

# Harm Reduction: A Low-Cost, High-Impact Set of Interventions<sup>1</sup>

Harm reduction is one of the most rigorously evaluated and best proven public health interventions. A growing body of literature demonstrates the cost of the failure to act and attests to the cost effectiveness of harm reduction programs such as needle and syringe exchange and opioid substitution therapy. Research shows the returns on investment in effective harm reduction are amongst the highest in public health.

## What Is Harm Reduction?

Harm Reduction refers to policies, programmes and practices that aim primarily to reduce the adverse health, social and economic consequences of the use of legal and illegal psychoactive drugs, including HIV transmission through injecting drug use.<sup>2</sup>

Harm reduction effectively reduces drug-related harms through:

- Services that promote safer drug use (e.g. needle and syringe exchange programmes, safer injecting facilities, naloxone for overdose prevention)
- A range of drug dependence treatment options (including opioid substitution therapy)

- Information, education and communication programmes (including peer outreach)
- Advocating for changes in laws, regulations and policies that increase harms or hinder harm reduction efforts (e.g. criminalisation of drug use and possession)
- Participation of people who use drugs in policy-making, programming, and monitoring & evaluation

## Does harm reduction provide ‘value for money’?

As strategies for HIV prevention and for reducing drug-related harms, harm reduction interventions such as needle and syringe exchange programmes and substitution therapy are supported by consistent and

scientifically rigorous evidence. This includes robust evidence of cost-effectiveness, even in populations with low HIV prevalence among people who inject drugs.<sup>14-15</sup>

## Interventions

### Opioid Substitution Therapy (OST)

Opioid substitution therapy (OST) with methadone and buprenorphine has been shown to reverse withdrawal symptoms, and reduce illicit opioid use, drug injecting and sharing of injecting equipment.<sup>19-20, 21</sup> People who inject drugs who are enrolled in substitution treatment also have higher adherence to antiretroviral treatment (ART) compared to individuals who actively use but are not enrolled in substitution programmes.<sup>22</sup>

There are proven financial and health benefits to investing in OST implementation and scale up:

- Cost-effectiveness analyses suggest that expanding existing substitution therapy programs is cost-effective and can play an important role in preventing HIV transmission and improving the length and quality of life for people who inject drugs.
- The benefit return for methadone maintenance treatment is estimated to be around four times the treatment cost. According to the US National Institute on Drug Abuse, “Research has

demonstrated that methadone maintenance treatment is beneficial to society, cost-effective, and pays for itself in basic economic terms.”<sup>23</sup>

- One study estimates the cost-effectiveness of methadone maintenance treatment for HIV prevention at US\$6300 – US\$10,900 per quality-adjusted life years (QALY) gained. This is significantly lower than the lifetime cost of treating the infection<sup>24</sup>
- A 2007 systematic review and economic evaluation carried out by NHS found that substitution therapy with both methadone and buprenorphine provided more health gain and were less costly than no drug treatment<sup>25</sup>
- A recent analysis in the Ukraine found that methadone substitution therapy (MMT) is a highly cost-effective option for the mixed HIV epidemic in that country. Access to MMT provided the added benefit of infections averted.<sup>26</sup>

### Needle and syringe exchange programmes (NSPs)

Needle and syringe exchange programmes (NSPs) have been shown to effectively reduce HIV infection among people who inject drugs, and do not increase illicit or injecting drug use.<sup>27-28</sup> In 2004, the WHO concluded that increasing the availability of sterile injecting equipment for people who inject drugs reduces HIV infection substantially and cost-effectively.<sup>29</sup>

There are proven financial and health benefits to investing in NSP implementation and scale up:

- Empirical studies have shown that early and progressive implementation of NSP is most cost-saving.
- For instance, the cost of NSPs to Australian governments from 1988-2000 was \$AUD 122 million

and this prevented 25,000 HIV infections by year 2000; and by 2010, it prevented 4,500 AIDS deaths. Savings were estimated to be between \$AUD 2.4 billion (discounted at 5% per annum) or \$AUD 7.7 billion (unadjusted).<sup>30-31</sup>

- A second cost-effectiveness analysis in Australia in 2009 found that for every dollar invested in needle and syringe exchange, more than four were returned in health care savings.<sup>32-33</sup>
- Studies on NSP cost-effectiveness have also found favourable results, particularly in saving foregone HIV lifetime treatment costs, in the United States<sup>34</sup>, Belarus<sup>35</sup>, China<sup>36</sup> and Ukraine<sup>37</sup>

