

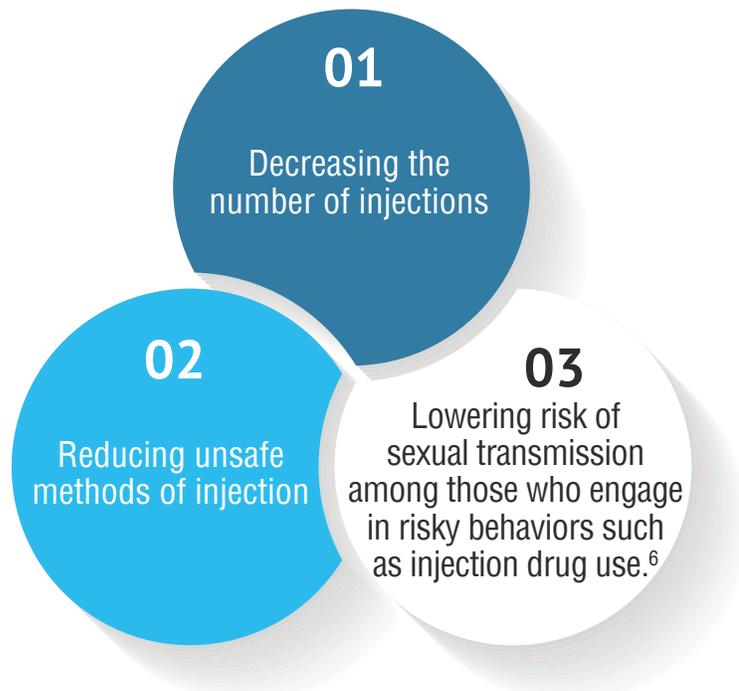


OPIOID USE AND HIV PREVENTION AMONG PEOPLE WHO INJECT DRUGS

Over 1.2 million individuals in the US are currently infected with human immunodeficiency virus (HIV), among whom 12.8% are unaware.¹ In 2014 alone, approximately 44,000 individuals were infected with HIV. While HIV incidence rates have slowly declined over the years, the risk of infection is still very high in certain populations, such as in people who inject drugs (PWID). In this population, the prevalence of HIV is around 16%.^{2,3} In 2010, 8% of new HIV infections in the US were due to injection drug use. Of this, men and women accounted for 62% and 38% respectively.²

Over the past two decades in the United States, there has been a growing epidemic in prescription opioid analgesic abuse. Not only has this led to an increase in poisoning and deaths related to drug overdose, it has also increased the number of persons who inject drugs.⁴ Needle sharing increases the risk of HIV transmission among PWID. A recent investigation of an HIV outbreak in the small town of Austin, Indiana found that all of the new HIV cases were from a network of people who injected opioids and were infected with a common HIV strain.⁴ Higher rates of HIV prevalence among PWID consequently increases the risk of sexual transmission in the general population.⁵

There are several interventions targeted towards the reduction of HIV transmission among PWID. These interventions center around three approaches:



Research shows that a combination of interventions is most effective in reducing the risk of HIV infection among PWID.

In collaboration with





DECREASING NUMBER OF INJECTIONS

Opioid Substitution Therapy (OST) is widely believed to be the most effective standalone intervention in terms of reducing injection drug use. OST constitutes “prescribing a drug whose action is similar to that of the drug of dependence but whose use is less risky.”⁷ Methadone and buprenorphine are the drugs most widely used in OST. Prescription, with supervised self-administration, reduces the number of injections among PWID by reducing the amount of needle sharing.⁷

Studies show that injecting drug users currently undergoing OST exhibit fewer health risks than those who used OST in the past or non-OST users. Among drug users, those using OST reported fewer non-fatal overdoses, lower likelihood of injecting over 100 times, and reduced tendency of injecting heroin daily or almost daily in the previous month than those not using OST.⁸

OST consists of the following components:

