Global State of Harm Reduction 2010

Key issues for broadening the response

ihra

INTERNATIONAL HARM REDUCTION ASSOCIATION

Contents

The Global State of Harm Reduction 2010

Key issues for broadening the response

Edited by Catherine Cook

ISBN 978-0-9557754-8-2

This report was produced by the Public Health, Research and Policy Programme of the International Harm Reduction Association.

Acknowledgements

This report was made possible by the collaborative input of numerous harm reduction networks, drug user organisations, research institutes and advocates. IHRA would like to acknowledge the invaluable contribution of these individuals and organisations in providing information on their specific countries or regions:

Asia: Pascal Tanguay, Thailand; ***Caribbean:*** Caribbean Harm Reduction Coalition, Saint Lucia; ***Eurasia:*** Simona Merkinaite, Lithuania; ***Latin America:*** Intercambios Association Civil, Argentina; ***Middle East and North Africa:*** Middle East and North Africa Harm Reduction Association (MENAHRA), Lebanon; ***North America:*** Harm Reduction Coalition, US; ***Oceania:*** Australian Injecting and Illicit Drug Users League, Australia, New Zealand Drug Foundation, New Zealand; ***Sub-Saharan Africa:*** Sub-Saharan African Harm Reduction Network, Mauritius; Reychad Abdool, Kenya; Medical Research Council, South Africa ***Western Europe:*** European Monitoring Centre on Drug Use and Drug Addiction.

Thanks also to the following people for reviewing sections of the report and for providing input and guidance:

Rick Lines, Gerry Stimson, Patrick Gallahue, Anna Bergenstrom, Ann Fordham, Shona Schonning, Safet Blakaj, Annette Verster, Marcus Day, Pablo Cymerman, Diana Rossi, Marcela Vitarelli, Victoria Rangugni, Jallal Toufiq, Daniel Wolfe, Fayzal Sulliman, Charles Parry, Tara Carney, Terry Cook, Bradley Mathers and Louisa Degenhardt.

Section 1 was written by Catherine Cook

Section 2 was compiled by Catherine Cook and Claudia Stoicescu.

Information for text boxes on organisations of people who use drugs was gathered by Yana Polonska

In Section 3, authors, contributors and reviewers are acknowledged at the beginning of each chapter.

Designed by Mark Joyce
Copy-edited by Jennifer Armstrong
Printed by Opolgraf SA in Poland

Published by
International Harm Reduction Association
Unit 701, 50 Westminster Bridge Road
London SE1 7QY
United Kingdom
Telephone: +44 (0) 207 953 7412
E-mail: info@ihra.net
Website: www.ihra.net

Abbreviations and acronyms

AHRN	Asian Harm Reduction Network
AIVL	Australian Injecting and Illicit Drug Users' League
AIDS	Acquired immune deficiency syndrome
ANPUD	Asian Network of People who use Drugs
ART	Antiretroviral therapy
ATS	Amphetamine-type stimulants
CARICOM	Caribbean Community
CHRC	Caribbean Harm Reduction Coalition
CND	Commission on Narcotic Drugs
CPR	Cardiopulmonary resuscitation
CPT	Co-trimoxazole preventive treatment
CSO	Civil society organisation
DCR	Drug consumption room
DFID	Department for International Development (UK)
DOTS	Directly Observed Treatment Short-Course
ECOSOC	Economic and Social Council (UN)
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
EMRO	WHO Eastern Mediterranean Regional Office
EC	European Commission
EU	European Union
GDP	Gross Domestic Product
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HAT	Heroin assisted treatment
HBV	Hepatitis B virus
HBsAG	Marker in the blood indicating active HBV infection
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
HLS	High Level Segment
IDU	Injecting drug use
IHRA	International Harm Reduction Association
INCB	International Narcotics Control Board
INPUD	International Network of People who Use Drugs
MENA	Middle East and North Africa
MENAHRA	Middle East and North African Harm Reduction Network
MDT	Mandatory drug testing
MMT	Methadone maintenance treatment
MSM	Men who have sex with men
NASA	National AIDS Spending assessment
NGO	Non-governmental organisation
NIDU	Non-injecting drug use
NSP	Needle and syringe exchange programme
OST	Opioid substitution therapy
PAHO	Pan American Health Organization (WHO)
PEPFAR	President's Emergency Plan for AIDS Relief
PICTs	Pacific Island Countries and Territories
PNEP	Prison needle and syringe exchange programme
SAHRN	Sub-Saharan African Harm Reduction Network
SAMHSA	US Substance Abuse and Mental Health Services Administration
SIF	Supervised or safer injecting facility
STI	Sexually transmitted infection
SPC	Secretariat of the Pacific Community
TB	Tuberculosis
UAE	United Arab Emirates
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNAIDS	Joint United Nations Programme on AIDS
UNDP	United Nations Development Programme
UNESCO	United Nations Economic, Social and Cultural Organization
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
UNODC	United Nations Office on Drugs and Crime
MENARO	UNODC Middle East and North Africa Regional Office
US	United States of America
VCT	Voluntary HIV counselling and testing
WFP	World Food Programme (UN)
WHO	World Health Organization

Introduction

About the Global State of Harm Reduction 2010

In 2008 the International Harm Reduction Association (IHRA) released the Global S*tate of Harm Reduction*, a report that mapped responses to drug-related HIV and hepatitis C epidemics around the world for the first time.[a] The information gathered for the report provided a critical baseline against which progress could be measured in terms of the international, regional and national acceptance and action on harm reduction policies and interventions.

Global State of Harm Reduction 2010 presents the major developments in harm reduction policy adoption and programme implementation that have occurred since 2008, enabling some assessment of global progress. It also explores several key issues for harm reduction, such as the response to amphetamine-related harms; harm reduction in prisons; the reduction of various drug-related health harms including bacterial infections, tuberculosis, viral hepatitis and overdose; and the extent to which financial resources for harm reduction are available.

This report, and other global state of harm reduction resources,[b] are designed to provide advocacy and reference tools for a wide range of audiences, such as international donor organisations, multilateral and bilateral agencies, civil society and non-governmental organisations (NGOs), including organisations of people who use drugs, as well as researchers and the media.

Methodology

The information in Sections 1 and 2 of this report was gathered using existing data sources, including research papers and reports from multilateral agencies, international NGOs, civil society and harm reduction networks, as well as expert opinion from drug user organisations and those working in the harm reduction field. Within each region, IHRA enlisted support from regional harm reduction networks and researchers to gather information on key developments.

Regions were largely identified using the coverage of the regional harm reduction networks. Therefore, this report examines the regions of Oceania, Asia, Eurasia (Central and Eastern Europe and Central Asia), Western Europe, Sub-Saharan Africa, Middle East and North Africa, Latin America, the Caribbean and North America.

Where possible, the regional updates were peer reviewed by the regional harm reduction networks and other experts in the field (see Acknowledgements).

This report also contains chapters on key issues for the harm reduction response, which were identified through feedback on the first report and consultation with an advisory panel. These chapters have been prepared by representatives from civil society, research and multilateral agencies with specific expertise in the area and reviewed by peers in the field. Although some of the issues covered are fairly new areas with relatively little research to report on, these chapters aim to present what is currently known and raise issues for the international harm reduction community to consider.

Data quality

This report draws heavily on recent global systematic reviews conducted by the Reference Group to the United Nations on HIV/AIDS and Injecting Drug Use on the epidemiological situation and the coverage of key harm reduction interventions. The epidemiological review presented only data that fitted with reliability criteria established by the UN Reference Group, resulting in data gaps for many countries with HIV epidemics among people who inject drugs. Given that this is the most reliable picture of the state of the epidemic, IHRA has presented the UN Reference Group data in this report, and provided data from other sources for only those countries and territories not covered by the UN Reference Group. Where estimates have been queried by civil society reviewers, this is indicated within the text.

Establishing standards for reliability in this area is particularly important given the difficulties involved in researching HIV and drug use. The significant data gaps are also a stark reminder of the need for improved monitoring systems and data reporting on these issues around the world.

Similarly, this report draws heavily on the UN Reference Group data in reporting on the existence and coverage of harm reduction interventions. However, input from harm reduction networks, researchers and other experts in the field has been crucial in providing contextual information on harm reduction implementation around the world.

The data presented here, on both epidemiology and coverage, represent the best estimates currently available, however, lack of uniformity in measures, data collection methodologies and definitions renders cross-national and regional comparisons difficult.

a Cook C and Kanaef N (2008) *Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
b See www.ihra.net for more details.

Limitations

This report attempts to provide a global snapshot of harm reduction policies and programmes and, as such, has several limitations. It does not provide an extensive evaluation of the services or policies in place. It must be recognised that the existence of a service does not necessarily denote quality and adequate coverage to have an impact on drug-related harms.

While this report aims to cover some important areas for harm reduction, it focuses largely on the public health aspects of the response and does not document the full spectrum of social and legal harms faced by people who use drugs. It also does not cover the full spectrum of harms related to substance use, for example those related to alcohol and tobacco use.

Report structure

Section 1 provides a global overview of harm reduction policy and programming.

Section 2 contains nine brief regional updates – Asia, Eurasia, Western Europe, the Caribbean, Latin America, North America, Oceania, Middle East and North Africa, and Sub-Saharan Africa – that examine the developments for harm reduction since 2008.

Section 3 comprises seven chapters that explore issues key to assessing the global state of harm reduction, including the response to amphetamine-related harms; harm reduction in prisons; the reduction of various drug-related health harms such as bacterial infections, tuberculosis, viral hepatitis and overdose; and the extent to which financial resources for harm reduction are available.

1.1 Harm Reduction: A Global Update

In 2010 the state of harm reduction around the world remains very limited, particularly in low- and middle-income countries. However, there have been several significant developments in research, policy and implementation in the past two years. Among these is the greater emphasis placed on the gathering of reliable epidemiological and coverage monitoring data from civil society and UN agencies, within the context of scaling up towards universal access to HIV prevention, treatment, care and support.[1 2 3 4]

Injecting drug use occurs in at least 158 countries and territories around the world.[1] The latest available data estimate that 15.9 million (range 11 to 21 million) people inject drugs globally.[2] The largest injecting populations are found in China, the United States and Russia. In 120 countries, there are reports of HIV infection among people who inject drugs.[2] In eight countries – Argentina, Brazil, Estonia, Indonesia, Kenya, Myanmar, Nepal and Thailand – HIV prevalence among people who inject drugs is estimated to be over 40%.[a] Worldwide, approximately three million (range 0.8 to 6.6 million) people who inject drugs are living with HIV.[2] (See Section 2 for more details.)

Extremely high proportions of people who inject drugs in all regions of the world are also affected by viral hepatitis (in particular, hepatitis B and C), often with HIV co-infection. They are also at greater risk of tuberculosis, which is a leading cause of death among people who inject drugs, particularly those living with HIV. Overdose is another major cause of death among injecting populations around the world. Other major health harms faced by this group are injection-related bacterial infections, some of which can be fatal. (See Section 3 for more details.)

The Global Harm Reduction Response

International policy developments for harm reduction

In the past two years there have been a number of significant developments within international policy that have implications for harm reduction.

- The term 'harm reduction' remains controversial in international drug policy fora. At the Commission on Narcotic Drugs (CND), the term was struck from the final version of the Political Declaration on Drugs in 2009, a situation about which twenty-six states formally expressed their disagreement.[5] It also failed to be included in a resolution on universal access to HIV services in March 2010.[6] Where harm reduction was omitted, agreed text included terms such as 'comprehensive' services, specifically those in line with guidelines from WHO, UNAIDS and UNODC, which include needle and syringe exchange and opioid substitution therapy.
- In July 2009 'harm reduction' appeared in a resolution on the work of UNAIDS agreed by UN Member States of the Economic and Social Council, a UN body senior to the CND.[7] It was also included in a Human Rights Council resolution on human rights and HIV/AIDS, agreed by Member States, including those that opposed the term at the CND (e.g. Japan and Russia).[8]
- The election of President Barack Obama and the subsequent lifting of a long-standing ban on federal funding of needle exchange in the United States could potentially increase financial support for harm reduction nationally and internationally through funds from the President's Emergency Plan for AIDS Relief (PEPFAR).
- The 24th UNAIDS Programme Coordinating Board (PCB) meeting held in Geneva, Switzerland in June 2009 dedicated time to the issue of HIV prevention among people who inject drugs.[9] The PCB called on the UNAIDS programme, including UNODC, to 'address the uneven and relatively low coverage of services', to 'facilitate greater resource mobilization', to work with 'Member States to further harmonize laws governing HIV and drug use' and to improve data collection. They also called for the development of guidance and models for harm reduction tailored towards sub-groups of drug users such as women, sex workers, young people, migrants and stimulant users.[9]
- Countries have submitted their first reports on progress against national targets on scaling up towards universal access to HIV prevention, treatment and care. An analysis of country progress reports indicated that on average only 26% of injecting populations had accessed voluntary HIV counselling and testing and received a test result (from twenty-six reporting countries). It also found that among 149 low- and middle-income countries, only forty-one had conducted systematic surveillance of HIV among people who inject drugs.[3]

a Updated information for Ukraine resulted in its removal from this list.

A conducive environment for harm reduction

In 2010 there are ninety-three countries and territories worldwide that support a harm reduction approach, eleven more than the number reported in 2008[1] (see Table 1.1). This support is explicit either in national policy documents (seventy-nine countries – eight more than in 2008) and/or through the implementation or tolerance of harm reduction interventions such as needle exchange (eighty-two countries – five more than in 2008) or opioid substitution therapy (seventy countries – seven more than in 2008).[b]

A substantial number of countries also continue to support harm reduction through assistance to programmes in other countries (or providing funds to international agencies) or by making explicit supportive references to harm reduction in international fora such as at the CND or at the UNAIDS PCB. These include countries in Western Europe, Oceania, the Caribbean, the Middle East and North Africa and Latin America.

Table 1.1: Countries or territories employing a harm reduction approach in policy or practice[c]

Country or territory	Explicit supportive reference to harm reduction in national policy documents	Needle exchange programmes operational	Opioid substitution programmes operational	Drug consumption room(s)
ASIA				
Afghanistan	✓	✓	✓	x
Bangladesh	✓	✓	x	x
Cambodia	✓	✓	x	x
China	✓	✓	✓	x
Hong Kong	✓	x	✓	x
India	✓	✓	✓	x
Indonesia	✓	✓	✓	x
Malaysia	✓	✓	✓	x
Maldives	x	x	✓	x
Mongolia	x	✓	x	x
Myanmar	✓	✓	✓	x
Nepal	✓	✓	✓	x
Pakistan	✓	✓	x	x
PDR Laos	✓	x	x	x
Philippines	✓	✓	x	x
Taiwan	✓	✓	✓	x
Thailand	✓	✓	✓	x
Vietnam	✓	✓	✓	x
CARIBBEAN				
Puerto Rico	nk	✓	✓	x
Trinidad and Tobago	✓	x	x	x
EURASIA				
Albania	✓	✓	✓	x
Armenia	✓	✓	✓	x
Azerbaijan	x	✓	✓	x
Belarus	✓	✓	✓	x
Bosnia and Herzegovina	✓	✓	✓	x
Bulgaria	✓	✓	✓	x
Croatia	✓	✓	✓	x
Czech Republic	✓	✓	✓	x
Estonia	✓	✓	✓	x
Georgia	✓	✓	✓	x
Hungary	✓	✓	✓	x
Kazakhstan	✓	✓	✓	x
Kosovo	x	✓	x	x
Kyrgyzstan	✓	✓	✓	x
Latvia	✓	✓	✓	x
Lithuania	✓	✓	✓	x
Macedonia	✓	✓	✓	x
Moldova	✓	✓	✓	x
Montenegro	✓	✓	✓	x
Poland	✓	✓	✓	x
Romania	✓	✓	✓	x
Russia	x	✓	x	x
Serbia	✓	✓	✓	x
Slovakia	✓	✓	✓	x
Slovenia	✓	✓	✓	x
Tajikistan	✓	✓	x	x
Turkmenistan	x	✓	x	x
Ukraine	✓	✓	✓	x
Uzbekistan	✓	✓	x	x
LATIN AMERICA				
Argentina	✓	✓	x	x
Brazil	✓	✓	x	x
Colombia	✓	x	✓	x
Mexico	✓	✓	✓	x
Paraguay	✓	✓	x	x
Uruguay	✓	✓	x	x
MIDDLE EAST and NORTH AFRICA				
Egypt	x	✓	x	x
Iran	✓	✓	✓	x
Israel	✓	✓	✓	x
Lebanon	✓	✓	✓	x
Morocco	✓	✓	x	x
Oman	x	✓	x	x
Palestine	x	✓	x	x
Tunisa	x	✓	x	x

b While the total NSP and OST figures are the same as those published by the UN Reference Group, there are some differences behind the figures. For example, IHRA has included Hong Kong, Kosovo and Zanzibar as separate countries/territories, has included information on developments since the UN Reference Group research was carried out (e.g. OST in Armenia) and has not included services in UAE and Sierra Leone as these were disputed by civil society and UN representatives.

c This includes countries that have harm reduction in their national policies or strategy documents on HIV, hepatitis C and/or drug use. In many countries, harm reduction may appear in one or more of such policies, but not all. For example, the US national HIV policy and the national strategy on hepatitis C include the term, whereas the national drug policy does not.

Country or territory	Explicit supportive reference to harm reduction in national policy documents	Needle exchange programmes operational	Opioid substitution programmes operational	Drug consumption room(s)
NORTH AMERICA				
Canada	✓	✓	✓	✓
United States	✓	✓	✓	x
OCEANIA				
Australia	✓	✓	✓	✓
New Zealand	✓	✓	✓	x
SUB-SAHARAN AFRICA				
Kenya	✓	x	✓	x
Mauritius	✓	✓	✓	x
Senegal	x	x	✓	x
Seychelles	x	x	x	x
South Africa	x	x	✓	x
Tanzania	✓	x	x	x
Zanzibar	✓	x	x	x
WESTERN EUROPE				
Austria	✓	✓	✓	x
Belgium	✓	✓	✓	x
Cyprus	✓	✓	✓	x
Denmark	✓	✓	✓	x
Finland	✓	✓	✓	x
France	✓	✓	✓	x
Germany	✓	✓	✓	✓
Greece	✓	✓	✓	x
Iceland	nk	x	✓	x
Ireland	✓	✓	✓	x
Italy	✓	✓	✓	x
Luxembourg	✓	✓	✓	✓
Malta	✓	✓	✓	x
Netherlands	✓	✓	✓	✓
Norway	✓	✓	✓	✓
Portugal	✓	✓	✓	x
Spain	✓	✓	✓	✓
Sweden	✓	✓	✓	x
Switzerland	✓	✓	✓	✓
United Kingdom	✓	✓	✓	x

nk = not known

Civil society

Non-governmental organisations (NGOs) and networks continue to be the drivers behind the harm reduction response in many parts of the world. At the international level, numerous health and development NGOs support and advocate for a harm reduction approach, as do some in the human rights field, such as Human Rights Watch.

Harm reduction networks now exist in every region of the world and continue to make important contributions at the regional and international levels. Regional networks include the Asian Harm Reduction Network (AHRN), Eurasian Harm Reduction Network (EHRN), Caribbean Harm Reduction Coalition (CHRC), Middle East and North African Harm Reduction Association (MENAHRA), Intercambios Asociación Civil, Sub-Saharan African Harm Reduction Network (SAHRN) and the most recently formed European Harm Reduction Network (EuroHRN).

In addition, there are global networks that include harm reduction as a core part of their work, for example YouthRISE, International Network of People Who Use Drugs (INPUD), International Nursing Harm Reduction Network (INHRN), Coalition of Police Supporting Harm Reduction (COPS-HR), Women's Harm Reduction International Network (WHRIN) and the International Drug Policy Consortium (IDPC).

The harm reduction 'network of networks', which has collectively issued statements on harm reduction resourcing[10] and UN system-wide coherence,[11] also includes some national harm reduction networks, such as the Canadian Harm Reduction Network (CHRN), Colectivo por Una Política Integral Hacia las Drogas (CUPIHD, based in Mexico) and the Harm Reduction Coalition (HRC, based in the US).

