Harm reduction for HIV prevention

KEY POINTS

- Harm reduction programmes aim to prevent the spread of HIV and reduce other harms associated with drug use
- Approaches include providing easy access to sterile needles to reduce infections from needle sharing, and replacing illegal opiates (such as heroin) with prescribed medicine such as methadone or buprenorphine under medical supervision
- Australia, Switzerland and the UK have reduced the number of new HIV infections among people who inject drugs to practically zero through harm reduction initiatives
- Despite the proven benefits, harm reduction services are not available in many countries and access is insufficient in most
- Stigma and discrimination, the ‘war on drugs’, and lack of sustainable funding are all preventing roll out of effective harm reduction programmes

Explore this page to find out more about the impact of harm reduction on HIV, types of harm reduction programmes, community engagement in harm reduction, and barriers to effective harm reduction programming for HIV prevention.

Harm reduction refers to strategies that aim to reduce the harms associated with injecting drug use.1

The earliest forms of harm reduction promoted abstinence from drug use and put reducing its occurrence at the centre of substance use policy and interventions.2

The concept of harm reduction was re-invented in the early 1980s at the beginning of the HIV epidemic when healthcare workers started to provide clean syringes to people who inject drugs (sometimes referred to as PWID) rather than solely trying to achieve abstinence.3
Since then, there has been slow but steady progress in implementing harm reduction programmes as a component of the response to the HIV epidemic, with a wide range of initiatives tried to date in a variety of settings.\textsuperscript{4 5}

Despite overwhelming evidence of the effectiveness of harm reduction for preventing the spread of HIV and reducing other harms associated with drug use, global harm reduction service coverage remains insufficient. Of 158 countries that report drug use, only 91 of them explicitly reference harm reduction in their national policies (58%).\textsuperscript{6} Moreover, of the countries where harm reduction services are available few have achieved sufficient coverage.

The World Health Organization (WHO), the United Nations Office on Drugs and Crime (UNODC) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) strongly recommend harm reduction as an approach to HIV prevention, treatment and care for people who inject drugs. Specifically, they advocate for a comprehensive package including:

- needle and syringe programmes (NSPs)
- opioid substitution therapy (OST) and other drug dependence treatment
- HIV testing and counselling (HTC)
- antiretroviral treatment (ART)
- prevention and treatment of sexually transmitted infections (STIs)
- condom programmes for people who inject drugs and their sexual partners
- targeted information, education and communication for people who inject drugs and their sexual partners
- vaccination, diagnosis and treatment of viral hepatitis
- prevention, diagnosis and treatment of tuberculosis (TB).\textsuperscript{7}

Impact of harm reduction on HIV

Worldwide, the benefits of harm reduction have been proven. Early implementers of harm
reduction programmes such as Switzerland, the UK and Australia have reduced the number of new HIV infections among people who inject drugs to practically zero.8

More recently, the government of Nepal cut the HIV prevalence among people who inject drugs from 68% in 2002 to 6.3% in 2011 by scaling up its harm reduction programme. Likewise, the implementation of harm reduction programmes in Xichang City in China cut the number of new HIV cases among people who inject drugs by 75%.9

Since 2008, HIV prevalence among people who inject drugs in Ukraine has more than halved with the roll-out of harm reduction programmes. In contrast, the same period saw a surge in HIV prevalence among people who inject drugs, from 1% to 41.6%, in the Philippines where there has been little implementation of harm reduction programmes.10

Case study: Harm reduction in Ukraine

In Ukraine, the first harm reduction programmes were introduced in 2004. Since then there has been a significant expansion of harm reduction services, with more than 212,800 people who inject drugs reached in 2015 and more than 19 million syringes distributed. During this period national HIV prevalence rates have reduced dramatically – falling from 41.8% in 2008 to 19.7% in 2014.11

Despite this success, harm reduction services in Ukraine are at risk. Support from the Global Fund, on which these services rely, is scheduled to end in 2017. The Ukrainian government recently committed to coverage of some methadone but at present, this modest contribution will not be sufficient to plug the gap left by the Global Fund or reach the necessary coverage levels.12

Cost effectiveness of harm reduction programmes

Research has shown that harm reduction programming is cost-effective. For example, in Australia every dollar invested in needle and syringe programmes (NSPs) returned four dollars in healthcare savings. A study carried out across eight countries in Eastern Europe and Central Asia found that investments in NSPs returned savings of between 1.6 and 2.7 times the original investment by preventing HIV and hepatitis C infections.13