- 1 Using non-injected medications to replace illicit injected drugs
- 2 Using longer-acting medications to break the cycle of intoxication and withdrawal
- 3 Providing regular dosing that is adjusted for each individual, which will help prevent withdrawal and reduce the effect of each opioid dose
- 4 Retaining opioid dependent individuals in treatment
- 5 Delivering treatment in a community setting, which maintains family and community connections
- 6 Addressing the physical aspect of drug dependence after ensuring social stability and health in opioid dependent drug users⁶

OST limits the number of injections and the number of contaminated syringes and injection equipment shared, therefore limiting risk of infection among PWID and mitigating rates of transmission between HIV positive and HIV negative users.⁷ There has also been evidence that OST helps modify behaviors that increase the risk of transmitting HIV in PWID, such as sharing of injecting equipment and injecting drug use.⁷ *Psychosocial treatment and behavioral interventions* consist of psychologically-based interventions, such as cognitive behavioral treatment and therapeutic communities. These therapies occur either one-on-one or in groups/couples to reduce drug dependence and injection, which in turn can limit risky behaviors that lead to HIV transmission.

Involving an individual’s network has proven to be more effective in engaging patients in behavior change.⁶ In addition, preliminary studies show that those who have undergone these interventions have exhibited less willingness to initiate non-users into injecting behaviors, thus protecting non-users from contracting HIV through contaminated needles. More comprehensive study must be undertaken before the extent of the effectiveness of the therapies can be determined.⁶

REDUCING UNSAFE METHODS OF INJECTION

Research shows that needle/syringe exchange is a successful method of harm reduction among PWID. An estimated one of every 125 injections with an HIV-contaminated needle results in HIV infection.⁷ Reducing the number of contaminated needles in circulation minimizes the risk of HIV transmission among PWID.



While this method does not solve the issue of drug dependence and injection, the intervention focuses on controlling the spread of disease, promoting safe injection, removing contaminated needles from use, and limiting the use of each needle.⁶ *Counseling PWID on safe injection* can be an effective method of mitigating the risky behaviors of patients. These types of interactions can strengthen the trust between patient and clinician, allowing patients to feel more comfortable discussing risky behavior such as drug dependence and needle sharing.⁶

LOWERING RISK OF SEXUAL TRANSMISSION

Anti-retroviral Therapy (ART) reduces risk of sexual transmission of HIV to uninfected individuals by suppressing HIV viral loads. Consistent viral load suppression reduces a patient’s infectiousness. NIH recommends use of ART for all HIV infected individuals, regardless of CD4 count. See Table 1 for NIH guidelines on monitoring viral load and CD4 counts in HIV+ patients.⁹

Table 1: Recommendations on the Indications and Frequency of Viral Load and CD4 Count

CLINICAL SCENARIO	VIRAL LOAD MONITORING	CD4 COUNT MONITORING
Before initiating ART	At entry into care (AIII)	At entry into care (AI)
	If ART initiation is deferred, repeat before initiating ART (AIII).	If ART is deferred, every 3 to 6 months (AIII) ^b
	In patients not initiating ART, repeat testing is optional (CIII)	
After initiating ART	Preferably within 2 to 4 weeks (and no later than 8 weeks) after initiation of ART (AIII); thereafter, every 4 to 8 weeks until viral load suppressed (BIII).	3 months after initiation of ART (AIII)
After modifying ART because of drug toxicities or for regimen simplification in a patient with viral suppression	4 to 8 weeks after modification of ART to confirm effectiveness of new regimen (AIII).	Monitor according to prior CD4 count and duration on ART, as outlined below.
After modifying ART because of virologic failure	Preferably within 2 to 4 weeks (and no later than 8 weeks) after modification (AIII); thereafter, every 4 to 8 weeks until viral load suppressed (BIII). If viral suppression is not possible, repeat viral load every 3 months or more frequently if indicated (AIII).	Every 3 to 6 months (AI)
During the first 2 years of ART	Every 3 to 4 months (AIII)	Every 3 to 6 months ^a (BII)
After 2 years of ART (VL consistently suppressed, CD4 consistently 300-500 cells/mm ³)	Can extend to every 6 months for patients with consistent viral suppression for >2 years (AIII).	Every 12 months (BII)
After 2 years of ART (VL consistently suppressed, CD4 consistently > 500 cells/mm ³)		Optical (CIII)
While on ART with detectable viremia (VL repeatedly > 200 copies/mL)	Every 3 months (AIII) or more frequently if clinically indicated. (See Virologic Failure and Suboptimal Immunologic Response section)	Every 3 to 6 months (AIII)
Change in clinical status (e.g., new HIV clinical symptom or initiation of interferon, chronic systemic corticosteroids, or antineoplastic therapy)	Every 3 months (AIII)	Perform CD4 count and repeat as clinically indicated ^c (AIII)