The engagement of civil society in national policy making on drugs varies dramatically from country to country. At the international level, there has been some progress in this regard. For example, the 'Beyond 2008' regional and global fora provided a means for civil society to have an input into the 1998 to 2008 review of the UN General Assembly Special Session on Illicit Drugs. The process culminated in the agreement of a civil society consensus statement, which included explicit support for harm reduction. Crucially, the term 'harm reduction' was not included in the final Political Declaration.[12]

Meaningful engagement at the CND still does not compare with that of parallel UN meetings.[13] [14] At CND 2009, it is estimated that 200 NGO delegates, representing sixty-five official organisations, attended the proceedings. The IDPC reported that at least ten of the fifty-three CND delegations included NGO representation.[d] [15]

The representation of people who use drugs in international policy-making fora has seen some advances in recent years, in large part due to the work of INPUD. Progress includes representation on the UK delegation at CND 2009 and 2010 and increased engagement with and representation on the UNAIDS PCB. Since 2008 INPUD has become an increasingly important partner for wider civil society and UN agencies on harm reduction and other drug policy issues.

d Albania, Georgia, Kyrgyzstan, Lithuania, Mexico, the Netherlands, New Zealand, St Lucia, Ukraine and the UK.

Global coverage of harm reduction services

The lack of available coverage estimates before 2010 makes it difficult to assess progress over the past two years. However, in general, data indicate that more services have become available in the countries where harm reduction already existed. In addition, several countries have introduced needle and syringe programmes and/or opioid substitution therapy in the past two years. Despite this, the extent of harm reduction coverage, particularly in low- and middle-income countries, remains poor.

Needle and syringe exchange programmes (NSPs)

In 2010 there are eighty-two countries and territories providing some level of needle and syringe exchange programming, whether through community-based outreach, specialist NSPs, pharmacy-based schemes or vending machines. Data indicate that there have been increases in the number of services operating in several countries, including countries with significant HIV epidemics among injecting populations, such as Ukraine and Iran. NSPs have also started operating in new countries including Mongolia, the Philippines, Kosovo and Tunisia.

There is considerable variation between countries in the number of operational NSP sites as well as the coverage of these services. In general, coverage is higher in high-income countries, with several Western European countries and Australia reaching the international recommended coverage of 200 needles and syringes distributed per person who injects drugs per year. In low- and middle-income countries, the average coverage level is considerably lower, with countries in Latin America, the Caribbean, the Middle East and Africa distributing less than one needle per person per year.[4]

Seventy-six countries and territories where injecting drug use is reported (thirty-eight of them with HIV reported among people who inject drugs) remain without any available needle and syringe exchange.

Drug consumption rooms (DCRs)

In 2010 sixty cities around the world have one or more DCR, which allows people to use drugs under the supervision of trained staff and without fear of arrest. The majority of these are in Western Europe, where there are a total of ninety operational DCRs across the Netherlands, Germany, Luxembourg, Norway, Spain and Switzerland. In addition, there is one DCR in Sydney, Australia and one in Vancouver, Canada.

Opioid substitution therapy (OST)

Opioid substitution is prescribed for maintenance therapy in seventy countries and territories around the world. Methadone and buprenorphine are mainly used, but in some countries slow-release morphine and codeine, and heroin-assisted treatment are also offered.

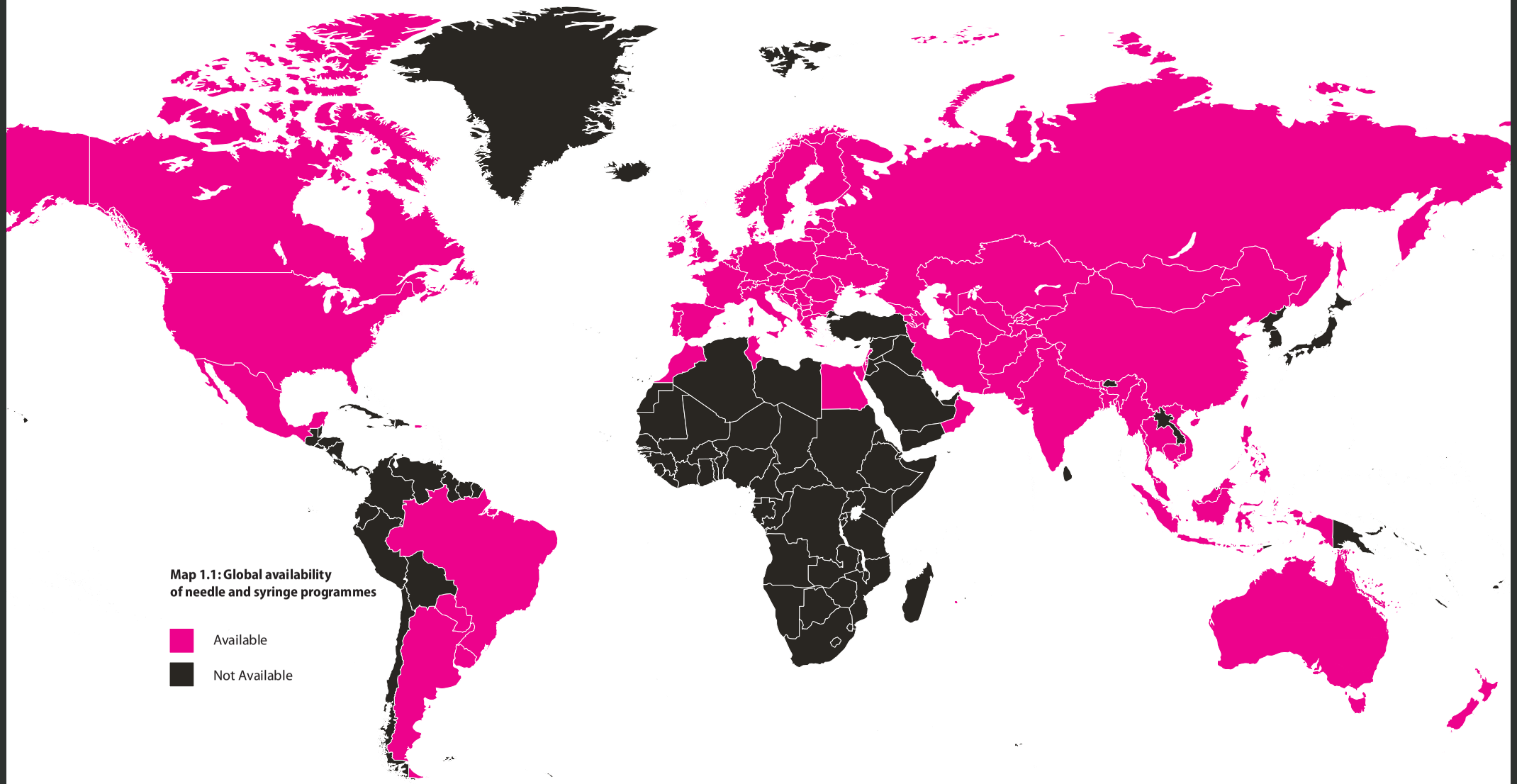
There are indications that a number of countries, including China, India and Iran, have made considerable efforts to scale up the number of OST sites since 2008. OST has been newly introduced in several countries, including Afghanistan, Armenia, Colombia, Kazakhstan, the Maldives and Senegal.

Coverage of this intervention varies considerably around the world. In general, the number of OST sites and the numbers of people receiving OST are higher in high-income countries; for example, there are sixty-one OST recipients for every 100 people who inject drugs in Western Europe. Iran has the highest OST coverage outside Western Europe at fifty-two OST recipients for every 100 people who inject drugs.

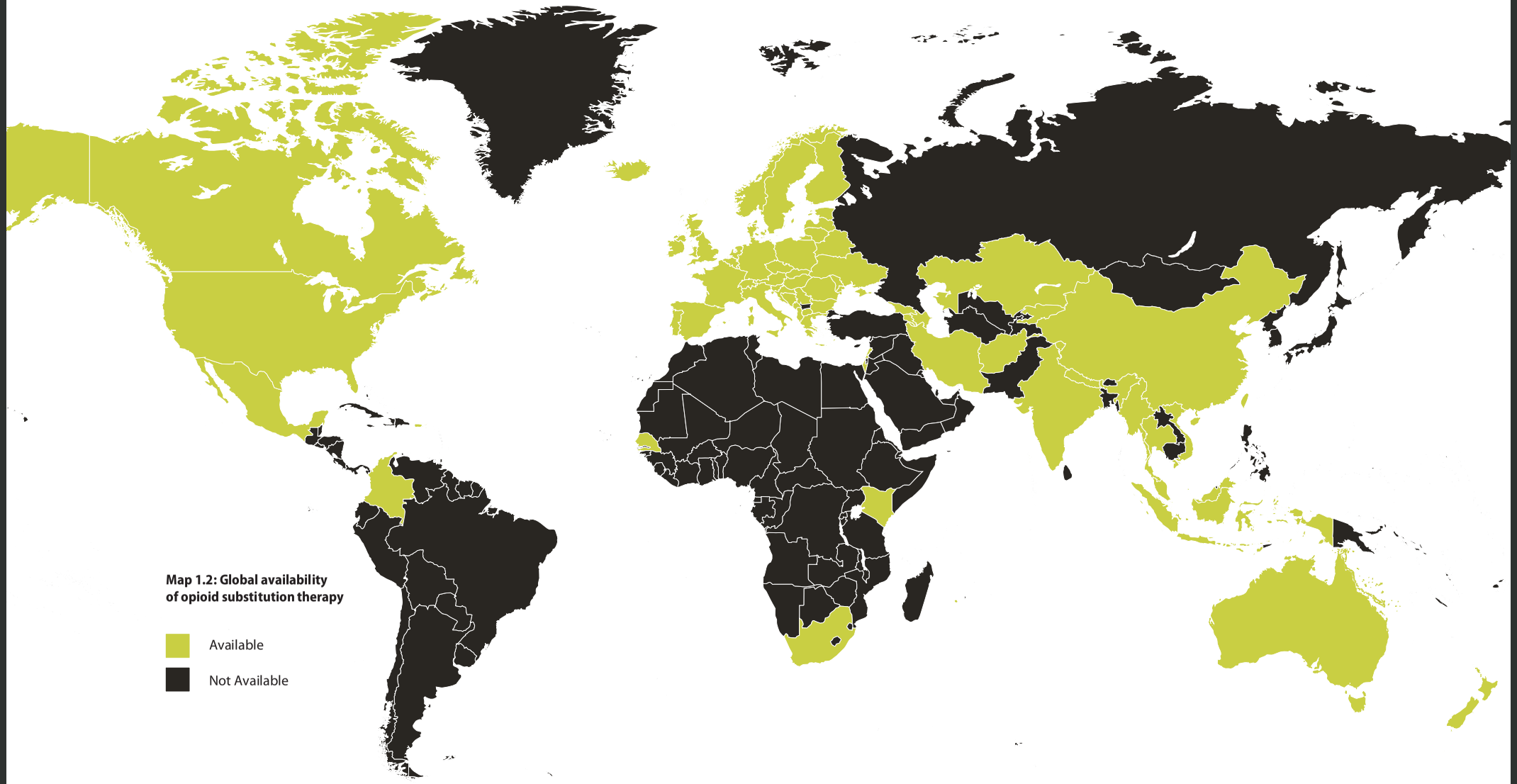
However, across Central Asia, Latin America and Sub-Saharan Africa, OST coverage equates to less than or the equivalent of one person for every 100 people who inject drugs. At the global level, it is estimated that there are between six and twelve recipients of OST for every 100 people who inject drugs.

Eighty-eight countries and territories where injecting drug use has been reported (fifty of them with reports of HIV among this population) remain without any available OST.

Map 1.1: Global availability of needle and syringe programmes



Map 1.2: Global availability of opioid substitution therapy



Harm reduction in prisons

The availability of NSPs, OST and other harm reduction services within prisons and other places of detention remains poor. Many countries that have adopted harm reduction in their responses to drug-related harms outside prisons fail to do so in prisons and other places of detention. To date, only ten countries have NSPs operating in at least one prison and less than forty countries have some form of OST available in at least one prison. Many of these interventions reach very small numbers. There is an urgent need to introduce comprehensive programmes and to scale up rapidly.

Other harm reduction services

The extent to which harm reduction interventions other than NSP and OST are reaching people who inject drugs around the world is less well researched on a global scale. It is difficult to determine, for example, the numbers who are in need of or have received treatment for hepatitis B or C, or for tuberculosis (TB). These interventions are included within the WHO, UNAIDS and UNODC comprehensive package of interventions recommended for people who inject drugs. However, available information suggests that while these affect vast numbers of people who inject drugs, very few have access to treatment, particularly in low- and middle-income countries.

Similarly, research on overdose mortality rates and overdose prevention service coverage shows that while this is a leading cause of death among people who use drugs, particularly those who inject, the numbers in receipt of prevention information or life-saving naloxone remain very low.

Other important health harms frequently experienced by people who inject drugs are injecting-related bacterial infections. These infections are likely to cause significant problems among people that inject drugs in all countries and there is a need to invest further in the harm reduction interventions that prevent and treat these infections.

In addition, the response to harms related to use of non-opiate drugs such as amphetamines remains underdeveloped when compared with the response to opiates and injecting-related harms. Programmes do exist and new guidance is being compiled, but there is a need for evaluation, further documentation of experiences and expansion of effective interventions.

Scale-up requires scaled-up investment

In calling for increased access to services, it is important to assess the finances that are currently available for the harm reduction response. IHRA estimates that US$160 million was spent on HIV-related harm reduction in low- and middle-income countries in 2007.[16] This works out at less than three US cents per day per person injecting drugs in these countries, which is clearly insufficient. It also means that the biggest investors in harm reduction are people who inject drugs themselves. The expenditure on harm reduction supplies (e.g. needles and syringes) and on drug treatment mainly comes from the out-of-pocket expenses of people who use drugs, rather than from harm reduction services.

In order to have an impact on HIV and other harms faced by people who use drugs, interventions must be scaled up, but this will only be possible with substantially increased investment from governments and international donors.

The regional updates in **Section 2** of this report provide further detail on the state of the harm reduction response around the world, particularly highlighting developments since 2008. **Section 3** explores issues that are integral to assessing the global state of harm reduction, but that have, in general, received less attention within research and in harm reduction responses. These include the response to amphetamine-related harms; harm reduction in prisons; the reduction of various drug-related health harms including bacterial infections, tuberculosis, viral hepatitis and overdose; and the extent to which financial resources for harm reduction are available.

References

1. Cook C and Kanaef N (2008) *Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
2. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
3. WHO (2009) *Towards Universal Access: Scaling Up Priority HIV/AIDS Interventions in the Health Sector: Progress Report 2009*. Geneva: WHO and UNAIDS.
4. Mathers B et al. (2010) Improving the data to strengthen the global response to HIV among people who inject drugs. *International Journal of Drug Policy* 21(2): 100–102.
5. Economic and Social Council Official Records (2009) *Supplement No. 8 United Nations Commission on Narcotic Drugs Report on the Fifty-Second Session (14 March 2008 and 11–20 March 2009)*. New York: UN.
6. UN CND (2010) Report on the fifty-third session (2 December 2009 and 8–12 March 2010) Economic and Social Council Official Records, 2010 Supplement No. 8. Advance unedited version E/2010/28 E/CN.7/2010/18.
7. Economic and Social Council (2009) ECOSOC Resolution 2007/32, Joint United Nations Programme on HIV/AIDS (UNAIDS).
8. Human Rights Council (2009) 12th session. Agenda item 3: Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development. Protection of human rights in the context of human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS).
9. UNAIDS PCB (2009) 24th meeting, Geneva, Switzerland, 22 to 24 June 2009. HIV prevention among injecting drug users UNAIDS/PCB(24)/09.9.Rev.1.
10. IHRA (2009) Resourcing harm reduction on a global basis. Recommendations from harm reduction networks to the donor conference on harm reduction, Amsterdam, 28 to 30 January: www.ihra.net/Assets/1610/1/2009-01_NetworksBrochure_DonorsConference.pdf (last accessed 3 April 2010).
11. IHRA (2009) Coherence not denial alone among UN agencies, CND continues to block support for harm reduction. A statement from harm reduction networks to the High Level Segment of the 52nd session of the UN CND, Vienna, 11 to 12 March: www.ihra.net/Assets/1611/1/2009-03_NetworksBrochure_CND.pdf (last accessed 3 April 2010).
12. VNGOC (2009) Beyond 2008 Declaration: www.vngoc.org/images/uploads/file/BEYOND%20 2008%20DECLARATION%20AND%20RESOLUTIONS%20DEFINITIVE.pdf (last accessed 4 September 2009).
13. Cook C (2010) *Through a Harm Reduction Lens: Civil Society Engagement in Multilateral Decision Making*. London: IHRA.
14. UNODC (2009) *Independent Evaluation of Beyond 2008* (GLO/J37) Vienna: UNODC.
15. IDPC (2009) Briefing paper: Proceedings document on the 2009 CND and High Level Segment: www.idpc.net/sites/default/files/library/IDPC_CND_Proceedings_EN2009.pdf (last accessed 3 April 2010).
16. Stimson GV et al. (2010) *Three Cents a Day Is Not Enough. Resourcing HIV-Related Harm Reduction on a Global Basis*. London: IHRA.

2.1 Regional Update: Asia

Map 2.1.1: Availability of needle and syringe exchange programmes (NSP) and opioid substitution therapy (OST)

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known

Table 2.1.1: Harm reduction in Asia

Country/territory with reported injecting drug use[a]	People who inject drugs[1]	Adult HIV prevalence amongst people who inject drugs[1]	Harm reduction response[2]	
			NSP[b]	OST[c]
Afghanistan	6,900	3.4%	✓(18–28) (NP)	✓(1) (M)[3]
Bangladesh	30,000	1.35%	✓93 (P)	x
Bhutan	nk	nk	x	x
Brunei Darussalam	nk	nk	x	x
Cambodia	1,750	22.8%	✓(2)	x
China	2,350,000	12.3%	✓(897–901)	✓(600–675) (B,M)
Hong Kong	30,000 [4]	nk	x [5]	✓[1]
India	164,820	11.15%	✓(200–219)	✓(61–63) (B,O)
Indonesia	219,130	42.5%	✓(182–323)	✓(35–46) (B,M)
Japan	400,000	nk	x	x
Korea (Republic of)	nk	nk	x	x
PDR Laos	nk	nk	x	x
Malaysia	205,000	10.3%	✓(117–130) (P)	✓(≥95) (B,M)
Maldives	nk	nk	x	✓(1) (M)
Mongolia	nk	nk	✓(1)	x
Myanmar	75,000	42.6%	✓(18–24) (P)	✓(7) (M)
Nepal	29,500[6]	41.39%	✓(43)	✓(2) (B,M)
Pakistan	141,000[6]	21%[6]	✓(81)	x
Philippines	15,500[6]	0.4%[6]	✓(3)	x
Singapore	nk	nk	x	x
Sri Lanka	nk	nk	x	x [e]
Taiwan	nk	13.8%	✓(1,103) (P)	✓(90) (B,M)
Thailand	160,528[f]	42.5%	✓(10) (P)	✓(147) (B,M)
Vietnam	135,305	33.85%	✓(382–2,023) (P)	✓(6) (M)

nk = not known

a. There is no reported injecting drug use in the Democratic People's Republic of Korea.
b. The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers. (P) = needles and syringes reported to be available for purchase from pharmacies or other outlets; (NP) = needles and syringes not available for purchase; where this is not referred to it is not known.
c. The number in brackets represents the number of operational OST programmes, including publicly and privately funded clinics and pharmacy dispensing programmes. (M) = methadone; (B) = buprenorphine; (O) = any other form (including morphine, codeine).
d. Estimated figure: 2002 (UN Reference Group).
e. It is reported that there are no official programmes in Sri Lanka, but some psychiatrists and general practitioners are prescribing methadone as substitution therapy.
f. Estimated figure: 2001 (UN Reference Group).

