses**

Tel: (204) 943-0051

Fax: (204) 946-0927

Email: [nccid@icid.com](mailto:nccid@icid.com)

[www.nccid.ca](http://www.nccid.ca)

413-455 Ellice Avenue

Winnipeg, Manitoba

Canada R3B 3P5

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