^a Monitoring of lymphocyte subsets other than CD4 (e.g., CD8, CD19) has not proven clinically useful, adds to cost, and is not routinely recommended (BIII).

^b Some experts may repeat CD4 count every 3 months in patients with low baseline CD4 count (<200-300 cells/mm³) before ART but every 6 months in those who initiated ART at higher CD4 cell count (e.g., >300 cells/mm³).

^c The following are examples of clinically indicated scenarios: changes in a patient’s clinical status that may decrease CD4 count and thus prompt initiation of prophylaxis for opportunistic infections (OI), such as new HIV-associated symptoms, or initiation of treatment with medications which are known to reduce CD4 cell count.

Note. Retrieved from NIH’s Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents



Barrier Contraceptive Use protects against STI transmission. The use of barrier contraceptives such as condoms and dental dams should always be encouraged, especially among PWID. Risk of HIV transmission through sexual intercourse increases when an individual or their partner injects drugs, since drugs can hinder an individual's ability to make safe choices.⁹

COMBINATION APPROACH

Addressing the issue of HIV infection among PWID through Opioid Substitution Therapy, Needle Exchange, and Anti-Retroviral Therapy has shown to be a highly effective combination. This model is projected to reduce incidence of HIV infection among PWID by over 50% when administered in high coverage.⁶ Government agencies, such as the Centers for Disease Control and Prevention (CDC), and international organizations, like the United Nations, recommend this combined approach.^{10,11} Clinicians should focus on counseling patients to engage in safer drug use, by prescribing Opioid Substitution Therapy and encouraging participation in needle exchange programs, while continuing regular anti-retroviral therapy for those infected with HIV.

BUILDING ORGANIZATIONAL CAPACITY

The CDC-funded HIV CBA center at CAI can help your organization conduct needs assessment, identify resources, plan for implementation and provide you with training and capacity building support that leads to a robust and successful program for high-impact HIV prevention among PWID. The HIV CBA Center is able to shape trainings to the specific needs of your healthcare organization. The approach includes capacity of the providers and support staff in areas such as:

- HIV Screening in Key Populations – Targeting Strategically
- How to Work Effectively with Drug Users
- Developing Comfort in Discussing Difficult Topics
- HIV Treatment Adherence
- Working Affectively with Active Drug Users

For more information on how to obtain our capacity building services to incorporate into your Health Care Organization, visit cba.caiglobal.org.