Harm Reduction in Asia

The large and diverse Asian region is home to significant numbers of people who inject drugs. They represent at least one-quarter of the total number of people injecting drugs around the world. HIV epidemics in many Asian countries are driven by injecting drug use. At the regional level, it is estimated that 16% of people who inject drugs are living with HIV.[1] Several Asian countries have reported much higher national HIV prevalence rates amongst people who inject drugs – most notably Indonesia, Myanmar, Nepal, Thailand and Viet Nam, where between one-third and one-half of all people injecting drugs are likely to be living with HIV.[1] At a more local level, extremely high prevalence rates can be found within this region. For example, in Yunnan Province, China, HIV prevalence is reported to be 54% amongst people who inject drugs.[7] In addition, there are anecdotal reports of emerging HIV epidemics among people who inject drugs in Punjab in Pakistan[8] and in the Philippines.[9]

Significant developments in policy and practice in parts of Asia have signalled a shift towards harm reduction in recent years. Fifteen countries in the region now have some form of needle and syringe programme (NSP) and twelve prescribe opioid substitution therapy (OST) to some extent (see Table 2.1.1). Since 2008 the majority of countries in the region have increased the number of sites providing key harm reduction services, and new interventions have been established in Mongolia and the Philippines (NSPs) and the Maldives and Afghanistan (OST). However, across the region, coverage still remains far below the levels necessary to have an impact on HIV epidemics. Throughout Asia, there is a need for further monitoring and evaluation to demonstrate the effectiveness of programmes, to track progress towards national and global targets and to inform strong advocacy for harm reduction in the region.

The investment of funds into harm reduction in Asia is poor, with estimates suggesting that currently available funding for the region amounts to only 10% of actual need.[10] A lack of supportive legal and policy frameworks in many countries continues to impede harm reduction responses, with several states prohibiting possession and/or provision of needles and syringes, methadone and/or buprenorphine. Imprisonment or detention in compulsory centres for drug users remains the dominant response to drug use in many Asian countries. Over half the countries in the region retain the death penalty for drug offences, and in the past three years, eight countries carried out executions for drug offences.[g] [11]

Developments in harm reduction implementation

Needle and syringe exchange programmes (NSPs)

Of the twenty-four Asian countries where injecting drug use has been reported, fifteen have needle and syringe exchange services available to varying degrees (see Table 2.1.1). In Cambodia, Mongolia, the Philippines and Thailand, this is very small-scale provision. Programmes in Cambodia and Thailand are NGO-led and continue to face difficulties with police 'crackdowns' and threats of closure.

In much of Asia, the number of NSP sites has increased; for example, in Afghanistan (from 1 in 2008 to 18–28 in 2010), China (from 92 in early 2006 to 775 in 2007 and 897–901 in 2010) and Taiwan (from 427 in 2008 to 1,103 in 2010).[5] [12] Despite these increases, most countries with NSPs still have only one site (or less) per 1,000 people who inject drugs (exceptions to this being Afghanistan, Bangladesh, India, Indonesia, Nepal and Viet Nam).[2] Where data are available, estimates suggest that the percentage of people who inject drugs accessing NSPs in a year varies widely, from 0.2% in Thailand to over 90% reported in Bangladesh and Viet Nam. In India, over three-quarters of people who inject drugs are reported to be reached by NSPs.[2] Estimates suggest that NSP coverage reaches 'medium' levels in Viet Nam (189 needles per person per year) and Bangladesh (118 needles per person per year).[h] Most countries, however, have extremely low levels of distribution, including Indonesia, the Philippines, Thailand and Malaysia, where NSPs provide less than ten needles and syringes per person per year.[i] [2]

In nine Asian countries with reported injecting drug use there are no NSP sites operating.[j] Laws that are prohibitive of needle and syringe exchange are a barrier to effective service provision in several countries, including Bhutan, Bangladesh, Hong Kong, Japan, Malaysia, Myanmar, PDR Laos, the Philippines, Sri Lanka and Thailand.[13] Support for harm reduction measures remains an issue in many countries. For example, government delegates from Singapore and Sri Lanka expressed their lack of support for these measures at the 2009 Commission on Narcotic Drugs in Vienna.[14]

Opioid substitution therapy (OST)

Many Asian countries have also scaled up provision of OST since last reported in 2008.[5] For example, the number of sites providing OST has increased in China (from 503 to 600–675), India (from 35 to 61–63), Malaysia (from very small-scale provision to 95 sites) and Taiwan (from 63 to 90).[5] [2] In 2009 the Maldivian government established a pilot methadone project with support from the UNODC Regional Office for South Asia (ROSA).[15] In Thailand, where methadone provision has been integrated into the National Healthcare Scheme, further expansion of OST services is planned through the Global Fund Round 8.[16] Furthermore, agreements have been reached in Bangladesh, Cambodia and India to pilot OST with methadone, as well as in Pakistan with methadone and buprenorphine. However, programmes starting up face issues of service provider capacity, procurement and safe storage of supplies, as well as difficulties in forming effective partnerships with key stakeholders, before OST can begin to reach people who need it.[8]

Despite recent increases, coverage levels in the region are still insufficient to have an impact on HIV epidemics. It is estimated that the highest numbers of clients in OST (including both injecting and non-injecting drug users) are in China (94,973) and Taiwan (12,598).[2] Current measures of OST coverage are inexact, using people who inject drugs as a denominator, even though not all will be injecting opiates or in need of OST. However, the available data indicate that no more than five in every 100 people who inject drugs are currently receiving OST in Asia.[2]

g China, Democratic People's Republic of Korea, Indonesia, Malaysia, Pakistan, Thailand, Singapore and Viet Nam.

h However, the % IDUs accessing NSPs in a year for Viet Nam, India and Bangladesh ranged from 73%, 58% and 54% respectively to over 100%, which suggests that the mid-point estimates may be exaggerated.

i The WHO, UNODC, UNAIDS Technical Guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users categorises NSP coverage as follows: low (<100 needles/syringes per injector per year), medium (>100 to <200 needles/syringes per injector per year) and high (>200 needles/syringes per injector per year).

j Bhutan, Brunei Darussalam, Hong Kong, Japan, Korea (Republic of), PDR Laos, Maldives, Singapore and Sri Lanka.

Commonly cited reasons for drop-out and lack of retention in OST programmes across the region include the poor quality of services and fear of arrest by law enforcement agencies.[8]

In twelve countries in the region where injecting drug use has been reported, OST remains unavailable.[k] The legal availability of substitution therapies in Asia remains a serious obstacle to OST introduction and scale up.[13]

The expansion of harm reduction services has occurred against a backdrop of continued government over-reliance on detention in compulsory centres for drug users. Expansion of centres has continued without evidence to demonstrate their effectiveness. It is estimated that more than 350,000 people were detained in these centres in Asia in the past twelve months.[17] There are reported to be 1,043 such centres across the region,[l] the majority in China.[17] These centres vary in their approach, but tend to be characterised by arbitrary detention without due process of law and some form of forced 'treatment', which is often detoxification focused. In many cases, detainees are also subjected to forced labour. Reports from numerous countries document a range of human rights concerns related to inadequate health care in compulsory centres for drug users.[18 19] For example, lack of access to anti-retroviral treatment (ART) for detainees has been reported in centres in China, Malaysia, Cambodia and Viet Nam. Forced or involuntary testing for HIV of persons in centres has been reported in China, Malaysia and Viet Nam. In some countries, entry into OST programmes is dependent on having spent a number of months in such a facility. Of even greater concern are the reports of torture, physical and sexual violence and other forms of cruel punishment within these centres.[18] Indeed, several key regional stakeholders have taken up the issue of drug treatment as a priority based on: the need for more evidence, increased HIV transmission risks, limited access to comprehensive services, human rights violations and high relapse rates. UNODC's TreatNet II was recently initiated to develop evidence-based models and build capacity in Cambodia, China, Laos, Malaysia, Myanmar, Thailand and Viet Nam.[20]

Antiretroviral therapy (ART)

New estimates gathered by the Reference Group to the UN on HIV and Injecting Drug Use indicate that only a small proportion of people living with HIV who inject drugs are receiving ART in Asia. Data were only available for eight Asian countries, and within these the numbers of people receiving ART ranged from five people in Bangladesh to 9,300 people in China. In Indonesia, the country with the highest coverage, only six in every 100 people who injected drugs living with HIV were receiving ART.[2]

Policy developments for harm reduction

Harm reduction forms a key component of HIV policies and strategic plans in Asia. In early 2009 IHRA reported that fourteen Asian countries included harm reduction in their national HIV and/or drug policies.[l 21] Since then, strategy and policy documents in the Philippines and Thailand have been developed that also include harm reduction.[13] Eighteen countries now have HIV policies and strategic plans that identify people who inject drugs as a target population for their HIV responses.[m 13] However, UNGASS reports have revealed that almost two-thirds of countries in the Asia-Pacific region still have laws, regulations or policies that are obstacles for effective HIV prevention, treatment, care and support for people who inject drugs.[13] In some countries, HIV policy or strategy documents directly conflict with national laws. For example, in PDR Laos, where needle and syringe exchange remains prohibited by law, the HIV strategy states that the national aim is for 70% of people who inject drugs to be using sterile injecting equipment by the end of 2010.[13] In Indonesia, despite strong efforts to scale up harm reduction, tensions between the aims of the national HIV office and the drug control agency have resulted in a review of drug laws towards a more repressive stance, in conflict with the scale-up of harm reduction services.[22]

Conversely, efforts have begun in some Asian countries to investigate improvements to policing strategies in order to increase access to harm reduction services and mitigate unintended health consequences for people who use drugs. The Royal Malaysian Police organised a national seminar in late 2009 to investigate mechanisms to change existing policing practice and to support harm reduction services and remove barriers to access. In February 2010, the Nossal Institute hosted a round-table meeting entitled 'Law Enforcement and Harm Reduction: Effective Partnerships' which aimed to facilitate discussion on these issues between key stakeholders in South-East Asia.[23] Similar discussions have been unofficially held in Thailand and Viet Nam as well as in a few local areas across China. Furthermore, in Thailand and Viet Nam, government requests have been lodged with key agencies to share international experiences of the decriminalisation of drug use.[8]

Civil society and advocacy developments for harm reduction

Harm reduction advocates continue to sensitise and inform parliamentarians in Asia on the need for harm reduction policies and enabling legislation. Response Beyond Borders has played a central role in this effort, not least through the organising of key events such as the second Asian consultation on the prevention of HIV related to drug use held in Bangkok in January 2010. Significantly, at this event, discussions within the Asian Forum of Parliamentarians on Population and Development (AFPPD) culminated in an agreement among members of parliament to form a standing committee to further advocate for harm reduction within the region.[24]

k Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Japan, Korea (Republic of), PDR Laos, Mongolia, Pakistan, Philippines, Sri Lanka and Singapore.

l Afghanistan, Bangladesh, Cambodia, China, Hong Kong, India, Indonesia, PDR Laos, Malaysia, Myanmar, Nepal, Pakistan, Taiwan and Viet Nam.

m Afghanistan, Bangladesh, Cambodia, China, Hong Kong, India, Indonesia, PDR Laos, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Taiwan and Viet Nam.

Response Beyond Borders also played a part in generating momentum for the formation and establishment of the Asian Network of People Who Use Drugs (ANPUD). With support from the World AIDS Campaign (WAC), the Australian Injecting and Illicit Drug Users' League (AIVL), the UN Regional Task Force on Injecting Drug Use and HIV/AIDS for Asia and the Pacific, UNAIDS and WHO, ANPUD has now finalised its organisational constitution and is proceeding with official registration while governance structures are being formalised.[25] ANPUD has been established with the ultimate objective to further empower people who use drugs across Asia towards more effective engagement in decision-making processes that affect them.

Great concern has been raised in Cambodia with regard to the introduction of '*bong sen*' – a herbal formula manufactured by a Vietnamese company that is purported to 'cure' drug dependence, although there is currently no evidence to suggest so and the formula remains unapproved by the national ministries of health. A drug trial took place in which local non-governmental organisations (NGOs) were coerced into providing clients, which attracted the attention of human rights agencies and raised critical ethical questions regarding the process.[26] At the same time, local NGOs in Cambodia are under pressure and face potential service closures for voicing concerns and delivering essential health and social care services to people who use drugs.[27]

The Asian Harm Reduction Network (AHRN) has recently announced important changes to its organisational and governance structures, separating its networking and advocacy activities from its technical and implementation work and strengthening these streams of work.[28]

The Harm Reduction 2009 Conference held in Bangkok (April 2009) and the Ninth International Congress on AIDS in Asia and the Pacific (ICAAP) held in Bali (August 2009) were key events for harm reduction in Asia. At the national level, Thailand's civil society groups joined together to form a loose advocacy coalition called 12D, which was instrumental in the preparations for Harm Reduction 2009. Similarly, civil society groups mobilised around ICAAP. These events included a significant focus on decriminalisation, both in terms of drug use and harm reduction, as well as in the context of vulnerable populations and HIV transmission.[29] Decriminalisation of drug use is also an increasingly visible feature of advocacy by Indian civil society, following on from the decriminalisation of same-sex intercourse in Delhi.[30]

As in 2008, government-imposed restrictions on NGO functioning continue to limit civil society responses in several Asian countries.[31] Funding for civil society organisations involved in much-needed harm reduction advocacy within the region remains scarce, which poses difficulties for coordinated and sustained campaigning. In preparation of this report, for example, key stakeholders interviewed reflected on the lack of coordination, even tensions, within Indonesia's civil society response to drugs. Likewise, Nepal's vibrant civil society developments[n] have come at the cost of a lack of unity and much debate among local groups over the best avenue for progress.

Multilaterals and donors: Developments for harm reduction

Despite the international economic crisis, existing donor commitments to harm reduction in the region have so far been maintained. However, a general shift to programme- over project-based funding is restricting the access of many NGOs to much-needed funds. Global Fund support for harm reduction in Asia is increasing markedly to fill in the identified resource gap,[32] and there are expectations that the change in US policy towards NSP and OST will soon contribute to the harm reduction response in Asia. Governments in China, India, Malaysia and Taiwan have recently begun to invest in sustainable harm reduction service delivery within their own borders.

The Australian government's overseas aid programme's (AusAID) HIV/AIDS Asia Regional Program (HAARP), in particular, represents a large foreign investment in development of harm reduction over eight years (2007–2015) in Cambodia, China, Laos, Myanmar, Philippines and Viet Nam. Over the past few years, HAARP has contributed to harm reduction awareness among law enforcement agencies as well as community and local government agencies through multisectoral country programmes. Since its inception, HAARP has been able to establish needle and syringe exchange programmes in forty-two sites and reached over 10,000 men and women who inject drugs, along with a few thousand non-injecting drug users and their partners, with HIV prevention services, educational messages, primary health care and referrals in 2009.[8]

In December 2009 WHO, UNAIDS and UNODC consulted with key stakeholders on the Regional Strategy for Harm Reduction in Asia and the Pacific for the period 2010 to 2015, developed under the auspices of the UN Regional Task Force on Injecting Drug Use and HIV/AIDS for Asia and the Pacific, scheduled to be released in 2010.[33] Highlighted within the strategy are the need for increased coverage of NSP, OST and ART for people who use drugs, as well the importance of responding to challenges such as increasing HIV/hepatitis C co-infection and harms associated with methamphetamine use in the region.

UNAIDS is increasing its focus on addressing drug use in Asia, as directed by the recommendations from the Programme Coordinating Board (PCB),[34] and UNESCO's regional HIV strategy will concentrate on most-at-risk populations.[8] Also in 2009, the Association of South East Asian Nations (ASEAN) established an Intergovernmental Commission on Human Rights.[35]

The UN Regional Task Force on Injecting Drug Use and HIV/AIDS for Asia and the Pacific[o] has provided an important forum for regional-level advocacy and discussion over the past two years. The Task Force has also delivered a number of important resources for the harm reduction response in the region. These include resource needs estimates for scaling up harm reduction in Asia,[10] advocacy briefs on injecting drug use and HIV and an assessment of policies, resources and services in fifteen countries.[36]

n Hundreds of active and recovering users have a strong desire to participate in decisions that affect their lives and are organising around NGOs and community projects to influence funding flows, policy design and service delivery.

o The Task Force is made up of twenty-nine members from government, civil society, technical advisors, donor partners and the UN agencies.

References

1. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
2. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28.
3. Personal communication with Head of Mission, Medicins du Monde, Kabul, Afghanistan (23 February 2010).
4. Aceijas C et al. (2006) Estimates of injecting drug users at the national and local level in developing and transitional countries, and gender and age distribution. *Sexually Transmitted Infections* 82: 10–17.
5. Cook C and Kanaef N (2008) *Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
6. Mathers B et al. (2010) op. cit. Country Reports
7. Jia Y et al. (2008) Estimates of HIV prevalence in a highly endemic area of China: Dehong Prefecture, Yunnan Province. *International Journal of Epidemiology* 37: 1287–96.
8. Tanguay P. (2010) Global state of harm reduction responses through key regional stakeholder interviews.
9. Rao JVRP (2008) Speech at the opening ceremony of the Response Beyond Borders' first Asian consultation on the prevention of HIV related to drug use, 28 January.
10. Bergenstrom A et al. (2010) How much will it cost? Estimation of resource needs and availability for HIV prevention, treatment and care for people who inject drugs in Asia. *International Journal of Drug Policy* 21(2): 107–9.
11. IHRA (2010) Unpublished data.
12. Mathers B et al. (2010) op. cit. Annex 9.
13. HIV and AIDS Data Hub for Asia-Pacific (2010) *Law, Policy & HIV in Asia and the Pacific: Implications on the Vulnerability of Men Who Have Sex with Men, Female Sex Workers and Injecting Drug Users*.
14. CND Blog (A project of the IHRA administered in partnership with the International Drug Policy Consortium): www.cndblog.org/ (last accessed 9 March 2010).
15. UNODC (2009) Maldives marks first anniversary of its first Methadone clinic: www.unodc.org/southasia/frontpage/2009/November/methadone-clinic-in-maldives.html (last accessed 9 March 2010).
16. AHRN (2009) Harm reduction scale-up in Thailand. *AHRNews* 46/47: 14–15: www.ahrn.net/AHRN_Newsletter_46w.pdf (last accessed 9 March 2010).
17. Mathers B et al. (2010) op. cit. Appendix 10.
18. Human Rights Watch (2010) *"Skin on the Cable": The Illegal Arrest, Arbitrary Detention and Torture of People Who Use Drugs in Cambodia*. New York: Human Rights Watch.
19. International Harm Reduction Development Programme of the Open Society Institute (2009) *At What Cost? HIV and Human Rights Consequences of the Global "War on Drugs"*, New York: Open Society Institute.
20. UNODC (n.d.) GLO J71: Treating drug dependence and its health consequences – TREATNET Phase II: www.unodc.org/eastasiaandpacific/en/Projects/2008_01/Treatnet_Phase_II.html (last accessed 23 March 2010).
21. Cook C (2009) *Harm Reduction Policies and Practices Worldwide. An Overview of National Support for Harm Reduction in Policy and Practice*. London: IHRA.
22. CAVEAT (2009) Rushed process = bad laws: The changing DPR and how this affects Indonesia. *CAVEAT: Indonesia's Monthly Human Rights Analysis* 4(1): 3–4: www.idpc.net/sites/default/files/alerts/CAVEAT%20-%20Vol%2004%20-%20I%20A4.pdf (last accessed 9 March 2010).
23. Bergenstrom, A (2010) Personal Communication with IHRA staff.
24. International Drug Policy Consortium (2010) Response Beyond Borders – Asian Parliamentary Standing Committee on Harm Reduction created: www.idpc.net/alerts/response-beyond-borders-asian-parliamentarians-form-harm-reduction-committee (last accessed 9 March 2010).
25. UNODC (2009) Asian drug users unite to form regional organization: www.unodc.org/india/asian-drug-users-unite-to-form-regional-organization.html (last accessed 9 March 2010).
26. Human Rights Watch (2009) Cambodia: Stop forced participation in drug trials: www.hrw.org/en/news/2009/12/19/cambodia-stop-forced-participation-drug-trials (last accessed 20 March 2010).
27. *Phnom Penh Post* (2010) Licence in limbo for drug NGO: www.phnompenhpost.com/index.php/2010010430614/National-news/licence-in-limbo-for-drug-ngo.html (last accessed 20 March 2010).
28. AHRN (2010) 2010 transitions: www.ahrn.net/Announcement.png (last accessed 9 March 2010).
29. See, for example, IHRA (2009) *From Evidence to Action: Reflections on the Global Politics of Harm Reduction and HIV*. Keynote addresses by Michel Kazatchkine, Executive Director, Global Fund to Fight AIDS, TB and Malaria; and Craig McClure, Executive Director, International AIDS Society at Harm Reduction 2009: IHRA's 20th International Conference, Bangkok, Thailand, April 2009. London: IHRA.
30. UNAIDS (2010) UNAIDS welcomes historic decision by Delhi High Court to annul the law that criminalizes adult homosexual relations: www.unaids.org/en/KnowledgeCentre/Resources/PressCentre/PressReleases/2009/20090702_PR_Section377.asp (last accessed 9 March 2010).
31. Cook and Kanaef (2008) op. cit. p. 30.
32. Bergenstrom A (2009) Estimating resource needs and gaps for harm reduction in Asia: www.ihra.net/Assets/1792/1/Presentation_20th_C2_Bergenstrom.pdf (last accessed 9 March 2010).
33. WHO Regional Office for the Western Pacific (2009) Meeting on the development of the regional strategy for harm reduction in Asia and the Pacific 2010–2015: Confronting HIV among people who use drugs, Kuala Lumpur, Malaysia, 7 to 9 December 2009: www.wpro.who.int/sites/hsi/hrstrategymeeting_kl_dec2009.htm (last accessed 9 March 2010).
34. UNAIDS (2009) Decisions, recommendations and conclusions. 24th meeting of the UNAIDS Programme Coordinating Board, Geneva, Switzerland, 22 to 24 June 2009: www.unaidspcbngo.org/pcb/blog/20090624_pcb_24_decisions_final_en.pdf (last accessed 9 March 2009).
35. ASEAN Secretariat (2009) Another step forward for regional human rights cooperation, Phuket, Thailand: www.aseansec.org/PR-Another-Step-Forward-for-Regional-HR-Cooperation.pdf (last accessed 9 March 2010).
36. United Nations Regional Task Force on Injecting Drug Use and HIV/AIDS for Asia and the Pacific: www.unodc.org/eastasiaandpacific/en/topics/hiv-and-aids/unrtf.html (last accessed 16 March 2010).