**LESS THAN 10% OF THE ESTIMATED NEED FOR HARM REDUCTION FUNDING GLOBALLY IS PRESENTLY BEING MET.** In a recent cost analysis<sup>10</sup>, Harm Reduction International estimated that US\$160 million was spent on HIV-related harm reduction in low- and middle-income countries in 2007, of which US\$136 million (90%) comes from international donors. This falls far short of the US\$2.13 billion that UNAIDS estimates was needed in 2009, and the \$3.2 billion needed in 2010.<sup>11</sup> Current expenditure

works out at less than three US cents per day per person injecting drugs in low- and middle-income countries, which is clearly insufficient. Expenditure on harm reduction is estimated at less than 10% of the total drug policy budget (e.g. approximately 9% in the Netherlands<sup>12</sup>, 3% in Australiia<sup>13</sup> and substantially less in low and middle income countries). Between 14 and 20 times more funds are necessary in order for HIV to be effectively reduced in this population.<sup>10-17</sup>

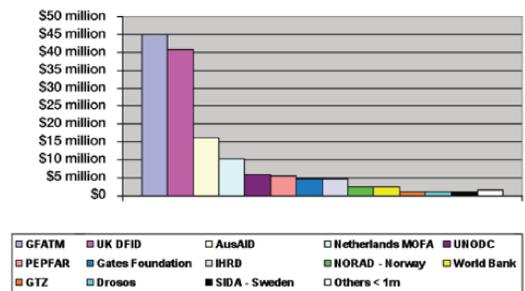
**INJECTING DRUG USE REMAINS A MAJOR DRIVER OF HIV INFECTION GLOBALLY.** Of the 33.3 million people living with HIV globally, an estimated three million are people who inject drugs.<sup>3</sup> They account for 30% of HIV infections outside of sub-Saharan Africa, and up to 80% of infections in Eastern Europe and Central Asia.<sup>4</sup>

In order to have an impact on HIV and other harms faced by people who inject drugs, essential harm reduction interventions including needle and syringe exchange programmes (NSPs) and opioid substitution therapy (OST) must be scaled up.<sup>5-7</sup> This will only be possible with substantially increased investment from governments and international donors.<sup>8</sup>

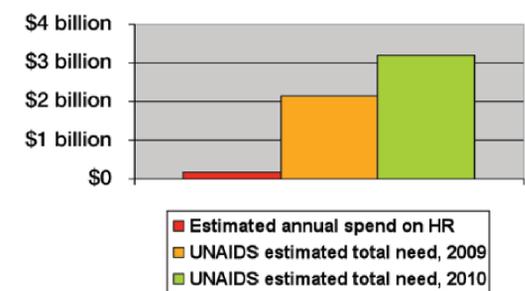
**PREVENTION OF HIV INFECTION IS CHEAPER THAN TREATMENT OF HIV/AIDS.** The Commission on AIDS in Asia concluded that the comprehensive package of HIV harm reduction interventions costs approximately \$39 for every disability-adjusted life year saved. This is considerably less than anti-retroviral treatment, which costs approximately \$2,000 per life year saved.<sup>9</sup>

Quality, integrated harm reduction programmes (i.e. needle and syringe exchange programmes, access to ART, substitution therapy, access to condoms, pharmacy provision of syringes etc.) that consistently reach a majority of people who inject drugs are most effective in reducing syringe sharing and HIV transmission and provide the best value for money compared to the provision of only one intervention on its own.<sup>17-18</sup>

### Estimated expenditure on harm reduction interventions - 2007



### The harm reduction resource gap



Charts based on Stimson G. and Lines R. 'Bridging the Gap: An analysis of global spend and resourcing need for harm reduction.' In Global State of Harm Reduction 2010: Key Issues for Broadening the Response. Ed. Catherine Cook. International Harm Reduction Association.

## Recommendations<sup>38</sup>

1. More global resources are needed for harm reduction.
2. Resources for harm reduction and HIV services for people who use drugs should be proportionate to need within countries.
3. Donors should set targets for the proportion of spending going to HIV-related harm reduction, with 20% of total global funds allocated for HIV prevention for low and middle income countries going to harm reduction.
4. Global expenditure on harm reduction must be properly monitored by UNAIDS and by civil society.
5. Better estimates are required on the resources needed for harm reduction.
6. New ways of delivering harm reduction services may be needed.
7. More resources are required to advocate for and create demand for harm reduction via the Global Fund's community system strengthening and/or establishing a global community fund for harm reduction.