References

1. "HIV in the United States: At A Glance." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 29 Sept. 2015. Web. 08 July 2016.
2. "Basic Statistics." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 16 Mar. 2016. Web. 08 July 2016.
3. Mathers, Bradley M., Louisa Degenhardt, Benjamin Phillips, Lucas Wiessing, Matthew Hickman, Steffanie A. Strathdee, Alex Wodak, Samiran Panda, Mark Tyndall, Abdalla Toufik, and Richard P. Mattick. "Global Epidemiology of Injecting Drug Use and HIV among People Who Inject Drugs: A Systematic Review." *The Lancet* 372.9651 (2008): 1733-745. Web.
4. Peters, Philip J., Pamela Pontones, Karen W. Hoover, Monita R. Patel, Romeo R. Galang, Jessica Shields, Sara J. Blosser et al. "HIV Infection Linked to Injection Use of Oxymorphone in Indiana, 2014–2015." *New England Journal of Medicine* 375, no. 3 (2016): 229-239.
5. Gowing, Linda, Michael F. Farrell, Reinhard Bornemann, Lynn E. Sullivan, and Robert Ali. "Oral substitution treatment of injecting opioid users for prevention of HIV infection." *The Cochrane Library* (2011).
6. Degenhardt, Louisa, Bradley Mathers, Peter Vickerman, Tim Rhodes, Carl Latkin, and Matt Hickman. "Prevention of HIV Infection for People Who Inject Drugs: Why Individual, Structural, and Combination Approaches Are Needed." *The Lancet* 376.9737 (2010): 285-301. Web.
7. Gowing, Linda R., Matthew Hickman, and Louisa Degenhardt. "Mitigating the Risk of HIV Infection with Opioid Substitution Treatment." *Bulletin of the World Health Organization Bull. World Health Organ.* 91.2 (2013): 148-49. Web.
8. Gjersing, Linn, and Anne Line Bretteville-Jensen. "Is Opioid Substitution Treatment Beneficial If Injecting Behaviour Continues?" *Drug and Alcohol Dependence* 133.1 (2013): 121-26. Web.
9. "Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents." (n.d.): n. pag. AIDSInfo. NIH. Web.
10. "A Public Health and Rights Approach to Drugs." UNAIDS.org. United Nations, 2015. Web. 15 July 2016.
11. "Syringe Services Programs (SSPs) Developing, Implementing, and Monitoring Programs" CDC.gov. CDC, Feb. 2016. Web. 15 July 2016.

Additional Resources

1. Douaihy, Antoine, Peter Veldkamp, and Jody Glance. "Combination Approaches to HIV Prevention." *Encyclopedia of AIDS* (2014): 1-6. Web.
2. "Fact Sheets." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 14 Mar. 2016. Web. 08 July 2016.
3. Hyshka, Elaine, Steffanie Strathdee, Evan Wood, and Thomas Kerr. "Needle Exchange and the HIV Epidemic in Vancouver: Lessons Learned from 15 Years of Research." *International Journal of Drug Policy* 23.4 (2012): 261-70. Web.
4. Jhanjee, Sonali. "Evidence Based Psychosocial Interventions in Substance Use." *Indian J Psychol Med Indian Journal of Psychological Medicine* 36.2 (2014): 112. Web.
5. Mayer, K. "Update on HIV Prevention." *International Journal of Infectious Disease* (2016): n. pag. Web. 8 July 2016.
6. Otiashvili, David, Gvantsa Piralishvili, Zura Sikharulidze, George Kamkamidze, Sabrina Poole, and George E. Woody. "Methadone and Buprenorphine-naloxone Are Effective in Reducing Illicit Buprenorphine and Other Opioid Use, and Reducing HIV Risk Behavior—Outcomes of a Randomized Trial." *Drug and Alcohol Dependence* 133.2 (2013): 376-82. Web.
7. "Substance Abuse/Use." Substance Abuse/Use. US Department of Health and Human Services, n.d. Web. 08 July 2016.
8. Hurley SF, Jolley DJ, Kaldor JM. Effectiveness of needle-exchange programmes for prevention of HIV infection. *The Lancet.* 1997 Jun 21;349(9068):1797-800.
9. Wodak A, Cooney A. Do needle syringe programs reduce HIV infection among injecting drug users: a comprehensive review of the international evidence. *Substance use & misuse.* 2006 Jan 1;41(6-7):777-813.
10. Hyshka E, Strathdee S, Wood E, Kerr T. Needle exchange and the HIV epidemic in Vancouver: lessons learned from 15 years of research. *International Journal of Drug Policy.* 2012 Jul 31;23(4):261-70.
11. Gupta GR, Parkhurst JO, Ogden JA, Aggleton P, Mahal A. Structural approaches to HIV prevention. *The Lancet.* 2008 Sep 5;372(9640):764-75.
12. Mayer KH, Beyrer C. HIV epidemiology update and transmission factors: risks and risk contexts—16th International AIDS Conference epidemiology plenary. *Clinical Infectious Diseases.* 2007 Apr 1;44(7):981-7.
13. "HIV Infection and HIV-Associated Behaviors Among Persons Who Inject Drugs — 20 Cities, United States, 2012." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 20 Mar. 2015. Web. 15 July 2016.