2.2 Regional Update: Eurasia

Map 2.2.1: Availability of needle and syringe exchange programmes (NSP) and opioid substitution therapy (OST)

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known

Table 2.2.1: Harm Reduction in Eurasia

Country/territory with reported injecting drug use[a]	People who inject drugs[1]	Adult HIV prevalence amongst people who inject drugs[1]	Harm reduction response[2]	
			NSP[b]	OST[c]
Albania	nk	nk	✓(3)	✓(1) (M)
Armenia	2,000	13.4%	✓(7)	✓(1) (M)
Azerbaijan	300,000	13%	✓(12–14)	✓(2) (M)
Belarus	76,500 [4]	1.5%	✓(52–64)	✓(1) (M)
Bosnia and Herzegovina	nk	nk	✓(6)	✓(6–8) (M)
Bulgaria	20,250	0.4%	✓(100)	✓(17) (M,O)
Croatia	15,000[4]	0.6%	✓(42)	✓(B,M)
Czech Republic	30,000[4]	0.05%	✓(109) (P)	✓(47) (B,M)
Estonia	13,801	72.1%	✓(36)	✓(8) (B,M)
Georgia	127,833	1.63%	✓(2–9)	✓(6–12) (M)
Hungary	3,941	0%	✓(25)	✓(13) (B,M)
Kazakhstan	100,000	9.2%	✓(159)	✓(2) (M)
Kosovo	nk	0%	✓	x
Kyrgyzstan	25,000	8%	✓(40) (P)	✓(14–18) (M)
Latvia	nk	8.15%	✓(13–22)	✓(1–9) (B,M)
Lithuania	5,123	2.4%	✓(10–19)	✓(14–18) (B,M)
Former Yugoslav Republic of Macedonia	nk	nk	✓(15)	✓(9) (M)
Moldova	3,500[4]	21%[4]	✓(31)	✓(4–5)[c] (M)[4]
Montenegro	nk	nk	✓(18)	✓(M)
Poland	nk	8.9%	✓(27)	✓(22) (B,M)
Romania	nk	1.44%	✓(49)	✓(6–8) (B,M)
Russia	1,815,500	37.15%[d]	✓(70)	x
Serbia	nk	nk	✓(13)	✓(14) (M)
Slovakia	18,841	0%	✓(20)	✓(12) (B,M,O)
Slovenia	7,310	0.4%	✓(17) (P)	✓(20) (B,M,O)
Tajikistan	17,000	14.7%	✓(35–40)	x[e]
Turkmenistan	nk	nk	✓(2)	x
Ukraine	291,000[4]	32.4%[4]	✓(985–1,323) (P)	✓(B,M)
Uzbekistan	80,000	15.6%	✓(235)	x[f]

nk = not known

a The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers. (P) = needles and syringes reported to be available for purchase from pharmacies or other outlets and (NP) = needles and syringes not available for purchase; where this is not referred to it is not known.
b The number in brackets represents the number of operational OST programmes, including publicly and privately funded clinics and pharmacy dispensing programmes. (M) = methadone, (B) = buprenorphine and (O) = any other form (including morphine and codeine).
c Sub-national data only.
d Year of estimate: 2003.
e In March 2010 the launch of the first pilot OST programme was imminent.
f A pilot programme was shut down in 2009.

Harm Reduction in Eurasia

The Eurasia region, comprising Central and Eastern Europe, as well as Central Asia, is home to over 3.7 million people who inject drugs, representing almost one-quarter of people who inject drugs worldwide.[6] The largest numbers are found in Russia (1.8 million), Azerbaijan (300,000) and Ukraine (291,000).[2] Data indicate that some Eurasian countries have the highest adult population prevalences of injecting drug use in the world, including 5.21% in Azerbaijan, 4.19% in Georgia, 1.78% in Russia and 1.16% in Ukraine.[1] Injecting drug use is driving HIV epidemics in most countries in Eurasia, where an estimated one million people who inject drugs are living with HIV.[1] There is also an extremely high prevalence of hepatitis C among this group, which, due to lack of access to treatment, is a major cause of death (see Chapter 3.1 on viral hepatitis). However, the leading cause of death among opioid users in many Eurasian countries continues to be overdose (see Chapter 3.6 on overdose and overdose prevention).

While harm reduction service provision continued to increase generally in 2008 and 2009, coverage remains limited. Needle and syringe exchange (NSP) is now provided in all of the twenty-nine countries/territories of the region.[9] However, a recent regional estimate of only nine syringes being distributed per person per year indicates very poor coverage.[2] Twenty-four countries/territories have opioid substitution therapy (OST),[h] but most of the programmes remain pilots and have not been systematically scaled up. The most significant OST scale-up in recent years occurred in Ukraine, where as of April 2010 harm reduction services are operating in all twenty-seven Ukrainian regions to varying degrees.

International financial support for harm reduction services has continued to rise in most Eastern European and Central Asian countries, particularly with the influx of funds from the Global Fund to Fight AIDS, Tuberculosis and Malaria. However, since 2008, a number of countries in the region are no longer eligible for Global Fund funding as growing GDPs have moved them into the World Bank's 'middle income' category. Although the impact of this is yet to be quantified, it is clear that many national governments have not supplemented the need for continued funding and technical assistance to sustain and expand the delivery of harm reduction services. For those countries that are members of the European Union, the challenge is in finding funds to meet European Commission co-funding requirements. Throughout Eurasia, there remains an urgent need to bolster national government support, both political and financial, in order to ensure the sustainability of existing harm reduction services and create an inclusive framework for their continuing development.

g A Global Fund grant is supporting NSP in Kosovo, where the NGO Labyrinth is providing needles and syringes at three sites in Pristine, Prizren and Gilan.
h Tajikistan will soon bring this to twenty-five of the twenty-nine countries.

Developments in harm reduction implementation

Needle and syringe exchange programmes (NSPs)

At least one NSP site is operating in every country and territory in the Eurasian region. NSPs have increased in number since 2008 in several countries, including Kazakhstan, Tajikistan, Estonia, Ukraine, Kyrgyzstan and the Czech Republic.[3] For instance, since 2008 the number of sites providing NSPs increased from 362 to between 985 and 1,323 in Ukraine and from 129 to 159 in Kazakhstan.[7] [8] Newly available data since 2008 indicate that two NSP sites have been operating in Turkmenistan's capital, Ashgabat.[9]

With the possible exceptions of Moldova, the Czech Republic, Estonia and Kazakhstan, where reports indicate medium or high levels of syringe distribution coverage, the rest of the region has very low coverage.[i] [2] NSP sites in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan are reported to reach approximately one-third of people who inject drugs and to distribute an average of ninety-two needles and syringes per person per year.[j] [2] The reach and availability of services, particularly in countries in Eastern Europe, is even more limited. In sixteen countries in the region where data are available, only between 7% and 15% of people who inject drugs are accessing NSPs at least once a year and only nine needles and syringes are distributed annually per person injecting drugs.[2] Government reports on progress towards national universal access targets indicate that across eighteen countries in the region an average of only one NSP site is available per 1,000 people who inject drugs.[10]

NSP service provision has not significantly increased in Russia since 2008 and only seventy sites provide NSP services, distributing nearly seven million needles and syringes per year but reaching only 7% of people who inject drugs in this vast country.[2] In most of the EU member states (with the exception of the Czech Republic and to some extent Hungary and Slovenia), although harm reduction is an integral part of national drug and/or HIV policies, barriers to scaling up and mainstreaming these services include lack of sufficient funding, political commitment, leadership and technical assistance.[3]

Five countries in the region – Armenia, Kyrgyzstan, Moldova, Belarus and Romania – have needle and syringe exchange in prisons (see Chapter 3.5 on harm reduction in prisons).

Since 2008 more countries in the region have introduced pharmacy-based NSPs (including Kyrgyzstan and Ukraine) and have piloted vending machines for dispensing syringes.[2] However, government support for these initiatives has been mixed. Despite well-established harm reduction services in the Czech Republic, two pilot vending machines were dismantled by government authorities. Similarly, authorities from the Kaliningrad Regional Department of the Russian Federal Drug Control Service attempted to ban NSPs in September 2008, ultimately without success. In 2009 Hungarian policy makers also voiced opposition to NSPs.[3]

i According to the WHO, UNAIDS and UNODC target-setting guide, medium NSP coverage is >100 to <200 needles/syringes per injector per year and high coverage is >200 needles/syringes per injector per year. However, given the difficulties in determining the size of the population who inject drugs and NSP monitoring data, these estimates must be interpreted with caution.
j Almost reaching medium coverage levels (>100 to <200 needles/syringes per injector per year) as defined by WHO, UNODC and UNAIDS.

Opioid substitution therapy (OST)

Across the Eurasian region, all but five countries and territories have some form of OST provision. Programmes will soon begin operating in Tajikistan and Kosovo, but in Russia, Turkmenistan, Kosovo and Uzbekistan (where a pilot OST site was shut down in June 2009)[11] OST is not available.[2] Even where programmes exist, OST is accessible to less than 5% of opioid users, with some exceptions in Croatia, Slovenia, Hungary and the Czech Republic.[12] In Eastern Europe and Central Asia, only 1% of people who inject drugs are reported to be receiving OST[2] and OST programmes have generally remained at the pilot stage rather than systematically scaling up.

There has been some progress made since 2008, with OST programmes expanding in Albania, Georgia, Macedonia, Armenia, Kazakhstan and Azerbaijan.[3] Kazakhstan introduced OST in 2008 and now has two methadone maintenance treatment (MMT) sites serving fifty individuals in the two cities with the largest registered HIV-positive injecting drug using populations.[2] Armenia launched a pilot MMT programme in September 2009. Additional developments in OST site scale-up include a second OST clinic in Macedonia, two new MMT centres in Albania and up to twelve state-funded MMT sites reaching approximately 1,200 people in Georgia. Following a positive outcome evaluation of a pilot programme implemented during 2008, Belarus officially allowed the use of MMT as a registered opioid dependence treatment. In Tajikistan, the first pilot OST programme is expected to begin prescribing imminently.[3]

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) reports that legal obstacles to OST provision in a majority of the EU member states in Eurasia[k] have been removed, with OST regulation and implementation being assumed by health ministries.[13] Although there is limited access to OST in all of these countries, scale-up of services has been steadily progressing.

Despite positive developments in the region, several barriers remain to the provision and scale-up of OST. In most countries where OST is available, sites are located in the capital and/or another major city, making it challenging for all individuals who require treatment to make daily visits to the site(s). For instance, in Moldova, less than 1% of people who inject drugs have access to MMT and, as of August 2008, methadone programmes were available only in the capital city, Chisinau, and one other major city, Balti.[14]

Political and legal opposition to OST remains the biggest obstacle in Russia, the country with the highest number of people who inject drugs in the region and an HIV prevalence of more than 37% among that population. Russian officials defended the ban on OST at the 2009 Eastern Europe and Central Asia AIDS Conference and documented their position in the new Russian anti-drug policy strategy in December 2009. At the 53rd UN Commission on Narcotic Drugs (CND) in March 2010, the director of the Russian Federal Drug Control Service reiterated the Russian position, provoking disagreement from the UNODC executive director and the head of the European Commission's drug unit. The Uzbek government recently discontinued a pilot OST programme citing its ineffectiveness as justification for the action.[11] There is an urgent public health need to mobilise government support around the provision of evidence-based NSP and OST services for people who inject drugs.

k Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia.

As in 2008, other significant constraints for OST in the region include the sharing of medical information between health and law enforcement agencies across Central Asia, Georgia, Russia and Ukraine,[15] a failure to prioritise OST over abstinence-based programmes[l] [16] and a need to discard limitations on primary health care and non-governmental organisation (NGO) provision of OST.[17]

Scaling up harm reduction in Ukraine

With the introduction of a new harm reduction law in 2008 and significant scale-up of services, Ukraine's response has become one of the most comprehensive in the region. By late 2009 Ukraine had the largest number of people receiving OST (up to 5,000) among post-Soviet countries. By 2012 Ukraine plans to increase the number of OST clients to 11,300 people (500 people receiving buprenorphine and 10,800 receiving methadone). To sensitise Ukrainian society to wider OST coverage, a large-scale social campaign known as 'Return ticket' has been launched by people receiving OST. This campaign aims to stimulate open and evidence-based dialogue about drug dependence therapy and to build support among policy makers, law enforcement authorities and the general population.[3]

Antiretroviral therapy (ART)

Approximately one million people who inject drugs are living with HIV throughout the Eurasian region.[2] New estimates indicate that access to ART for people who inject drugs remains limited. Where data were available,[m] the highest estimates of people who inject drugs receiving ART were in Ukraine (1,860), Russia (1,331) and Poland (1,372). However, these estimates represent very low percentages of the total number of injecting drug users living with HIV, ranging from less than 2% in Ukraine to only 0.2% in Russia.[2]

Overall, ART coverage in eighteen Eurasian countries has reportedly risen from reaching 16% of people who needed it in late 2007 to 23% in late 2008.[10] Continued challenges are faced in programme planning, procurement and distribution, but to reach people who inject drugs, there is a need for further linkages between ART programmes and harm reduction services, particularly OST and peer support services.[3]

Policy developments for harm reduction

In 2008 twenty-four Eurasian countries/territories had national HIV or drug policies explicitly supporting harm reduction;[7] in 2010 this has increased to twenty-five.[n] Bosnia and Herzegovina established a National Office on Drugs as part of a newly developed national drug strategy in 2009. Certificates for all staff members of NGOs providing harm reduction services will be issued by the Ministries of Security and Health, bringing Bosnia and Herzegovina a few steps closer to the institutionalisation of harm reduction.[3]

l In order to access OST in Kazakhstan, Kyrgyzstan and Tajikistan, people must have a history of unsuccessful attempts at treatment through state abstinence-based programmes.

m All countries and territories except Turkmenistan, Romania, Hungary, Kosovo and Azerbaijan.

n Azerbaijan, Kosovo, Russia and Turkmenistan remain the exceptions.

In the majority of countries in the region (particularly Georgia, Russia and Ukraine), national drug policy documents and budgets continue to prioritise drug supply reduction as the key pillar of drug policy, resulting in an over-reliance on law enforcement and neglecting investment in drug demand or harm reduction. In Georgia, where drug use is highly criminalised, significantly more funds are attributed to drug testing than to treatment, and fines for users who test positive may reach up to 200% of the average monthly salary.[18] An initial draft of Russia's new national drug strategy in December 2009 explicitly mandated opposition to harm reduction, but a strong civil society response resulted in the clause being removed.[19] On the other hand, following in the footsteps of several Latin American states (see Chapter 2.5), Armenia decriminalised drug consumption in 2009.

Developments since 2008 indicate a growing emphasis on harm reduction and health within drug policy in some new EU states. For example, Hungary's 2010–2018 drug strategy outlined a multidisciplinary and balanced approach to supply and demand reduction, with harm reduction as a key component and endorsing human rights, access to health and evidence as main principles.[20] In Lithuania, research indicates that since EU accession, health spending per drug user has increased significantly.[17]

The adoption of the new Political Declaration on Drugs at the High Level Segment (HLS) of the 2009 CND provided a platform for several countries to declare political support for harm reduction. Twenty-six countries, including nine Eurasian states,[o] signed a statement declaring that they interpret the new declaration to support harm reduction.[21] However, the lack of explicit reference to harm reduction in the political declaration has already posed challenges. In Hungary, where a progressive drug policy was adopted in December 2009, harm reduction opponents referred to the declaration in ultimately unsuccessful attempts to exclude harm reduction from the national policy.[22]

Civil society and advocacy developments for harm reduction

Civil society participation in advocacy for harm reduction has increased in the past two years. 'Beyond 2008', a project that sought to include NGO perspectives in the development of the new Political Declaration on Drugs, was an important forum for mobilising civil society. It brought together forty representatives in two regional consultations and resulted in enhanced civil society participation at the HLS of the 2009 CND. National delegations from Albania, Ukraine and Georgia included civil society representatives. In addition, Ukraine, Kyrgyzstan and Georgia produced national reports assessing harm reduction policy in their countries from 1998 to 2008, which provided the basis for the messages delivered by their national delegations.[3]

Advocating for harm reduction in Russia

At the third Eastern Europe and Central Asia AIDS Conference (Moscow, 28 to 30 October 2009), it became clear that the Russian government did not plan to provide the funding pledged at the second conference for its most-at-risk populations. This could have resulted in the closure of more than 200 NGOs providing services for people who inject drugs and other at-risk populations. In one of the largest civil-society-led campaigns in the region, the Eurasian Harm Reduction Network (EHRN) and partners appealed to the GFATM Board of Directors to grant a two-year extension to the Russian 3rd Round GFATM Programme, GLOBUS (the largest source of financial support for harm reduction in Russia). More than 200 civil society organisations from around the world joined the campaign, including IHRA and several other regional and national harm reduction networks. In response to the appeal, the GFATM Board agreed to provide emergency funds of up to US$24 million until the end of 2011 to ensure the continuation of essential harm reduction programming in Russia.[23]

Since 2008 there have also been notable developments in civil society organising at the sub-regional and national levels. New civil society networks have been formed, including the Azerbaijan Harm Reduction Network and the Central Asian Network of People Living with HIV established in late 2009. Membership of the EHRN has continued to grow and in 2010 the Eurasian Network of People Who Use Drugs formed, covering Eastern Europe and Central Asia and linked to the International Network of People Who Use Drugs (INPUD).