Types of harm reduction programmes

Needle and syringe programmes (NSPs)

Needle and syringe programmes (NSPs) allow people who inject drugs to obtain new, sterile needles and other drug paraphernalia at little or no cost to reduce the risk of HIV infection. NSPs have the added bonus of preventing the transmission of other blood-borne viruses such as hepatitis B and C.14

NSPs can also serve as a crucial gateway to other HIV services. People who inject drugs engage with NSPs on a consistent basis creating a number of opportunities to provide access to other forms of relevant healthcare such as opioid substitution therapy (OST), HIV testing and counselling (HTC), and treatment for HIV, tuberculosis (TB) and hepatitis.15

NSPs can be delivered through a range of means including pharmacies, vending machines and outreach services.16 With high incarceration levels among people who inject drugs, access to
sterile injecting equipment and NSP services are a vital component of healthcare in prisons. In 2016, NSPs were available in 90 countries worldwide.

Opioid substitution therapy (OST)

Opioid substitution therapy (OST) is the practice of replacing an illegal opiate (such as heroin) with a prescribed medicine such as methadone or buprenorphine that are typically administered under medical supervision. In 2016, 80 countries were implementing OST.

In many places, OST has proved highly effective in reducing injecting drug use among opioid-dependent people, limiting their risk of HIV transmission. Providing sufficient access to OST could prevent 130,000 new HIV infections outside sub-Saharan Africa every year.

OST has also been found to improve access and adherence to ART, reduce instances of overdosing and associated mortality, lessen criminal activity and more generally, improve the physical and mental health of people who inject drugs. OST has also been found to reduce the risk of HIV transmission from pregnant women dependent upon drugs to their infants.

The benefits of OST have been demonstrated in developing countries as well as developed ones. One study reported an average treatment retention of 70% across Asia, Eastern Europe, the Middle East and Oceania. All countries also saw reductions in opioid use, HIV risk behaviour, criminal activity as well as improvements in general wellbeing.

Studies have found a difference in adherence between those on methadone (MET) and those on buprenorphine (BUP). One randomised trial reported a 76% completion rate among those on methadone compared to 46% among those taking buprenorphine. It also found that sexual risk behaviours decreased equally among women on both treatment regimes but increased for men on buprenorphine and decreased for men on methadone.

Despite evidence of the effectiveness of OST, 78 countries and territories that report injecting drug use did not have such programmes in place in 2014. Since 2012, only two countries (Burkina Faso and Turkey) have newly implemented OST. Twenty-five countries have scaled up OST provision, but Estonia, Lithuania, Serbia, Mexico and Australia have decreased provision.

Slow-release morphine

In some countries, including Switzerland, Austria and Slovenia, patients are treated with slow-release morphine as an alternative to methadone. Slow-release morphine has been found to be at least as effective as methadone in treating people dependent on opioids.

Drug consumption rooms

Drug consumption rooms allow people who inject drugs to inject under medical supervision. They enable an immediate response to overdosing and decrease the transmission of blood-borne diseases such as HIV through access to sterile injecting equipment and education on safe injection practices. They can also provide access to healthcare as well as HIV testing and counselling.

To date, evidence regarding the effectiveness of drug consumption rooms as a method of reducing HIV transmission is limited. However, they are known to be effective in increasing uptake of detoxification and treatment services.

As of 2014, there were 88 drug consumption rooms worldwide, although only two of these were outside of Europe (one in Canada and one in Australia).
Case study: Insite, Canada

In 2003, Insite in Vancouver became North America's first drug consumption room. Since its inception, the facility has been a source of controversy between the government and public health researchers.\[36\]

In 2008, the facility was threatened with closure under drug trafficking and possession laws. However, a ruling by the Supreme Court of British Columbia said that Canada's Controlled Drugs and Substances Act violated an individual's constitutional rights:

"It denies the addict access to a health care facility where the risk of morbidity associated with infectious disease is diminished, if not eliminated...While there is nothing to be said in favour of the injection of controlled substances that leads to addiction, there is much to be said against denying addicts health care services that will ameliorate the effects of their condition." 37

In 2013, new legislation again threatened the existence of Insite and other proposed drug consumption rooms in the country.\[38\] In contrast, a 2012 report highlighted the need for a similar facility in Toronto based on positive results from Insite. Since Insite was opened in 2003, it has intervened in nearly 5,000 overdoses, with no deaths. In 2015, it made 464 referrals to onsite detox services out of 6,532 unique visits.\[39\]

Preventing overdose

An estimated 70,000–100,000 people die due to opioid overdose each year.\[40\] Naloxone is an opiate antagonist that reverses the effects of an opioid overdose. Its use in drug consumption rooms is increasingly effective, as immediate administration by supervisors reduces overdose deaths, and encourages future attendance at drug consumption rooms.\[41\] By controlling the harm caused by injecting drugs in a safe environment, the risks of HIV transmission are lessened.