**References**

1. This presentation aims to provide a general overview rather than a systematic overview of the cost effectiveness and value for money of harm reduction interventions using selected examples drawn from the cost analysis evidence. For additional information or questions, please contact: Claudia Stoeckli at [claudia.stoeckli@hria.net](mailto:claudia.stoeckli@hria.net).
2. Wilson D. (2011) Effectiveness and cost effectiveness of harm reduction. Priority presentation. 20th International Harm Reduction Conference, Lisbon.
3. UNAIDS (2010) Global Report on the AIDS Epidemic. Geneva: The Joint United Nations Programme on HIV/AIDS.
4. Mathers B et al (2008) The global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet*, 372 (9651), 1753-1765.
5. Mathers B et al (2013) HIV prevention, treatment, and care options for people who inject drugs: A systematic review of global, regional, and national coverage. *Lancet*, 375, 1033-1035 (doi:10.1016/S0140-6736(13)60222-2).
6. Cook C. (2010) The Global State of Harm Reduction: Key Issues for Broadening the Response. London: International Harm Reduction Association.
7. WHO, UNODC, UNAIDS (2008) Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users. Geneva: World Health Organization.
8. For additional resources please see: <http://www.hria.net/who-use-drugs/>
9. Harm Reduction International (2011) What is harm reduction. [www.hria.net/what-is-harm-reduction/](http://www.hria.net/what-is-harm-reduction/).
10. Stimson G, Cook C, Bradley J, Rio Navarro J, Lantieri R, Baroni D. (2010) Three Centa a Day is Not Enough: Resourcing Harm Reduction in a Global Basin. London: International Harm Reduction Association.
11. UNAIDS (2010) *Financial Resources Required to Achieve Universal Access to HIV Prevention, Treatment, Care and Support*. UNAIDS Inter-agency Task Team on Young People. World Health Organization, Geneva.
12. Reuter P. (2009) *What Drug Policy Cost: Estimating Government Drug Policy Expenditures*. Adelaide, 10/20, 310-322.
13. Moore, T. (2009) *What is Australia's 'Drug Budget'?* The Policy Mix of 60+ Drug-related Government Spending in Australia. Drug Policy Modelling Project Monograph No. 075. Melbourne: Turning Point Alcohol and Drug Centre.
14. de Wit, A. & Boj, J. (2004) Cost Effectiveness of Needle and Syringe Programs: A Review of the Literature. In J. Jager, W. Lintrop, M. Roca, M. M. Thurns, & C. Hwang (Eds.), *Needles, C and Injecting Drug Use: Impact, Costs and Policy Options* (BMCC Monographs 7) (200-244). Lisbon: European Monitoring Centre for Drugs and Drug Addiction.
15. James, L., Potham, L., Curran, E., Mwangi, J. & Bello, M. (2008) A Review of the Effectiveness and Cost Effectiveness of Needle and Syringe Programs for Injecting Drug Users. Final Full Report - November 2008. Liverpool: Liverpool John Moores University.
16. Commission on AIDS in Asia (2008) *Resolving AIDS in Asia: Creating an Effective Response. New Data, Old Questions*. Phnom Penh: UNODC, UNAIDS (2008) *Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users*. Geneva: World Health Organization.
17. World Health Organization (2004) *Evidence for Action: Technical Papers: Effectiveness of sterile needles and syringe programming in reducing HIV/AIDS among injecting drug users*. Geneva: WHO.
18. Cook C. (2010) *The Global State of Harm Reduction: Key Issues for Broadening the Response*. London: International Harm Reduction Association.
19. Metick et al. (2008) *Methadone maintenance therapy versus no opioid replacement therapy: A Systematic Review*.
20. Metick et al. (2008) *Methadone maintenance therapy versus no opioid replacement therapy: A Systematic Review*.
21. Gossling et al. (2008) *Substitution treatment of injecting opioid users for prevention of HIV infection: A Systematic Review*.