Several national networks have increasingly sought a voice in drug, HIV and harm reduction legislation and policy. For instance, the Georgian Harm Reduction Network collected 58,000 signatures to reduce the strict sanctions for drug use and personal possession of drugs in 2008. In the same year successful national mobilisation of partners led by the National Association of People Living with HIV halted the interruption of ART in Latvia. In October 2009 the Romanian Harm Reduction Network and its members sent a position letter to the Romanian Prime Minister criticising the decision to restructure the oldest OST clinic in the country and discontinue MMT to 290 patients. This action resulted in a meeting with the Minister of Health and the subsequent transfer of the patients to other treatment facilities.[3]

While there are many examples of strong civil society in the region, there is a clear need for capacity building and technical assistance, particularly around accessing and managing GFATM funds. Assessments in Armenia, Belarus and Tajikistan indicated that one of the leading obstacles to the broader participation of civil society in the HIV response is the prohibitively strict criteria for sub-recipient selection set up by the principal recipients in each country. Awareness and understanding of GFATM processes is limited in many Eurasian civil society organisations focused on harm reduction, as is their capacity to bid for involvement in a GFATM programme. It is hoped that the GFATM community systems strengthening framework will increase access to funds for civil society organisations (see Chapter 3.7 on resourcing harm reduction).[24]

o Bulgaria, Estonia, Georgia, Hungary, Latvia, Lithuania, Poland, Romania and Slovenia.

Multilaterals and donors: Developments for harm reduction

The international financial crisis has affected harm reduction services throughout the region. Where national governments do fund harm reduction programmes, spending on such services remains disproportionately low, with the crisis leading to further spending cuts in many countries. For instance, the Lithuanian AIDS Center was merged with the Centre for Prevention and Control of Communicable Diseases at the end of 2009, raising concerns that the quality and scale of care provided to people living with HIV may be compromised. In Kyrgyzstan, the National Drug Control Agency was abolished during recent government reforms and its functions were transferred to the Ministry of Internal Affairs, which had also recently downsized. Budget cuts to already limited services will have significant negative outcomes and result in increased health care costs in the long term.[3]

While the Global Fund remains the main funder of harm reduction in the region, there have been some developments over the past two years. In 2008 several countries in the region became ineligible for Global Fund funding as their economies expanded beyond the low-income country criteria.[p] Also, in late 2008, the Global Fund requested that a number of recent Eurasian grantees improve efficiency and cut costs; for example, by as much as 10% in Ukraine. The Global Fund conducted an internal audit in 2009 of all three components of the Kyrgyzstan programme, resulting in the decision to freeze new financial transfers temporarily.

EU member states in Eurasia have increasingly struggled with securing funds to replace dwindling international support for harm reduction activities. In most cases, countries are unable to co-fund to the extent (between 20% and 40% of the total programme cost) required by the European Commission (EC) and so they lack the capacity necessary to apply and implement programmes though EC mechanisms.

The WHO, UNODC and UNAIDS continue to play a major role in the provision of technical assistance across the region, including piloting OST, developing clinical protocols and facilitating advocacy and policy dialogue on harm reduction. In addition, in 2009 the World Bank, with technical support from EHRN, established the Central Asian Information and Training Center on Harm Reduction within the Central Asia AIDS Control Project (CAAP).[3]

UN Special Rapporteurs call for harm reduction

In 2009 reports from UN Special Rapporteurs on the Right to the Highest Attainable Standard of Health and on Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment called for the decriminalisation of drug use and increased access to health care, including OST and ART, in Poland and Kyrgyzstan. The Polish report stated that the promised scale-up of methadone clinics to reach 20% of those in need by 2010 was not a high enough target and represented a minimal step towards addressing the problem. Access remains poor outside major cities such as Warsaw and Krakow and the report urged local authorities in Gdansk to provide a methadone maintenance programme as soon as possible.[25] The report on Kyrgyzstan stated that HIV among people who inject drugs required urgent attention as a matter of public health and human rights. It also called for reform of national drug legislation, which still allows penalties for drug use.[26]

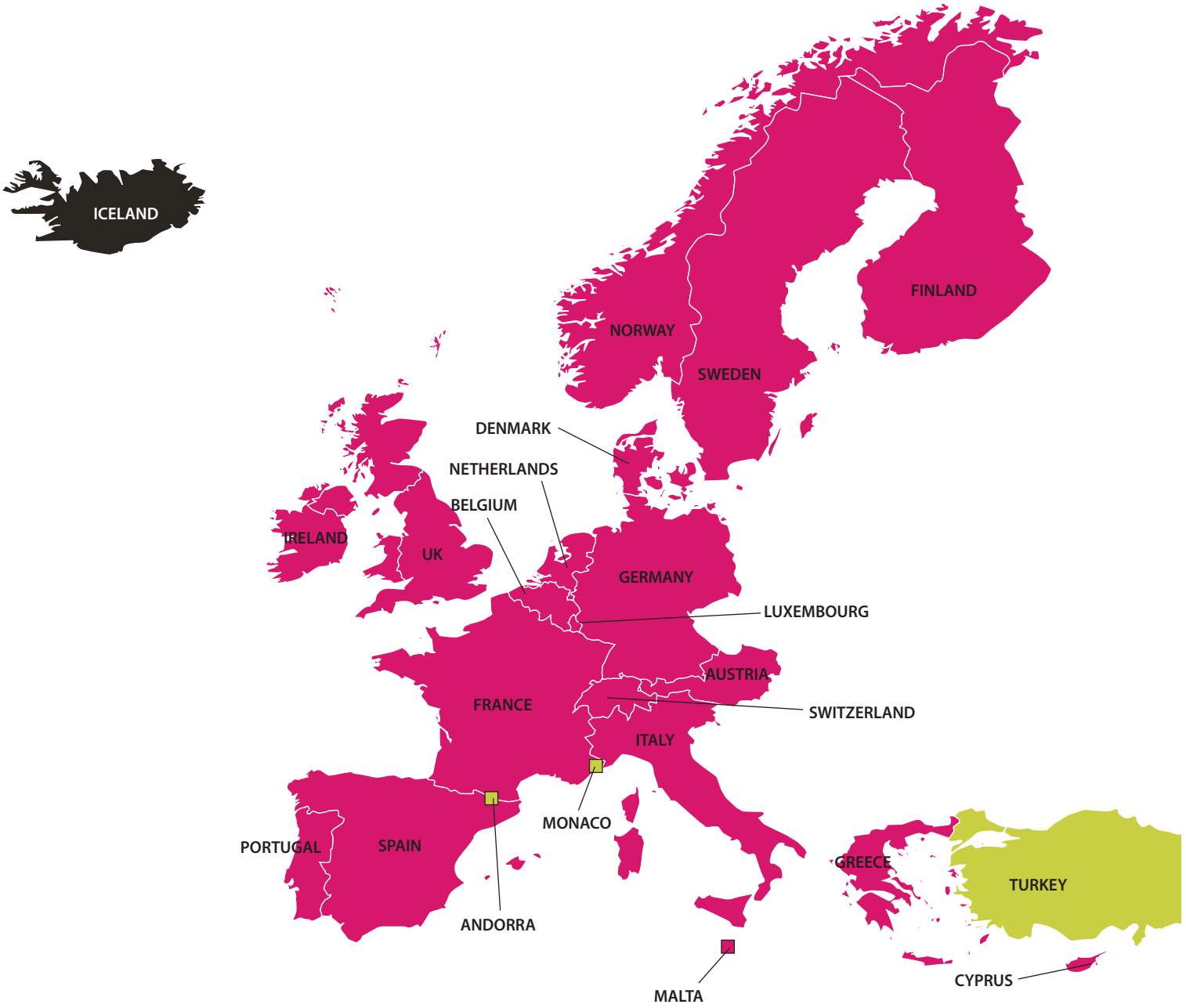
UNODC also coordinates projects in a number of Eurasian countries that play a significant role in national and local capacity building for harm reduction. For instance, through the TREATNET project, UNODC facilitates capacity building on evidence-based approaches to drug dependency treatment in Central Asia. The UNODC regional office maintains a project focused on HIV prevention, treatment and care among people who inject drugs in Estonia, Latvia and Lithuania, including the provision of technical assistance to various stakeholders on harm reduction in prisons. UNODC and WHO are also among the main donors (along with German bilateral funds from GTZ) of the EHRN Harm Reduction Knowledge Hub for Europe, which has recently developed and tested new technical assistance tools, including training modules on gender-specific harm reduction services and overdose prevention programming.[3]

p The key criteria for GFATM eligibility is the low-income economy of a country, assuming that middle- and high-income countries can and will cover health-related costs themselves.

References

1. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
2. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28.
3. Merkinaite S (2010) Global state of harm reduction information collection response.
4. Mathers B et al. (2010) op. cit. Country reports
5. Kosovo AIDS Committee (2008) UNGASS Country Progress Report: Kosova/o (United Nations Administered Territory through United Nations Mission in Kosova/o – UNMIK) January 2006 to December 2007.
6. Mathers B. et al. (2008) op. cit. p. 1745.
7. Cook C and Kanaef N (2008) *Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
8. Mathers B. et al. (2010) op. cit. Appendix 9.
9. UNDP National Programme Turkmenistan 2005–2009: www.undptkm.org/index.php?option=com_content&task=view&id=404 (last accessed 17 March 2010).
10. WHO (2009) *Towards Universal Access: Scaling Up Priority HIV/AIDS Interventions in the Health Sector: Progress Report 2009*. Geneva: WHO and UNAIDS.
11. EHRN: www.harm-reduction.org/news/1310-closure-of-pilot-ost-programs-in-uzbekistan.html (last accessed 17 March 2010).
12. Aizberg O (2008) *Opioid Substitution Therapy in Selected Countries of Eastern Europe and Central Asia*. Vilnius: EHRN and International AIDS Society.
13. EMCDDA (2009) *Annual Report 2009: The State of the Drugs Problem in Europe. The European Monitoring Centre of Drugs and Drug Addiction*. Luxembourg: Publications Office of the European Union.
14. Hoover J and Jürgens R (2009) *Harm Reduction in Prison: The Moldova Model*. New York: Open Society Institute.
15. Shields A (2009) *The Effect of Drug User Registration Laws on People's Rights and Health: Key Findings from Russia, Georgia and Ukraine*. New York: Open Society Institute.
16. WHO (2009) *Guidelines for the Psychosocially Assisted Pharmacological Treatment of Opioid Dependence*. Geneva: WHO.
17. Latypov A et al. (2010) *Opioid Substitution Therapy in Central Asia: Towards Diverse and Effective Treatment Options for Drug Dependency*. Executive Summary. Vilnius: EHRN.
18. Stuikyte R et al. (2009) *The Impact of Drug Policy on Health and Human Rights in Eastern Europe: 10 Years after UN General Assembly Special Session on Drugs*. Vilnius: EHRN.
19. Draft Russian Federation drug policy: www.stratgap.ru/pages/strategy/project/index.shtml (last accessed 22 March 2010).
20. Hungarian Civil Liberties Union (2009) How the UN sets back harm reduction in Hungary: http://drogriporter.hu/en/drugstrategy (last accessed 27 March 2010).
21. Economic and Social Council Official Records (2009) *Supplement No. 8 United Nations Commission on Narcotic Drugs Report on the Fifty-Second Session (14 March 2008 and 11–20 March 2009)*: New York: UN, p. 119.
22. EHRN (2010): www.harm-reduction.org/news/1643-hungary-storm-in-a-teacup-or-drawback-of-harm-reduction.html (last accessed 29 March 2010).
23. International AIDS Society and IHRA media release: www.ihra.net/Assets/2392/1/MediaRelease-2009-11-13.doc (last accessed 22 March 2010).
24. GFATM (2010) Draft community systems strengthening framework: www.aidsalliance.org/includes/document/CSS_framework.pdf (last accessed 22 March 2010).
25. Fifth periodic report of Poland to the UN Committee on Economic Social and Cultural Rights. Briefing by the Open Society Institute Global Drug Policy Program and the International Harm Reduction Association (2010) Opioid Substitution Treatment (OST) of people who are opiate dependent – Article 12 of the Covenant (Follow up to the mission to Poland of the Special Rapporteur on the Right to the Highest Attainable Standard of Health, Anand Grover).
26. UN General Assembly (2009) Report of the Special Rapporteur on torture and other cruel, inhuman or degrading treatment or punishment, Manfred Nowak – Mission to Kazakhstan. A/HRC/13/39/Add.3.

2.3 Regional Update: Western Europe



Map 2.3.1: Availability of needle and syringe exchange programmes (NSPs) and opioid substitution therapy (OST)

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known

Table 2.3.1: Harm reduction in Western Europe

Country/territory with reported injecting drug use[a]	People who inject drugs[1]	Adult HIV prevalence amongst people who inject drugs[1]	Harm reduction response[2]		
			NSP[b]	OST[c]	DCR[d]
Andorra	nk	nk	x	x	x
Austria	17,500	7.1%	✓(27)	✓(B,M,O)	x
Belgium	25,800	4.3%	✓(34) (P)	✓(B,H,M)	x
Cyprus	305	0%	✓(1) (P)	✓(1) (B)	x
Denmark	15,416	2.1%	✓(135)	✓(B,H,M)	x
Finland	15,650	0.2%	✓(52)	✓(B,M)	x
France	122,000	12.2%	✓(416–2,014) (P)	✓(19,484) (B,M,O)	x
Germany	94,250	2.9%	✓(250)	✓(2,786–6,626) (B,H,M)	✓
Greece	9,720	0.5%	✓(4) (P)	✓(17) (B,M)	x
Iceland	nk	nk	x	✓(B,M)	x
Ireland	6,289	5.8%	✓(33) (P)	✓(332) (B,M)	x
Italy	326,000	12.1%	✓	✓(B,M)	x
Luxembourg	1,715	2.8%	✓(4)	✓(B,M,H,O)	✓
Malta	nk	nk	✓(7)	✓(≥2) (B,M)	x
Monaco	nk	nk	x	x	x
Netherlands	3,115	9.5%	✓(150) (P)	✓(B,H,M)	✓
Norway	10,049	3.2%	✓(22) (P)	✓(B,M)	✓
Portugal	32,287	15.6%	✓(27) (P)	✓(B,M)	x
Spain	83,972	39.7%	✓(1,271–1,458) (P)	✓(497–2,229) (B,H,M)	✓
Sweden	nk	5.4%	✓(2)	✓(B,M)	x
Switzerland	31,653	1.4%	✓(101) (P)	✓(B,H,M,O)	✓
Turkey	nk	2.65%	x	x	x
UK	156,398	2.3%	✓(1,523) (P)	✓(B,H,M)	x

nk = not known

a Information on injecting drug use and harm reduction was not available for Liechtenstein and San Marino.
b The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers. (P) = needles and syringes reported to be available for purchase from pharmacies or other outlets.
c The number in brackets represents the number of operational OST programmes, including publicly and privately funded clinics and pharmacy dispensing programmes. (B) = buprenorphine, (H) = heroin-assisted treatment, (M) = methadone and (O) = any other form (including morphine and codeine).
d Drug consumption room (DCR).

Harm Reduction in Western Europe

There are estimated to be approximately one million people who inject drugs in Western European countries.[1] HIV prevalence among people who inject drugs is below 10%, with the exception of France, Italy, Portugal and Spain.[1] Data show that Western European countries with good coverage of harm reduction programmes have seen 'especially pronounced' reductions in drug-related HIV transmission.[3] For example, whereas in Switzerland in the 1980s the majority of new HIV diagnoses were among people who inject drugs, in 2008 this figure was only 4%; in the Netherlands the figure was 5% in 2007.[3] Across the region, 8% of new HIV diagnoses in 2007 were among people who inject drugs.[4]

Harm reduction forms an integral component of both HIV and drug policy and programmes in most Western European countries. It is also emphasised at the regional level in the European Union's current drug strategy and action plan.[5] [6] In early 2010 almost every country with reported injecting drug use had key harm reduction interventions in place (the exceptions being Andorra, Monaco and Turkey). Several countries also include drug consumption rooms, syringe vending machines and the prescription of injectable opioid substitution therapy and diacetylmorphine (pharmaceutical heroin) among their harm reduction interventions.

There remains much variation in harm reduction coverage. Some countries, such as Cyprus and Greece, currently reach low proportions of injecting populations with sterile injecting equipment and opioid substitution therapy (OST). Even within countries with long-established services, large areas are not covered and constraints on funding pose barriers to increasing access to these services. Furthermore, other drug-related health harms, such as viral hepatitis and overdose, remain leading causes of death among people who inject drugs.

Many European governments provide bilateral support for harm reduction programmes in low- and middle-income countries and are among the most vocal in support of harm reduction in international fora. However, the 'common position' of EU states on harm reduction may be fragile and could waver, for example with changes in policies of member states. There is a need for increased civil society action, as well as continued government support, to keep Western Europe at the forefront of the harm reduction response.

Developments in harm reduction implementation

Needle and syringe exchange programmes (NSPs)

The majority of states with reported injecting drug use in Western Europe have NSP sites. In 2010 the countries without NSPs, where injecting had been reported, were Andorra, Iceland, Monaco and Turkey. Various service delivery models are used across the region, including stand-alone sites, those situated within drugs services, pharmacy-based NSPs and outreach (including peer outreach), although not all are used in all countries. Some countries also have vending machines[e] and mobile NSP sites.[7] The latest available data indicate that the number of operational NSP sites varies widely from less than five in Cyprus (where only one site exists and it is yet to receive government endorsement), Sweden, Luxembourg and Greece to up to 1,458 in Spain and 2,014 in France. The Netherlands is reported to have the most NSP sites per 1,000 people who inject drugs (50), followed by Spain (14.6) and the UK (10.7).[8]

Although data reporting systems are generally stronger in Western Europe than in most other regions, there is still a lack of available national data on the extent to which NSPs are utilised by people who inject drugs. This is partly due to a lack of harmonised indicators, incomplete information in some countries and an absence of reliable estimates of the prevalence of drug injecting.[f] [9]

According to the information available, the highest utilisation figures are from Finland, where 81% of people who inject drugs accessed NSPs in a year, the equivalent of 13,000 people.[2] However, this is a poor indicator for HIV prevention, as it includes people that may have only visited once in a year.

A more informative measure is the rate of syringe distribution. Several countries are reported to distribute sterile injecting equipment to coverage levels nearing or above 200 syringes per person injecting drugs per year, as recommended by UN agencies.[10] These include Norway, the country with the highest reported distribution in the world (434), Portugal (199), the UK (188) and Austria (176).[2]

Western Europe is often cited as having high harm reduction coverage, particularly when compared with most low- and middle-income countries,[11] [12] however, there is substantial room for improvement.[13] Several countries in this region have low NSP coverage, and even where higher coverage exists, funding, political support and legal restrictions often limit the service that can be provided.

Civil society organisations in the UK, for example, have recently engaged in a campaign for legal reform in order to allow the provision of foil for drug smoking at NSPs. Providing foil to people who inject drugs can be considered a route transition intervention, as it aims to encourage injectors to engage in less risky drug taking behaviour.[14] Spanish and Dutch NSPs already provide this service, along with many in the UK, some of which have had 'letters of comfort' from local law enforcement bodies stating that workers will not be prosecuted.

---

e Austria, Denmark, France, Germany, Italy and Luxembourg.
f More estimates are available for 'problem drug use', although definitions vary from country to country.

A recent welcome development is the vote by Stockholm City Council to introduce NSPs into the city, expected by the end of 2010.[15] Sweden has previously been criticised for its poor implementation of harm reduction measures, which in terms of needle and syringe provision consisted of two NSPs (neither in Stockholm) with 1,230 individual clients.[2] A further limiting factor for people who inject drugs trying to obtain sterile injecting equipment is that syringe sales remain illegal in Sweden. Although the most recent systematic review by the Reference Group to the United Nations on HIV/AIDS and Injecting Drug Use found no reliable estimate of the number of injecting drug users in the country, the European Monitoring Centre on Drugs and Drug Addiction (EMCDDA) estimates there to be 26,000 people who use drugs problematically.[9] [16]

Drug consumption rooms (DCRs)

Drug consumption rooms are a largely European intervention and the region is home to all but two facilities worldwide. There are ninety operational DCRs across fifty-nine cities in the Netherlands, Germany, Luxembourg, Norway, Spain and Switzerland. These facilities, often part of another drug service, allow people to use drugs under the supervision of trained staff and without fear of arrest. Estimates show that these are well-utilised facilities, with tens of thousands of supervised consumptions reported in Luxembourg, Norway and in several German cities in 2007.[17] No additional countries have adopted DCRs as part of their harm reduction approach since 2008.