One study in Sydney, Australia found that the opening of just one drug consumption room that offered supervised injections and naloxone for overdoses, significantly decreased the burden on the local ambulance service.\[42\]

The need for access to naloxone to be scaled-up is more pressing than ever. Combining this with effective behaviour change communication, clean needles and OST has huge public health benefit potential.\[43\]

Other drug dependence treatment

Other interventions are recommended where non-opioid drugs such as amphetamines, cocaine, sedatives and hypnotics are highly used and where OST remains unavailable.

Drug dependence treatment helps prevent HIV transmission by reducing the sharing of needles and syringes and high-risk sexual behaviours associated with drug intoxication as well as providing HIV education and other HIV-related healthcare.\[44\]

For example, cognitive behavioural interventions, a type of counselling which focuses on changing patterns of thinking and behaviour, have been shown to decrease amphetamine use.\[45\] Likewise, medically supervised drug withdrawal (detoxification) can assist with the withdrawal process as well as reduce the discomfort of withdrawal when used in conjunction with OST.\[46\] \[47\]
Pharmacy sale of syringes

Many argue that pharmacies are an important but under-used resource in preventing the transmission of HIV and other blood-borne infections among people who inject drugs. Pharmacists are some of the most accessible healthcare professionals and are in an ideal position to reach this group who are often socially marginalised and wish to remain anonymous.48

Pharmacists can fulfil a number of harm reduction roles including the sale of condoms, educating on safer sex practice, selling clean needles and syringes, and dispensing oral methadone for opioid dependence.49

Research has shown how the sale of over-the-counter syringes to people who inject drugs can reduce HIV prevalence among this group. One study of 96 metropolitan areas in the USA recorded an average HIV prevalence of 13.8% among people who inject drugs in areas with anti-over-the-counter laws compared to 6.7% across areas without such laws.50

A different study from Tallinn, Estonia, reported that people who inject drugs found pharmacies convenient for acquiring syringes due to their extended opening hours and local setting. However, the study also reported stigma and discrimination from both pharmacists and other customers, with the idea of distributing free syringes to people who inject drugs negatively received by some pharmacists.51

Safer crack smoking resources

Smoking drugs can lead to open sores, burns or cuts on the lips and in the mouth. Blood from these wounds can contaminate the ‘stem’ - usually a small metal pipe - and be passed on to the next smoker. If two smokers both have open sores then there is a risk of HIV transmission.52

As a result, some harm reduction agencies have distributed 'safe crack kits' to reduce the sharing of pipes and the use of broken ones. Like other harm reduction programmes, they enable drug users to access the appropriate healthcare and support.53

One study from Vancouver found that 12 months after kit distribution, 79% and 59% of recipients used supplied items such as mouthpieces and condoms respectively. However, while access to these specific safer use items increased noticeably, the impact of the kits on wider safer use practice was limited.54

Amphetamine harm reduction initiatives

In recent years, there has been a large increase in the use of amphetamines, with South Africa, the USA and Brazil notable examples.

Amphetamines cause an elevated sex drive, and there is evidence of an increase in unprotected sex among people taking the drug. This is most commonly reported among men who have sex with men, transgender people, sex workers, and among attendees of ‘chem-sex’ parties predominately in European cities. As a result, the risk of HIV transmission from amphetamine-fuelled unprotected sex is rising.55

Unlike opiates, there are currently no drug dependency treatments for amphetamines, although trials are on-going.56
Community engagement

Peer and community-led provision of harm reduction services has been proven to increase the uptake of these services in a variety of countries and settings.

Case study: Peer-led harm reduction

In one district in Vietnam where 75% of the people living with HIV were people who inject drugs, programming moved from a traditional approach (using behaviour change communication, commodities provision and voluntary counselling and testing referral) to a peer-driven intervention approach with web-based outreach.