22. Mala, M., Brindley, G., Maggioni, M. and Bazza F. (2008) *Adherence to antiretroviral therapy for human immunodeficiency syndrome among users of methadone*. *AIDS*, 22(18): 2187-2197.
23. National Institute on Drug Abuse, NIDA International Program, Methadone Research Web Guide. [http://international.drugabuse.gov/infobase/igab/methadone/igab\\_methadone.asp](http://international.drugabuse.gov/infobase/igab/methadone/igab_methadone/igab_methadone.asp), accessed 18 March 2010.
24. Zhai, G., E. Brindley, M. L. and Barrett P. (2006) *Methadone Maintenance and HIV Prevention: A Cost Effectiveness Analysis*. *Management Science*, 46(8), 1013-1031.
25. Connors, M., Lauer-Santana, A., Jurek, D., Finkel, E., Liu, Z., Taylor, R., Fry, R., A. Day, E., Lindquist, R., Roberts, T., Qian, A. and Taylor, P. (2007) *Methadone and buprenorphine for the management of opioid dependence: a systematic review and economic evaluation*. *Health Technology Assessment*, 11(8).
26. Adler, S., Shiner, R. K. and Brindley, M. L. (2011) *Effectiveness and Cost Effectiveness of Expanding Needle Reduction and Antiretroviral Therapy in a Mixed HIV Epidemic: A Modelling Analysis for Ukraine*. *PLoS Med* 8(5): e1001042. doi:10.1371/journal.pmed.1001042.
27. Parmentier et al. (2010) *Evidence for the effectiveness of sterile injecting equipment provision in preventing hepatitis C and human immunodeficiency virus transmission among injecting drug users: a review of evidence*. *AIDS*, 24(16): 1625.
28. Wodak A. and Cooney A. (2005) *Effectiveness of sterile needles and syringe programmes*. *International Journal of Drug Policy*, 16(6).
29. World Health Organization (2004) *Evidence for Action: Technical Papers: Effectiveness of sterile needles and syringe programming in reducing HIV/AIDS among injecting drug users*. Geneva: WHO.
30. Health Outcomes International for the US (2009) *Return on investment in needle and syringe programs in Australia*. Summary report. Canberra: Commonwealth of Australia.
31. Australia Commonwealth Department on Health and Ageing (2009) *Return on investment on Needle and Syringe Exchange Programs in Australia*. Canberra: Commonwealth of Australia.
32. Australian Government, Department of Health and Ageing (2009) *Return on investment 2: Evaluating the Cost Effectiveness of Needle and Syringe Programs in Australia*. Canberra: Commonwealth of Australia.
33. Australia Commonwealth Department on Health and Ageing (2008) *Return on investment 2: Evaluating the Cost Effectiveness of Needle and Syringe Exchange Programs in Australia*. Canberra: Commonwealth of Australia.
34. Harwood, D. R., E. D. Pritchard, T. S. James, P. Lurie, and D. Vlahov (2008) *Cost and Cost Effectiveness of Increasing Access to Sterile Syringes and Needles as an HIV Prevention Intervention in the United States*. *Journal of Acquired Immune Deficiency Syndromes & Human Retrovirology*, 58: S130-S136.
35. Kumaraswami, L., Vekeman, P., Walker, D., Saravanan, S., Romazova, V., Erdemovic, Z., Zhai, G., Watts, C. (2006) *The cost-effectiveness of HIV prevention measures among injecting drug users in Dordrecht, Belgium*. *Addiction*, 101, 1592-1605.
36. Vekeman, P., Kumaraswami, L., Saravanan, S., Romazova, V., Erdemovic, Z., Zhai, G., Watts, C. (2006) *The cost-effectiveness of expanding harm reduction activities for injecting drug users in Odessa, Ukraine*. *Sexually Transmitted Diseases*, 33 (Supplement 10), S89-S102.
37. Vekeman, P., Kumaraswami, L., Saravanan, S., Romazova, V., Erdemovic, Z., Zhai, G., Watts, C. (2006) *The cost-effectiveness of expanding harm reduction activities for injecting drug users in Odessa, Ukraine*. *Sexually Transmitted Diseases*, 33 (Supplement 10), S89-S102.
38. Based on Stimson G. and Lines R. *Bridging the Gap: An analysis of global spend and resourcing need for harm reduction*. In Global State of Harm Reduction 2010: Key Issues for Broadening the Response. Ed. Catherine Cook. International Harm Reduction Association.