Opioid substitution therapy (OST)

The provision of methadone or buprenorphine as maintenance therapy is a common approach across the region, with only Andorra, Monaco and Turkey not employing this harm reduction intervention. New data indicate that at least one OST site operates in Iceland, with fifteen people receiving methadone maintenance therapy (MMT), although it is not clear when it was introduced. Buprenorphine is also available, however, there is a lack of information on the numbers being reached.[18]

In many Western European countries, the number of sites providing OST is not known. This may be partly due to the variety of service provision sites (including through general practitioners in France, Germany and the UK)[19] and a lack of national systems to compile information. Where data are available, provision ranges from as little as one site in Cyprus and two sites in Malta to between 497 and 2,229 sites in Spain, between 2,786 and 6,626 sites in Germany and 19,484 sites in France.[8]

The number of people receiving OST varies widely across the region, from small numbers in Iceland (fifteen people receiving MMT) and Cyprus (between nineteen and seventy-one people receiving buprenorphine from seven sites) to over 100,000 people receiving various forms of OST in the UK, France and Italy.[2] A recent analysis of OST coverage in European countries with estimates of the number of people with problem opioid use found that only Germany, Italy, Austria and Malta were meeting or exceeding the 40% deemed to be 'high coverage' by WHO, UNODC and UNAIDS.[10] [20] As in 2008, service access and uptake is limited by several factors, including strict policies and waiting lists for entry to programmes. In some countries, the cost to the individual acts as a barrier, as does the poor availability of 'take-home' doses.[9]

Western Europe offers a wider variety of OST options than other parts of the world. Almost all countries provide both methadone and buprenorphine for maintenance and some also offer slow-release codeine. Others include injectable OST among their drug treatment options (for example, the UK, Switzerland and the Netherlands) and the use of heroin-assisted treatment (HAT) is becoming more common in the region (see table 2.3.1).

Heroin-assisted treatment

Seven Western European countries currently provide pharmaceutical heroin (diacetylmorphine) as maintenance therapy – Denmark, Germany, the Netherlands, Spain, Switzerland, the UK and, most recently, Belgium and Luxembourg (pilot programmes). Randomised controlled trials have found that this practice can reduce drug-related crime and health harms, with researchers concluding that it is both safe and cost-effective.[21] [22]

Antiretroviral therapy (ART)

Western Europe is reported to have the highest regional level of ART coverage among people who inject drugs in the world.[2] Data from thirteen countries (representing 46% of the total estimated HIV-positive injecting population in the region) suggest that eighty-nine in every 100 people living with HIV who inject drugs are receiving ART.[2] National data is not available for every country, however, coverage varies widely: from Andorra (1 person) to Germany (3,000) to Spain (39,524).

However, the EMCDDA reports that the relatively high numbers of people receiving AIDS diagnoses in Portugal and Spain (8.6 and 8.8 new cases per million population respectively) may indicate that significant numbers of people who inject drugs are not benefiting from ART, possibly due to late diagnosis.[20]

Policy developments for harm reduction

The vast majority of Western European countries include harm reduction in their national policies on HIV and/or drugs. A recent analysis found that at least twelve countries in the region specifically refer to harm reduction in their national drug policies.[h] [23] The authors describe national drug policies across Europe as occupying a 'coordinated and increasingly coherent "middle ground" policy on drugs', accepting harm reduction within a 'recognisably shared approach'.[23]

In international fora, the EU has increasingly spoken with a unified voice on drug policy issues.[23] For example, the EU played a key role in emphasising demand reduction within the negotiations on the new Political Declaration on Drugs at the High Level Segment of the Commission on Narcotic Drugs (CND) in 2009. Although explicit reference to harm reduction was struck from the final agreed text, the vast majority of the Western European delegations signed an 'interpretative statement' indicating their intention to interpret the term 'related support services' contained in the final declaration to include harm reduction services.[24]

g The EMCDDA defines problem drug use as intravenous drug use or long duration/regular drug use of opiates, cocaine and/or amphetamines. Ecstasy and cannabis are not included in this category.

h Belgium, Denmark, Germany, Ireland, Spain, France, Cyprus, Luxembourg, the Netherlands, Portugal, Finland and the UK. There is no national drug policy in Austria, instead policies exist at the provincial level.

At the regional level, the EU's drug strategy and action plan for 2009 to 2012 emphasises harm reduction as a key component within the drug response. On evaluating progress on the previous action plan (2005 to 2008), which also included harm reduction, the European Commission (EC) concluded that 'further improvements are still needed in [the] accessibility, availability and coverage' of harm reduction services across the region.[25] It also highlighted shortcomings of current responses in addressing the needs of subpopulations such as women, young people, migrants and specific ethnic groups.[25]

While European policies in general include an emphasis on a public health approach to drugs, the region-wide consensus on harm reduction has the potential to be weakened. Government changes, financial crises and a continued emphasis on abstinence-based treatment and drug prevention programmes are factors that may cause the consensus to waver. For example, both Sweden and Italy do not include harm reduction in their national drug policies and, on occasion, have been less than supportive of the term in international fora.

NSP and OST appear to be accepted by most European drug policy makers, but a wider interpretation of harm reduction is not accepted by all, with DCRs and heroin prescription remaining the most controversial interventions. There is a continued need for government commitment to evidence-based drug policy in order for Europe to remain securely at the forefront of harm reduction.

Civil society and advocacy developments for harm reduction

Civil society organisations have long been central to harm reduction advocacy in Western Europe and there have been several important developments in this regard. For example, the involvement of civil society representatives on CND delegations has increased. Representatives of the International Network of People Who Use Drugs (INPUD) and the International Harm Reduction Association (IHRA) have been part of the UK delegation in both 2009 and 2010 and a representative of the Transnational Institute was included in the Netherlands delegation in 2009.

Regular national and Europe-wide events bring civil society organisations together to share latest experiences on harm reduction and drug policy. Over the past two years, region-wide events have included the 1st and 2nd Connections Conferences covering 'Drugs, alcohol and criminal justice: Ethics, effectiveness and economics of interventions' and the 2nd General Meeting of the Correlation Network (European Network on Social Exclusion and Health).

In July 2009 harm reduction advocates and frontline workers from Spain, France, Italy, Switzerland and the host country, Portugal, gathered for CLAT 5, the fifth Latin harm reduction conference, organised by APDES and Grup Igea.

National events addressing harm reduction are regularly held in several countries across the region. For example, Exchange Supplies hosts annual national conferences on injecting drug use and drug treatment, in Glasgow and London, which have a heavy harm reduction focus.

Although civil society advocates for harm reduction have a voice in many Western European countries, there is a need to strengthen networks and partnerships across countries to facilitate the sharing of information and to inform policy at the national and regional levels. This is particularly important given recent indications of a fragmenting EU common position on harm reduction.

To this end, new networks have been established in recent months, for example EuroHRN, an EC-funded project involving six main partners and three further associate partners across the region. IHRA acts as the coordinator and secretariat for EuroHRN. The network has three sub-regional hubs covering north, south and east Europe, which will be hosted by Akzept (Germany) and FRG (the Netherlands), APDES (Portugal) and the Eurasian Harm Reduction Network (Lithuania) respectively.

As part of the two-year project, EuroHRN will advocate for harm reduction within Europe; facilitate cross-regional learning on harm reduction; establish the state of harm reduction in Europe, with a particular focus on civil society action; and develop and disseminate best practice models for the meaningful involvement of people who use drugs.

EuroHRN will be officially launched at the Harm Reduction 2010 Conference in Liverpool in April 2010. The conference will also mark the first meeting of the recently formed Western European Network of People Who Use Drugs, which is aligned to INPUD.

Danish Drug Users Union: BrugerForeningen

BrugerForeningen (BF) was set up in 1993 by a group of people who were receiving methadone. Initially it was a drop-in centre and meeting place used by twelve to fourteen people. By 2000, with a new venue and funding from the Ministry of Social Affairs, it had become a network with a membership of approximately 600 people receiving methadone.

BF has worked in close collaboration with the national government. The BF president held a seat on the Danish government's *Narkotikaraadet*, an expert national drug advisory council that operated between 1998 and 2002. BF has also worked with the local police on initiatives such as SyringePatrol, whereby used syringes were collected across Copenhagen.

BF continues to advocate for quality harm reduction services and to support drug users in accessing them. It is currently advocating for an amendment to the strict entry criteria for heroin-assisted treatment, a service introduced in Denmark in early 2010.

Multilaterals and donors: Developments for harm reduction

Most support for harm reduction from multilateral agencies is not targeted towards the high-income countries of this region, but the EC has been an important donor for multi-country and international projects on drugs, including those related to harm reduction. For example, the EC has recently begun funding the Access to Opioid Medication in Europe (ATOME) project, a new consortium of scholars and public health specialists that will work to identify and remove the barriers in Europe preventing people from accessing critical opioid medications. This will include a substantial review of policies and legislation on opioid medicines in twelve European countries.[26] As mentioned above, EuroHRN is also an EC-funded project.

The WHO Regional Office for Europe continues to monitor HIV epidemics across the region, in collaboration with partners such as the European Centre for Disease Prevention and Control. In 2008 the agency released a report monitoring state progress against targets set in the 2004 Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia, which contained a chapter specifically dedicated to people who inject drugs.[19] The progress report found that among the worst implementation gaps were 'instituting harm-reduction programmes and confronting other injecting drug user (IDU) issues.'[19]

Several European governments provide essential funds for harm reduction in low- and middle-income countries. These include the UK Department for International Development, the Netherlands MOFA, NORAD (Norway) GTZ (Germany) and Swedish SIDA.

References

1. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
2. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28.
3. UNAIDS (2009) *AIDS Epidemic Update*. Geneva: UNAIDS.
4. van de Laar MJ et al. (2008) HIV/AIDS surveillance in Europe: Update 2007. *Eurosurveillance* 13(50).
5. Council of the European Union (2004) EU drugs strategy (2005–2012): http://europa.eu/legislation_summaries/justice_freedom_security/combating_drugs/c22569_en.htm (last accessed 8 April 2010).
6. Notices from EU institutions and bodies (2008) EU drugs action plan for 2009–2012. *Official Journal of the European Union* C 326/7.
7. EMCDDA (2009) *Statistical Bulletin 2009*. Lisbon: European Monitoring Centre for Drugs and Drug Addiction, Table HSR: Health and social responses: www.emcdda.europa.eu/stats09/hsr (last accessed 2 April 2010).
8. Mathers et al. (2010) op. cit. Appendix 9.
9. Cook C et al (2010) The diffusion of harm reduction in Europe and beyond, in *Harm Reduction: Evidence, Impacts and Challenges*, ed. Rhodes T and Hedrich D for EMCDDA. Scientific Monograph Series 10. Luxembourg: Publications Office of the European Union.
10. WHO, UNODC, UNAIDS (2009) *Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users*. Geneva: WHO.
11. Hedrich D et al (2008) From margins to mainstream: the evolution of harm reduction responses to problem drug use in Europe. *Drugs: education, prevention and policy* 15: 503–17.
12. Wiessing L et al. (2009) Associations between availability and coverage of HIV-prevention measures and subsequent incidence of diagnosed HIV infection among injection drug users. *American Journal of Public Health* 99 (6):1049–52.
13. Mathers et al. (2010) Improving the data to strengthen the global response to HIV among people who inject drugs. *International Journal of Drug Policy,* 21(2): 100–102
14. Bridge J (2010) Route transition interventions: Potential public health gains from reducing or preventing injecting. *International Journal of Drug Policy* 21(2): 125–8.
15. Personal communication with Berne Stalenkrantz, Chairperson, Swedish Drug Users' Union, 25 March 2010.
16. EMCDDA (2009) Country overview: Sweden: http://www.emcdda.europa.eu/publications/country-overviews/se#pdu (last accessed 2 April 2010).
17. Hedrich D et al. (2010) Drug consumption facilities in Europe and beyond, in *Harm Reduction: Evidence, Impacts and Challenges*, ed. Rhodes T and Hedrich D for EMCCDA. Scientific Monograph Series 10. Luxembourg: Publications Office of the European Union.
18. Mathers B et al. (2010) op. cit. Country Report.
19. WHO EURO and UNAIDS (2008) *Progress on Implementing the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia*. Copenhagen: WHO EURO.
20. EMCDDA (2009) *Annual Report 2009: The State of the Drugs Problem in Europe*. Lisbon: EMCDDA.
21. Haasen C et al. (2007) Heroin assisted treatment for opioid dependence: A randomised, controlled trial. *British Journal of Psychiatry* 191: 55–62.
22. Lintzeris N (2009) Prescription of heroin for the management of heroin dependence: Current status. *CNS Drugs* 23(6): 463–76.
23. MacGregor S and Whiting M (2010) The development of European drug policy and the place of harm reduction within this, in *Harm Reduction: Evidence, Impacts and Challenges*, ed. Rhodes T and Hedrich D for EMCCDA. Scientific Monograph Series 10. Luxembourg: Publications Office of the European Union.
24. Economic and Social Council Official Records (2009) *Supplement No. 8 United Nations Commission on Narcotic Drugs Report on the Fifty-Second Session (14 March 2008 and 11–20 March 2009)*. New York: UN.
25. European Commission (2008) EC staff working document. Accompanying document to the communication from the Commission to the Council and the European Parliament on an EU drugs action plan 2009–2012 – report of the final evaluation of the EU drugs action plan (2005–2008). Brussels: European Community.
26. WHO et al. (2010) Press release: ATOME project aims to improve access to pain medicines across Europe: www.ihra.net/Assets/2441/1/ATOMEPressRelease22022010.pdf (last accessed 3 April 2010).

2.4 Regional Update: Caribbean

Map 2.4.1: Availability of needle and syringe exchange programmes (NSP) and opioid substitution therapy (OST)

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known

Table 2.1.1: Harm reduction in the Carribean

Country/territory with reported injecting drug use[a]	People who inject drugs[1]	Adult HIV prevalence amongst people who inject drugs[1]	Harm reduction response[2]	
			NSP[b]	OST[c]
Bahamas	nk	nk	x	x
Bermuda	nk	nk	x	x
Dominican Republic	nk	nk	x	x
Haiti	nk	nk	x	x
Jamaica	nk	nk	x	x
Puerto Rico	29,130	12.9%[d]	✓(13)	✓(6) (M)
Suriname	nk	nk	x	x

nk = not known

a The latest UN Reference Group research once again found no reports of injecting drug use for Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, St Kitts and Nevis, St Lucia and St Vincent and the Grenadines. Although previous UN Reference Group research (used as a source of data for the 2008 Global State report) found injecting drug use in Cuba, Guyana and Trinidad and Tobago, the latest UN Reference Group research found no reliable reports of injecting drug use in those countries/territories.

b The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers.

c The number in brackets represents the number of operational OST programmes, including publicly and privately funded clinics and pharmacy dispensing programmes. (M) = methadone.

d Estimated from 1998–2001.

Harm Reduction in the Caribbean

After Sub-Saharan Africa, the Caribbean is the region of the world most affected by HIV and AIDS. In the Caribbean, the virus is predominantly sexually transmitted and injecting drug use remains rare in much of the region, with the exception of Puerto Rico. In 2008 a systematic review by the Reference Group to the UN on HIV and Injecting Drug Use found very limited reliable data on the numbers of people who inject drugs and the prevalence of HIV among injecting populations in the Caribbean. The Reference Group found reports of injecting drug use in only seven countries/territories in the region.[2] It is entirely possible, however, that injecting drug use occurs elsewhere in the region. For example, there are anecdotal reports of injecting drug use among the upper classes in Guyana and Trinidad and Tobago,[3] and there are indications that it may occur in Cuba,[4] but there are at present no reliable data to confirm these reports.

Data on injecting drug use and HIV are only available for Puerto Rico, where 29,130 people inject drugs, and 12.9% of them are estimated to be living with HIV.[1] Injecting drug use is the most common HIV transmission route there and represented 40% of HIV incidence among males and 27% of new infections among females in 2006.[5] Puerto Rico is a territory of the United States, and yet it experiences an HIV incidence rate double that of the US as a whole.[5]

As highlighted in the 2008 Global State report,[6] researchers in the region have reported a link between non-injecting drug use and sexual HIV transmission in several Caribbean countries, with HIV prevalence estimates among crack-cocaine-smoking populations reaching those found among injecting populations elsewhere.[7] Crack cocaine is widely available on most islands, due to drug transhipment routes, and its use is reported to be 'extensive'.[3]

The harm reduction response remains very limited, with needle and syringe exchange and opioid substitution therapy only available in Puerto Rico. The predominant response in the rest of the region is characterised by abstinence-based, high-threshold services for people who use drugs. The use of illicit drugs is highly criminalised, with harsh sentencing resulting in large numbers of people who use drugs in Caribbean prisons. Despite the evidence that drug use is playing a role in HIV epidemics in the Caribbean, national drug and HIV policies remain largely unlinked. However, in the past two years, there have been indications that the need for a harm reduction approach to drugs is increasingly being recognised on some Caribbean islands.

Developments in harm reduction implementation

Harm reduction services

Needle and syringe exchange programmes (NSP) in the region remain limited to Puerto Rico. There are now thirteen NSP sites serving an estimated 29,130 people who inject drugs. The sites are all based in communities around San Juan, the capital city.[2] However, coverage remains inadequate, as it is estimated that there are only 0.4 NSP sites per 1,000 people who inject drugs.[2]

Similarly, Puerto Rico remains the only opioid substitution therapy (OST) provider in the region, with six OST sites (five in the community and one in a prison). In 2007 there were an estimated 5,570 people receiving methadone in Puerto Rico.[2]

Across the region, a small number of drop-in centres for people who use drugs take a harm reduction approach. These programmes exist in Santo Domingo (Dominican Republic), Port of Spain (Trinidad), Kingston (Jamaica) and Vieux Fort and Castries (St Lucia). The Castries programme offers shelter and other services for homeless crack users living with HIV. The shelter also provides adherence support for residents receiving antiretroviral therapy (ART) and advocates for the therapeutic use of cannabis. Although it neither distributes nor provides cannabis, its advocacy is premised on the use of cannabis for residents as a method of combating crack cocaine addiction and the nausea that is often a side effect of ART.[3] At present there are no estimates of the numbers of people who inject or otherwise use drugs receiving ART in the Caribbean.[2]

Universal access reports from Caribbean governments indicate progress towards targets in some areas of the response. However, between 2006 and 2008 no Caribbean countries or territories reported on the availability and coverage of harm reduction programmes for people who inject drugs.[8]

Policy developments for harm reduction

At the regional level there have been several mentions of drug use in HIV strategy documents.[9] [10] However, as yet there has been little translation of this at the national level in either policies or programmes. There has been no official movement within national HIV policies in relation to harm reduction since 2008. While there is clearly strong commitment from policy makers in the region to respond to HIV epidemics, as articulated in national policy and strategy documents, these have not yet included commitments to harm reduction. Similarly, national policies and strategies on drugs are in place for all Caribbean islands, but do not include a harm reduction approach. The exception to this is Trinidad and Tobago's National Anti-Drug Plan for 2008 to 2012, which explicitly includes harm reduction as a key component of the national response to drugs.[11] Recent regional developments also perhaps indicate a shift towards the acceptance of a harm reduction approach by some Caribbean governments.

The awarding of a regional bid from the Global Fund to fight AIDS, Tuberculosis and Malaria signifies an important advance for harm reduction in the Caribbean. The proposed programme includes harm reduction activities in the community, as well as in prisons. Given that country coordinating mechanisms (including government and civil society delegates) must sign off on proposals in order for them to be accepted by the Global Fund, this indicates some level of national support for harm reduction from Caribbean states.

Civil society and advocacy developments for harm reduction

Despite well-documented difficulties experienced by civil society in meaningful involvement in the Commission on Narcotic Drugs,[12 13] St Lucia had one of the few delegations led by a national NGO representative at the 2009 session, in this case the Coordinator of the Caribbean Harm Reduction Coalition (CHRC). Importantly, St Lucia was also the only Caribbean country present that signed on to the 'Interpretive Statement', explicitly stating that it interprets the term 'related support services' in the 2010 Political Declaration and Plan of Action on Drugs to include harm reduction interventions.[14]

The acceptability of harm reduction in the region remains an issue, but it is an approach that is gaining recognition in some countries. An important development took place in February 2009 when the Caribbean Community (CARICOM) secretariat held a two-day workshop on harm reduction in Jamaica.[15] This was the first event of its kind organised by this regional body and represents an open acknowledgement of the need for harm reduction interventions in the region. NGOs were engaged in the event and facilitators included the Chairperson of the CHRC.