Two outreach workers (one from an HIV outpatient clinic and one from a methadone maintenance therapy clinic) recruited people who inject drugs, providing them with 'coupons' and other incentives and referrals for HIV testing services (and, where necessary, care and treatment). These initial recruits (or 'seeds') pass coupons to other people in their own networks, including other people who inject drugs and their sexual partners.

The programme resulted in improvements in tracking people through services, and increases in testing and diagnosis—from 94 people tested (3.2% of whom tested positive) in 2013 to 483 people (6.8% of whom tested positive) in 2015. In 2016, of the 10.9% of people tested who were living with HIV, 41.6% were enrolled in treatment. 57

Barriers to harm reduction for HIV prevention

Harm reduction has been demonstrated as an effective and efficient way of preventing the transmission of HIV and other blood-borne viruses among drug users. However, a number of barriers prevent its implementation.

Stigma, discrimination, criminalisation, and the war on drugs

A 'war on drugs' approach still prevails in many countries. Law enforcement authorities continue to criminalise the possession of needles and syringes and mount 'crackdowns' on people who inject drugs even when they are seeking treatment or visiting healthcare centres for clean needles and syringes or other services. Criminalisation drives people who inject drugs away from health and HIV services and has a negative effect on HIV prevention and treatment outcomes.58 59

Stigma and discrimination in healthcare centres also has the same effect. As well as having a detrimental impact upon people receiving treatment, stigma and discrimination later impacts upon those in the recovery process who may be drug-free but are still subject to prejudice in areas such as employment because of their history of drug use. Many advocate for stigma reduction initiatives as part of harm reduction programmes.60

The harm reduction funding crisis

One of the biggest barriers to harm reduction initiatives is a lack of sustainable funding, which forces programmes to downsize or run at a much reduced rate.61 62

International donors provide the majority of financial resources for harm reduction programmes to prevent HIV in low- and middle-income countries, with the Global Fund the single largest funder in this area.63 However, many middle-income countries where most of the people who inject drugs
live, do not qualify for Global Fund support, while still more are projected to become ineligible in the coming years. Even in the European Union, where harm reduction approaches began, funding for domestic harm reduction programmes is uncertain and being cut in some places.

With funds from international donors increasingly focused on low-income countries, people who inject drugs, among other key affected populations, in middle-income countries are in danger of being left behind in the global HIV response. While domestic investment in HIV programmes is increasing in some countries, few are prioritising HIV prevention for key populations. Among those governments reporting to UNAIDS on HIV prevention spending, only 3.3% of total HIV prevention funds were directed towards programmes for people who inject drugs.

At last estimate in 2010, international donors spent just US$ 160 million on HIV prevention programmes for people who inject drugs - 7% of US$ 2.3 billion required. By contrast, around US$ 100 billion is spent annually on global drug enforcement and control. Shifting just 2.5% of this money away from drug enforcement to harm reduction programmes could reduce new HIV infections among people who inject drugs by 78%, alongside a 65% drop in HIV-related deaths by 2030.

**Global Harm Reduction Spending**

A minor shift in spending from global drug enforcement to harm reduction could significantly reduce HIV infections and deaths among people who inject drugs by 2030.

**Limited provision in prisons**

The provision of harm reduction programmes remains extremely limited in prisons and other closed settings. In 2016, 52 countries were providing OST in prisons, while only eight countries were implementing NSPs in closed settings.

The lack of NSP services is particularly concerning because of the high rates of injecting drug use and the complex interaction of HIV, hepatitis and TB in prisons worldwide.

2. European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) (2010) 'Harm reduction: evidence, impacts and challenges, Chapter 4: Perspectives on harm reduction - what the experts have to say'

3. European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) (2010) 'Harm reduction: evidence, impacts and challenges, Chapter 4: Perspectives on harm reduction - what the experts have to say'


5. European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) (2010) 'Harm reduction: evidence, impacts and challenges, Chapter 4: Perspectives on harm reduction - what the experts have to say'


39. AVERT (2017) 'Spotlight on supervised drug consumption rooms as the USA looks to open its first facility' (accessed 14/04/2017)


53. CATIE (2011) 'Safer crack smoking'


60. US Department of Health and Human Services (2009) 'Guiding Principles and Elements of Recovery-Oriented Systems of Care'[pdf]

61. STOPAIDS & Harm Reduction International (2014) 'Factsheet: Harm reduction'[pdf]


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