In November 2009 the CHRC hosted a two-day Jamaican Drug Policy Conference at the University of the West Indies, Mona Campus in Jamaica. Harm reduction was high on the agenda and delegates agreed on the need to strengthen existing harm reduction interventions and to introduce new ones in the country. Two more national conferences are scheduled for 2010, in St Lucia and Trinidad and Tobago.[3]

Multilaterals and donors: Developments for harm reduction

In late 2009 a Caribbean regional proposal to the Global Fund was approved, signifying a major advance for harm reduction in the region. The five-year grant includes US$1.2 million for HIV prevention, treatment and care among drug users and prisoners. The Pan American Health Organization (WHO/PAHO) is a partner within the programme and has committed to supporting harm reduction projects. The proposal contained significant contributions from the CHRC on the drug use and prison components of the programme. It contained strong harm reduction language and included planned activities such as street-based work and drop-in centres.[16 3]

WHO/PAHO has recently commissioned two important reports for harm reduction in the region. The first is on the state of harm reduction in the Americas and will feature a section on the Caribbean authored by the Coordinator of the CHRC. The second, commissioned by the WHO/PAHO Caribbean office, explores access to health care services for drug users and was also researched and authored by the CHRC Coordinator. Two regional consultations have been held to use the reports' findings to plan interventions in the region.[3]

The US President's Emergency Program for AIDS Relief (PEPFAR) has been a significant funder of HIV programmes in the region. A new five-year collaborative strategic framework between the US and the Caribbean is being finalised. The framework is to support the implementation of Caribbean regional and national action plans on HIV/AIDS.[17] With the recent changes to PEPFAR funding restrictions, this partnership could provide another mechanism through which financial and technical support for harm reduction is available. However, the extent to which PEPFAR funds will support harm reduction programmes remains to be seen.

Although there are a number of multilateral agencies with a presence in the Caribbean,[e] until recently only the UNESCO secretariat was supporting harm reduction projects in the region. A total of US$195,000 was allocated to funding local partners working on harm reduction in Barbados, the Dominican Republic and Trinidad and Tobago. In addition, a series of national consultations were planned and undertaken by the agency with the aim of increasing awareness of harm reduction in Barbados, Jamaica and Trinidad and Tobago.[6] This project has now ended.

As stated above, WHO, through its PAHO Offices in Trinidad and Washington, has recently taken up advocacy for harm reduction in the Caribbean region. PAHO is actively fundraising for the implementation of recommendations from the two reports commissioned in 2009 (described earlier).

UNODC, the UN's lead agency on drug use, remains the only multilateral agency that does not have a presence in the region. With the closure of the Barbados office in 2005, the nearest UNODC representative is in Mexico City. In practice, this means that there is no agency present to provide technical assistance on the issue of HIV transmission and drug use, an area highlighted in the Caribbean strategic plan on HIV and AIDS.[10] This lack of a regional presence has created a vacuum at the multilateral level, which is being filled in an inconsistent manner. For example, some issues around HIV within prisons are currently being covered within the remit of UNAIDS, while the overlap between sex work and drug use is largely overlooked as the UN Population Fund primarily focuses on non-drug-using sex workers in the region. Civil society advocates have been requesting a stronger UNODC presence in the region through the UNODC HIV programme in Vienna.[3]

e UNAIDS, WHO/PAHO, UNESCO, World Bank, UNICEF, UNDP, WFP, UNFPA, ILO, Global Fund.

References

1. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
2. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28.
3. Caribbean Harm Reduction Coalition (2007) Global state of harm reduction data collection response.
4. Aceijas C et al. (2006) Estimates of injecting drug users at the national and local level in developing and transitional countries, and gender and age distribution. *Sexually Transmitted Infections* 82: 10–17.
5. Centers for Disease Control and Prevention (CDC) (2009) *HIV/AIDS Surveillance Report, 2007. Volume 19*. Atlanta, GA: CDC.
6. Cook C and Kanaef N (2008) *Global State of Harm Reduction: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
7. See, for example, Gomez PM et al. (2002) Epidemic crack cocaine use linked with epidemics of genital ulcer disease and heterosexual HIV infection in the Bahamas. *Sexually Transmitted Diseases* 29: 259–64.
8. WHO (2009) *Towards Universal Access: Scaling Up Priority HIV/AIDS Interventions in the Health Sector. Progress Report 2009*. Geneva: WHO: 34.
9. Caribbean Regional Strategic Framework for HIV/AIDS 2002–2006.
10. Draft Caribbean Regional Strategic Framework for HIV/AIDS 2008–2012.
11. *National Anti-Drug Plan of the Republic of Trinidad & Tobago 2008–2012*: www.nationalsecurity.gov.tt/LinkClick.aspx?fileticket=S8wkh6m%2bRzM%3d&tabid=229 (last accessed 8 March 2010).
12. Cook C (2009) *Civil Society: The Silenced Partners. Civil Society Engagement with the UN Commission on Narcotic Drugs*. London: IHRA.
13. Cook C (2009) *Through a Harm Reduction Lens: Civil Society Engagement in Multilateral Decision-Making*. London: IHRA.
14. Economic and Social Council Official Records (2009) Supplement No. 8 UN Commission on Narcotic Drugs Report on the fifty-second session (14 March 2008 and 11–20 March 2009): 119: http://daccess-dds-ny.un.org/doc/UNDOC/GEN/V09/825/56/PDF/V0982556.pdf?OpenElement (last accessed 9 March 2010).
15. CARICOM Secretariat (2009) EU commends CARICOM drug demand reduction initiatives. http://www.caricom.org/jsp/pressreleases/pres248_09.jsp (date of last access 22 March 2010)
16. Global Fund to Fight AIDS, Tuberculosis and Malaria. Grants Overview. http://www.theglobalfund.org/programs/country/?lang=en&CountryId=MAC (date of last access 22 March 2010)
17. Draft United States and Caribbean regional partnership framework. A five-year collaborative strategic framework 2009–2014 to support implementation of Caribbean regional and national efforts to combat HIV and AIDS under the Caribbean regional strategic framework for HIV/AIDS 2008–2012 and PEPFAR.

2.5 Regional Update: Latin America

Map 2.5.1: Availability of needle and syringe exchange programmes (NSP) and opioid substitution therapy (OST)

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known

Table 2.5.1: Harm reduction in Latin America

Country/territory with reported injecting drug use[a]	People who inject drugs[1]	Adult HIV prevalence amongst people who inject drugs[1]	Harm reduction response[2]	
			NSP[b]	OST[c]
Argentina	65,829	49.7%	✓(25)	x
Bolivia	nk	nk	x	x
Brazil	540,500[3]	48%	✓(150–450)	x
Chile	42,176	nk	x	x
Colombia	nk	1%[c]	x	✓(4)
Costa Rica	nk	nk	x	x
Ecuador	nk	nk	x	x
El Salvador	nk	nk	x	x
Guatemala	nk	nk	x	x
Honduras	nk	nk	x	x
Mexico	nk	3%	✓(19)	✓(21–25) (M)
Nicaragua	nk	6%	x	x
Panama	nk	nk	x	x
Paraguay	nk	9.35%	✓(3)	x
Peru	nk	13%[d]	x	x
Uruguay	nk	nk	✓	x
Venezuela	nk	nk	x	x

nk = not known

a. The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers.
b. The number in brackets represents the number of operational OST programmes, including publicly and privately funded clinics and pharmacy dispensing programmes. (M) = methadone.
c. UN Reference Group estimate from 1999 data.
d. UN Reference Group figure: 1994–1995.

Harm Reduction in Latin America

HIV predominantly affects marginalised populations in Latin America, including people who use drugs. Cocaine and its derivatives are the most commonly injected drugs in this region, with the exception of Northern Mexico and parts of Colombia, where heroin is more widely used. The Reference Group to the United Nations on HIV and Injecting Drug Use estimates that there are over two million people who inject drugs in Latin America, and that over one-quarter (580,500) are living with HIV.[1] Research suggests that Brazil and Argentina, in particular, have very high HIV prevalence rates within injecting populations.[1] There is also evidence of elevated prevalence rates of HIV and other sexually transmitted infections (STIs) among non-injecting drug users in the region.[4] However, a scarcity of reliable data means it is difficult to establish a true picture of drug-related HIV epidemics.

Government support for harm reduction has not increased significantly since 2008. However, one important development to note is Colombia's adoption of opioid substitution therapy (OST) and the explicit inclusion of harm reduction within its national policies. As in 2008, the vast majority of needle and syringe programmes (NSPs) operate in Brazil and Argentina, although there are some small projects in other countries. Mexico and Colombia, with substantially more heroin users than other Latin American countries, are the only states that prescribe OST, although coverage remains low. The development of harm reduction interventions for cocaine and its derivatives remains nascent. While community-based harm reduction programmes may be responding to non-injecting drug use, experiences have not yet been widely documented or disseminated. A lack of government support and an over-reliance on international funding remain barriers to introducing and/or scaling up harm reduction services in several countries.

While some Latin American governments continue to implement extensive, often problematic and ineffectual drug supply control measures, there have also been some positive drug policy developments in the region. Latin America has been at the forefront of a growing global movement to decriminalise drug use. Civil society advocacy in several countries has been instrumental in bringing about these changes. However, no country has followed up these reforms with an increase in harm reduction services in the region and non-governmental organisations (NGOs) continue to be the primary service providers, often with funding difficulties.

The Global Fund to Fight AIDS, Tuberculosis and Malaria will soon begin supporting new HIV programmes with a focus on people who use drugs in Paraguay and Mexico. In addition, agencies such as the World Health Organization's Pan American Health Organization (PAHO) have increased their involvement and support of harm reduction in the region. However, much more work must be done to ensure greater access to harm reduction services for people who use drugs.

Developments in harm reduction implementation

Needle and syringe exchange programmes (NSPs)

As in 2008, despite injecting drug use being reported in all countries of the region, only five Latin American countries implement NSPs. Brazil, the country with the highest (available) estimate of the number of people injecting drugs (540,000), has the most NSP sites (150–450).[2] The number of sites may have increased in Brazil (it was reported that there were 93 NSP sites in 2008), but the number has not changed in Argentina and has only increased slightly in Mexico.[5] While there may be more NSPs in Brazil, the Brazilian NGO Psicotropicus reports that harm reduction services in general have decreased during this period; funding difficulties due to a decline in international donor contributions and the decentralisation of financing for state-implemented harm reduction programmes are cited as the main cause.[6]

Estimates of NSP coverage are very limited for the region, but, where available, indicate extremely low coverage, with Brazilian injectors receiving the equivalent of less than one needle/syringe per year. There is a need for further research and programme monitoring in countries implementing NSPs in order to determine coverage levels. Twelve Latin American countries with reported injecting drug use have no NSP sites.

There are reports of significant advances in the implementation of harm reduction activities targeting people who inject drugs in Paraguay, funded by a Global Fund grant.[7] Conversely, the last two years are reported to have seen no significant changes for harm reduction in Uruguay, Argentina and Chile.[6] Across the region, epidemics are concentrated within key populations, but 'only a small fraction of HIV prevention spending in the region supports prevention programmes specifically focused on these populations'.[8]

Opioid substitution therapy (OST)

Although opioid use is low in the region, Colombia and Mexico are home to significant numbers of people who use heroin. In response, both countries have implemented OST programmes. There is no up-to-date information available on Mexican OST implementation; in 2008 it was estimated that there were 21 to 25 sites and 3,644 people receiving methadone.[4] OST was introduced in Colombia in 2008 and there are now four operational sites[1] providing methadone maintenance treatment in three districts.[5] More research is necessary to determine the coverage within each country.

Antiretroviral therapy (ART)

Brazil is the only country for which there is an estimate of how many injecting drug users are living with HIV and receiving ART. While past estimates have been much higher, the UN Reference Group found only 2,974 such persons, equating to between 1 and 4 of every hundred injecting drug users living with HIV in Brazil.[2]

Policy developments for harm reduction

At least six Latin American countries – Argentina, Brazil, Colombia, Mexico, Paraguay and Uruguay – include harm reduction within their domestic HIV and/or drug policies. Colombia is the latest addition to this list, with the introduction in 2007 of its new social inclusion model for drug users, implemented by the Ministry of Social Protection.[9] In Central America, 'harm reduction is still pending'.[10] Guatemala is one of the few countries in the sub-region with a national policy that refers to drug use and the sharing of syringes as an HIV risk behaviour, stating the intention to provide STI/HIV prevention information to vulnerable populations. However, it is reported that efforts to reach vulnerable populations with these interventions have not yet been successful.[5] In Nicaragua, the national HIV/AIDS plan for 2006 to 2010 includes drug users in the list of populations most at risk of HIV transmission. However, national plans or strategies in Costa Rica, El Salvador and Panama do not yet include people who use drugs as a most-at-risk population for HIV.[5]

Colombia: Harm reduction and wider drug policy

Colombia's new social inclusion model policy articulates an increased public health emphasis in responding to drug use in the country.[9] Harm reduction now features, along with network participation, community mobilisation, peer involvement and a strong emphasis on reducing stigma and discrimination for people who use drugs. In practice, as well as four OST sites, the government funds fifteen community-based drop-in centres in eleven of the thirty-two Colombian districts.[11] Despite this, and moves toward the decriminalisation of drug use in neighbouring countries, a constitutional amendment recriminalising drug possession for personal use was approved by the Colombian Congress in 2009. Since a ruling in Colombia's Constitutional Court in 1994, adults found with up to 20g of cannabis and 1g of cocaine had not been prosecuted, so this amendment increases the prohibition of drug use in the country.[6]

In most Latin American countries, and particularly in Central America, drug policies, strategies and plans remain overwhelmingly focused on reducing supply and combating trafficking. Responses to drugs are largely determined by security and justice ministries, rather than ministries of health.[6] As a result, drug use and trafficking are often treated as equally serious offences; see, for example, El Salvador's national anti-drug plan for 2002 to 2008.[12] Under pressure from the US government, many countries employ crop eradication methods (involving aerial spraying and military activities on the ground) and huge operations to interdict trafficked drugs. For example, Plan Merida was a multi-country project to reduce drug supply and trafficking, articulated by the Bush US administration and signed up to by the governments of Mexico, Dominican Republic, Haiti and several Central American countries.[13]

It is important to note, however, that some of the most interesting developments in global drug policy in the past few years have been in Latin America. In particular, Argentina, Bolivia, Mexico, Brazil and Ecuador have exhibited a new openness in drug policy deliberations and, importantly, some countries have amended drug laws to decrease criminal charges for drugs or decriminalise personal drug use altogether.

Drug policy developments in Latin America

Argentina: On 25 August 2009 the Argentinian Supreme Court voted unanimously in favour of decriminalising personal consumption of illicit drugs, declaring it unconstitutional to punish a person for possessing or using illegal drugs if it does not endanger others. Although the court order specifically refers to cannabis, it opened the door to judicial reform of national drug laws. In 2010 the Scientific Advisory Committee of the Ministry of Justice published a key report on drug users and policies to address drug use. Also, the National Commission on Drug Policy was created and is tasked with launching the national drug plan for 2010 to 2015 and exploring possible law reform.[6]

Ecuador: In an effort to increase proportionality of punishment, the government approved an amnesty for small-scale drug traffickers in 2008. Harsh sentences of between twelve and twenty-five years were previously given for this kind of offence. As a result, approximately 1,500 people detained for crimes related to small-scale drug trafficking were released from prison in 2008 and 2009. There are also indications that decriminalisation of drug use and harm reduction may soon form part of the national response to drugs.[14] [15]

Mexico: On 21 August 2009 a new drug law, proposed by President Felipe Calderón in response to increasing violence, organised crime and drug use, came into effect. The law distinguishes *narcomenudeo* (drug dealers) from drug users. In effect, it decriminalises people who use drugs and preserves the right of indigenous people to the traditional use of certain substances. However, the Transnational Institute warns that the law was not reformed to protect the rights of people who use drugs and has several negative consequences, including a toughening of sentences for *narcomenudeo*, many of whom are from poor communities.[16]

Brazil: A new drug law in 2006 differentiated between drug possession for personal use and drug trafficking. The law offered alternatives to incarceration for drug possession for personal use, namely drug treatment. Four years on, critics argue that the law has had little effect in distinguishing between consumers and dealers, as it contained no specific guidance on drug amounts.[6]

Some Latin American governments have supported harm reduction and drug policy reform in international fora. During the 51st Session of the Commission on Narcotic Drugs (CND), held in Vienna in March 2008, Uruguay tabled the resolution 'Ensuring the proper integration of the United Nations human rights system with international drug control policy', which called for respect for fundamental human rights and equal access to social and health care services for people who use drugs. The resolution was co-

sponsored by Uruguay, Argentina and Switzerland, while Italy, the UK, Finland, Germany and other EU states played leading roles in defending it during CND negotiations.[17]

In 2009, in advance of the High-Level Segment of CND, Bolivian President Evo Morales sent a formal letter to UN Secretary General Ban Ki-moon calling for the abolition of two sub-articles of the 1961 Single Convention on Narcotic Drugs that specifically prohibit the chewing of coca leaf.[18] However, this does not indicate a movement away from Bolivia's punitive drug laws, which remain repressive towards both drug use and trafficking.

Civil society and advocacy developments for harm reduction

Civil society organisations have been active in advocating for harm reduction and drug policy reform at the regional level in the past two years. For example, the first Latin American Conference and the VII National Conference on Drug Policy, held in Argentina in August 2009, was a key event, bringing together 650 participants from civil society, policy makers and media to raise awareness of the need for a public health approach to drugs.[e] A meeting entitled 'Drugs, youth, violence and gangs: An alternative view', held in El Salvador in October 2008, also mobilised civil society organisations, particularly those in the RAISSS network.[f] The meeting culminated in RAISSS members developing and signing up to a statement calling for action on harm reduction by the UN, governments, international organisations and civil society.[19]

The formation of the Latin American Commission on Drugs and Democracy has been a significant regional development. Comprising seventeen drug policy campaigners, including former presidents of Brazil, Colombia and Mexico, the commission has made important contributions to the debate through its assessments of the limitations and negative consequences of repressive drug policy in the region, and has called for a more efficient and humane response to drug use.[20]

Continuing to providing a space for drug policy debate in the region, the Transnational Institute and the Washington Office on Latin America have organised informal dialogues on drug policy in Uruguay, Mexico, Ecuador, Bolivia, Brazil and Argentina since 2007.

At the national level, civil society organisations play a key role in advocating for changes to drug laws and increases in harm reduction service provision. They participate in key fora such as the Brazilian seminar on drugs, harm reduction, legislation and intersectorality hosted by the Commission on Human Rights and Minorities of the Chamber of Deputies in October 2009. They also organise national events such as the Chilean Harm Reduction Network's seminar entitled 'Towards a new drug policy for the bicentenary citizenship', which brought together the existing government and potential candidates for the next presidency to review current policies and to discuss possible changes in national strategies to address drug and alcohol use.

Procrear Foundation, a Colombian NGO, worked with UNESCO to carry out a national consultation on harm reduction and education in 2008.[21] Following the recriminalisation of the possession of drugs for personal use in Colombia, civil society organisations such as Dosis de Personalidad and La Res were mobilised to advocate against repressive policy towards drug users.[6]

Civil society advocacy for harm reduction and the involvement of drug users remains weakest in Central America, although some NGOs cover these issues in their work. For example, in 2009 Nimehuatzin Foundation, a Nicaraguan NGO, published a study on HIV and drug use in two Nicaraguan cities, Managua and Chinandega, and called for further action on drug-related HIV epidemics, which currently gain little attention in Central American countries.[6]

Multilaterals and donors: Developments for harm reduction

Multilateral agencies and international donors have supported several initiatives on harm reduction in Latin America in recent years. For example, in November 2009 the PAHO, UNICEF and UNAIDS included an analysis of the HIV epidemic among people who use drugs in a report on the challenges posed by the HIV epidemic in Latin America and Caribbean 2009.[22] WHO specifically called for an increase in harm reduction in the region at the Inter-American Drug Abuse Control Commission (CICAD) meeting in Miami in November 2009.[23] To assist this scale-up, the agency is adapting the target-setting guide for people who inject drugs in the Latin American and Caribbean region.[24] As the association between HIV transmission and non-injecting drug use in the region is being increasingly reported, it will be important to provide guidance for implementers on developing interventions that specifically aim to prevent HIV for those drug users who do not inject. Researchers and NGOs within the region call for an urgent expansion of access to HIV testing and prevention for crack cocaine users in particular.[25]

As previously mentioned, UNESCO and Procrear Foundation carried out the Colombian national consultation on harm reduction and education in September 2008. This consultation had the support of Caritas Germany, the EU, UNODC, UNAIDS and WHO. The five main topics covered were education, harm reduction, human rights and social inclusion, public policy and management, and stigma and discrimination.[20]

The Global Drug Policy Program of the Open Society Institute has supported civil society engagement in regional and international fora, including the International Drug Policy Reform Conference in Albuquerque and the first Latin American Conference on Drug Policies. The Dutch and British governments funded a side event at the Latin American conference, which brought together civil society organisations and government officials of countries in the region.

In November 2009 the Global Fund Board signed new agreements with Paraguay and Mexico to fund HIV programmes with a focus on people who inject drugs and/or on harm reduction. The Paraguayan programme aims to prevent HIV and STI transmission among vulnerable populations, including people who inject drugs, in six regions.[26] The Mexican programme aims to strengthen HIV prevention and harm reduction for men who have

e The second Latin American Conference on Drug Policy will be held in Rio de Janeiro, Brazil in 2010 and will be jointly organised by Intercambios Civil Association and Psicotropicus.

f RAISSS is a network of institutions involved in situations of 'social suffering' and includes many community-based organisations responding to drug use and involved in harm reduction. It comprises organisations from countries such as Brazil, Chile, Haiti, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Bolivia, Mexico and Colombia.

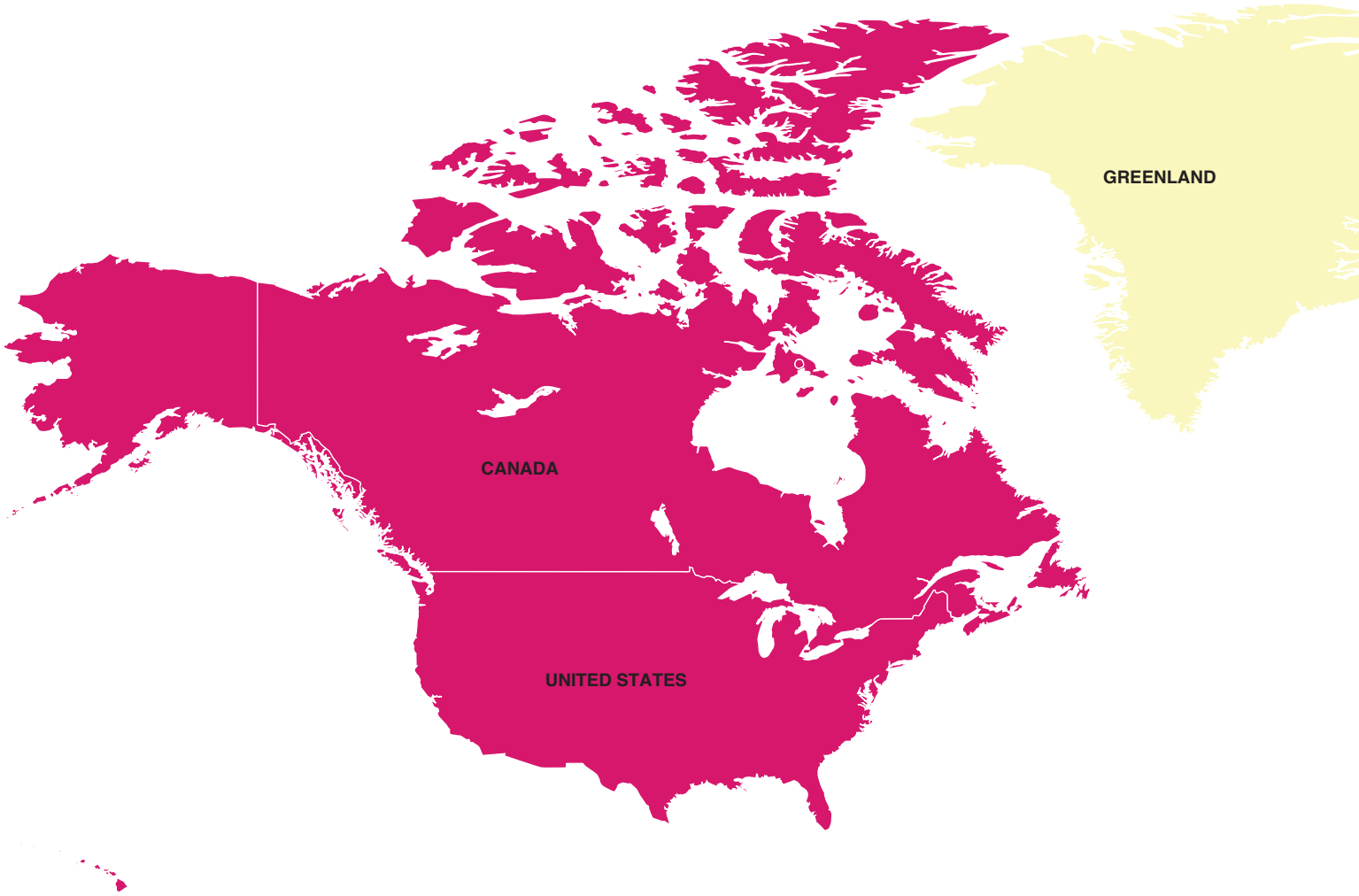
sex with men and for people who inject drugs, to reduce stigma and discrimination (including homophobia) and to strengthen community and government systems within the HIV response.[27]

In Argentina, however, where a Global Fund grant has recently come to an end, there has been some stagnation and even a lessening of harm reduction activities due to the lack of availability of alternative funds.[6] Government support is essential to sustain harm reduction programmes, particularly in the current international financial crisis. Despite many welcome developments, such as the increased focus on harm reduction in Latin America of some international donors and multilateral agencies, more must be done to ensure that it is an integral part of responding to drugs and HIV in the region.

References

1. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
2. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28.
3. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28. Country Report.
4. See, for example, Rossi D et al. (2008) Multiple infections and associated risk factors among non-injecting cocaine users in Argentina. *Cadernos de Saúde Pública* 24(5): 965–74.
5. Cook C and Kanaef N (2008) *Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
6. Intercambios Civil Association (2010) Global state of harm reduction information response.
7. Marcelo Vila, sub-regional coordinator for HIV/STI for the Southern Cone of PAHO, consulted by Intercambios Civil Association (2010) op. cit.
8. UNAIDS (2009) *AIDS Epidemic Update*. Geneva: UNAIDS, p. 56.
9. http://fundacionprocrear.org/index.php?option=com_content&task=view&id=95&Itemid=77 (last accessed 22 March 2010).
10. Pascual Ortells, Nimehuatzin Foundation, consulted by Intercambios Civil Association (2010) op. cit.
11. Inés Elvira Mejía Motta, consulted by Intercambios Civil Association (2010) op. cit.
12. Comisión Salvadoreña Antidrogas (2002) *Plan Nacional Antidrogas* 2002–2008: www.seguridad.gob.sv/observatorio/pnad/pnad.pdf (last accessed 10 March 2010).
13. Personal e-mail communication with Pascual Ortells, Nimehuatzin Foundation, Nicaragua, 2 August 2010; and www.radiolaprimerisima.com/noticias/resumen/31023 (last accessed 19 March 2010).
14. *Constitución del Ecuador*: www.asambleanacional.gov.ec/documentos/constitucion_de_bolsillo.pdf (last accessed 18 January 2010).
15. Transnational Institute (2010) Drug law reform in Ecuador: www.tni.org/article/drug-law-reform-ecuador (last accessed 18 March 2010).
16. Hernández Tinajero J and Angles CZ (2009) *Mexico: The Law Against Small-Scale Drug Dealing. A Doubtful Venture*. Legislative Reform of Drug Policies 3. Washington, DC: Transnational Institute, Washington Office on Latin America.
17. IHRA blog (2008) The life of a human rights resolution at the Commission on Narcotic Drugs: www.ihrablog.net/2008/04/life-of-human-rights-resolution-at-un.html (last accessed 18 March 2010).
18. Transnational Institute (2009) Letter to the UN Secretary General: www.ungassondrugs.org/index.php?option=com_content&task=view&id=262&Itemid=84 (last accessed 18 March 2010).
19. RAISSS (2010) Declaración de Ayagualo. *Boletín RAISSS* 1: www.iglesia.cl/proyectos/raisss/anteriores/2009-1/5.html (last accessed 10 February 2010).
20. Latin American Commission on Drugs and Democracy (2009) Drugs and democracy: Toward a paradigm shift. Statement by the Latin American Commission on Drugs and Democracy.
21. UNESCO (2008) Consulta nacional sobre reducción de daños y educaciónen situaciones asociadas el consumo de drogas y VIH/SIDA en Colombia: www.unesco.org/ulis/cgi-bin/ulis.pl?catno=186624&set=4B57360B_1_186&gp=0&lin=1&ll=f (last accessed 12 March 2010).
22. ONUSIDA, OPS, UNICEF (2009) *Retos planteados por la epidemia del VIH en América Latina y el Caribe*. Washington, DC: PAHO.
23. OPS (2009) Pronunciamiento de la OPS. 46 período ordinario de sesiones: www.cicad.oas.org/apps/Document.aspx?Id=945 (last accessed 18 March 2010).
24. WHO, UNODC, UNAIDS (2009) *Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users*. Geneva: WHO.
25. For example, see Dickson-Gomez J et al. (2010) Resources and obstacles to developing and implementing a structural intervention to prevent HIV in San Salvador, El Salvador. *Social Science & Medicine* 70(3): 351–9.
26. Global Fund to Fight AIDS, Tuberculosis and Malaria (2010) Grant Number: PRY-607-G02-H: www.theglobalfund.org/grantdocuments/6PRYH_1400_545_gsc.pdf (last accessed 22 March 2010).
27. Centro Nacional para la Prevención y el Control del VIH/SIDA Dirección General (2010) Comunicado de prensa: El Fondo Mundial otorgará financiamiento a México para fortalecer la lucha contra el VIH/SIDA: www.censida.salud.gob.mx/descargas/boletin_prensa_si_fondo_mundial.pdf (last accessed 15 February 2010).

2.6 Regional Update: North America



Map 2.6.1: Availability of needle and syringe programmes (NSP) and opioid substitution therapy (OST)

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known

Table 2.6.1: Harm reduction in North America

Country/territory with reported injecting drug use[a]	People who inject drugs[1]	Adult HIV prevalence amongst people who inject drugs[1]	Harm reduction response[2]		
			NSP[b]	OST[c]	DCR[d]
Canada	286,987	13.4%	✓(>775) (P) (SN)[e]	✓(B,M)	✓
United States	1,294,929	15.57%	✓(186) (P)	✓(1433) (B,M)	x

nk = not known

a There are no identified reports of injecting drug use in Greenland.
b The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers. (P) = needles and syringes reported to be available for purchase from pharmacies or other outlets. (SN) = sub-national data.
c The number in brackets represents the number of operational OST programmes, including publicly and privately funded clinics and pharmacy dispensing programmes. (M) = methadone and (B) = buprenorphine.
d Drug consumption room.
e This figure represents the number of sites in two Canadian provinces: British Columbia and Quebec. The number of sites in other provinces is not known.

Harm Reduction in North America

Canada and the United States are home to more than one-tenth of all people who inject drugs worldwide. UNAIDS recently stated that the role of injecting drug use in the North American HIV/AIDS epidemic had 'declined dramatically over the course of the epidemic'.[3] However, the US, after China and Russia, continues to have one of the highest estimated populations of people who inject drugs globally.[1] And, according to a 2008 systematic review for the Reference Group to the United Nations on HIV/AIDS and Injecting Drug Use, over 10% of people who inject drugs in the US and Canada are living with HIV.[1] In both countries, ethnic minorities and indigenous populations are particularly affected by drug-related harms such as HIV and hepatitis C, as well as by punitive drug law enforcement.

The US and Canada have key harm reduction programmes in place and support harm reduction in some aspects of national policy. However, service provision in both countries is inconsistent and influenced by local policies, many of which have historically favoured law enforcement and abstinence-only approaches to drugs. Coverage of needle and syringe programmes (NSPs) and opioid substitution therapy (OST) for people who inject drugs in North America is much lower than in Australasia and most Western European countries. Since 2008 NSP service provision has fallen in the US.[4] Harm reduction coverage in Canada remains difficult to ascertain due to a lack of national-level systematic data collection and surveillance mechanisms.[2]

Major positive developments at the policy level have taken place in the US, particularly the reversal in late 2009 of the long-standing ban on federal funding of syringe exchange. Although the US announced its policy support for syringe exchange domestically and internationally,[5] the impact of this on NSP service provision in the US and elsewhere is yet to be seen.

In Canada, a law enforcement approach to illicit drugs has predominated since 2008 at the expense of evidence-based health policy. Recent developments include the introduction of mandatory minimum sentencing for drug offences and continued legal challenges to Insite (the region's only safer injecting facility) by the Conservative federal government. In 2010 the British Colombia Court of Appeal dismissed an appeal by the federal government of a previous lower court decision supporting Insite, ultimately enabling the continued operation of the facility.

Developments in harm reduction implementation

Needle and syringe exchange programmes (NSPs)

A lack of national data collection on NSPs in Canada makes it difficult to establish whether service coverage has increased in recent years. According to the most recent available data from the Canadian HIV/AIDS Legal Network and the National Institute of Public Health, a total of 775 NSP sites operate in the provinces of British Columbia and Quebec.[6] [7]

Several barriers to NSP access have been reported, including strict drug and paraphernalia laws leading to a fear of arrest, distance from service, limited opening hours, limits on the injecting equipment provided per visit and concerns over confidentiality. It has also been reported that NSP staff are sometimes reluctant to provide young people (under eighteens) with injecting equipment.[8]

Civil society reports since 2008 indicate that as many as 10% of the NSPs in the US have closed or drastically reduced services as a result of state budget cuts.[4] In 2009 the North American Syringe Exchange Network was aware of 186 NSPs operating in the US.[9] The UN Reference Group estimate that there are only 0.1 NSP sites per 1,000 people who inject drugs in the US.[2] Although this does not provide a true measure of coverage, it is interesting to note that the only other country with such a low estimate of existing services is Thailand, where NSPs are NGO-led and have no government support. It is yet to be seen how the recent lifting of the federal funding ban on needle and syringe exchange in the US will affect NSP coverage.

NSP coverage across North America averages twenty-three syringes distributed per person injecting drugs per year, significantly lower than that of Western Europe (fifty-nine syringes) and Australasia (202 syringes).[2]

There is a need for culturally appropriate and accessible programmes for ethnic minorities who inject drugs. In the US, 40% of African-American men and 47% of African-American women living with HIV contracted the virus either through injecting or by having sex with someone who does.[10] Data derived from two prospective cohort studies in Vancouver, Canada comparing HIV incidence among Aboriginal and non-Aboriginal people who inject drugs indicated significantly elevated HIV prevalence and HIV incidence among Aboriginal people who inject.[11] Evidence-based and culturally sensitive harm reduction responses must be implemented proactively and in a timely manner to avert the likelihood of public health emergencies among injecting sub-populations at high risk.

The legal dispute over Insite

Since 2008 the legal status of Insite, North America's only safer injecting facility (SIF), has been challenged by the Canadian Conservative government with renewed vigour. In May 2008 a lower court in the province of British Columbia, where Insite is located, prevented the federal government from shutting the facility down.

Responding to this decision, the Canadian HIV/AIDS Legal Network stated on 29 May, 'In exempting Insite users from criminal prosecution for possessing drugs while at the facility, the court recognized that a simplistic approach of criminalizing people with drug addictions contributes to death and disease that could otherwise be prevented, and violates basic human rights protected by the [Canadian] *Charter [of Rights and Freedoms]*.'[12]

The Attorney General of Canada appealed the court's decision. On 15 January 2010 the British Colombia Court of Appeal dismissed this appeal, allowing Insite to continue operating and ruling a portion of Canada's Controlled Drugs and Substances Act unconstitutional in the process.

Safer crack use kit distribution

A significant increase in the use of crack cocaine, particularly among people who inject drugs, has been documented in Canada.[13] Research since 2008 has identified the smoking of crack cocaine as an independent risk factor for HIV infection among people who inject drugs, with female users at increased risk.[14] [15] According to recent epidemiological modelling of crack use trends in the Canadian setting, independent predictors of crack use initiation include frequent cocaine injection, crystal methamphetamine injection, residency in urban areas where drug use prevalence is high and involvement in sex work.[13] Given the multiplicity of factors that contribute to crack use among people who already inject, evidence-based and gender-sensitive interventions are urgently needed to address crack use and its associated harms.[16]

Some distribution of safer crack kits has continued in the US and Canada since 2008, albeit in limited areas and with continued opposition from the International Narcotics Control Board.[17] There is an urgent need to document and evaluate the kits' impact and to broaden support for these programmes.

Opioid substitution therapy (OST)

OST, including methadone and buprenorphine, is offered in 1,433 licensed facilities across the US to 253,475 clients.[2] Despite early leadership in OST provision, access in the US remains geographically inconsistent.[18] OST is available in Canada, but there are no available data on national service coverage. For both countries, developing national data collection systems in all areas of HIV surveillance, including injecting drug use and harm reduction service coverage, should be a public health priority.

A number of barriers remain to optimal OST access across the region. In the US, limited financial resources, a lack of health insurance and mistrust of the treatment system continue to prevent many people from accessing treatment.[4] In Canada, strict regulation of methadone and underfunding of maintenance programmes limits the number of physicians and pharmacies that can provide OST. As a result, OST accessibility varies broadly across provinces, with, for example, Newfoundland and New Brunswick facing large shortages of licensed physicians prescribing OST.[19]

In Canada, the North American Opiate Medication Initiative (NAOMI) published the findings in October 2008 of a three-year randomised controlled trial assessing whether the provision of diacetylmorphine (pharmaceutical heroin) under medical supervision would benefit people with chronic opiate dependencies for whom other treatment options have proved unsuccessful.[20] The study, conducted at two sites in Vancouver and Montreal and involving 251 participants, concluded that heroin assisted therapy (HAT) was significantly more effective than methadone for long-term opioid users for whom other treatments have not worked.[21] In addition, the study found that individuals on HAT were more likely to stay in treatment, decrease their use of illegal drugs and reduce their involvement in illegal activities than patients assigned to receive oral methadone.[21] These findings are consistent with the results of previous European studies[22] [23] [24] and solidify the evidence base for the provision of a range of treatments to opiate users, as well as for the decriminalisation of medically prescribed and regulated narcotic treatments.

Antiretroviral therapy (ART)

UNAIDS report that rates of new infections among people who inject drugs have generally fallen in the past few years in North America.[3] However, the disproportionate risk of death experienced by people who inject drugs due to the associated health risks, such as overdose and infection,[25] may also help to explain the documented decline in HIV prevalence.[3] While accounting for 20.9% of people with diagnosed HIV infection in New York City in 2007, people who inject drugs accounted for 38.1% of all deaths among HIV-diagnosed individuals.[26]

Furthermore, among people who inject drugs, minority populations remain disproportionately affected in terms of HIV prevalence and incidence. For instance, although African-Americans represent 12% of the US population, they accounted for 46% of HIV prevalence in 2008.[27]

The UN Reference Group estimate that 40,334 people who inject drugs in Canada and 308,208 people who inject drugs in the US were living with HIV in 2008.[2] However, there are currently no data on national coverage of ART provision for people who inject drugs in either country.[2]

Approximately 21% of people living with HIV in the US[27] and 27% in Canada[28] are unaware of their HIV status. The US Centers for Disease Control and Prevention estimate that up to 70% of new HIV infections in the US involve people who are unaware of their HIV-positive status.[29] The increased roll-out of harm reduction services, including NSPs and OST, in Canada and the US is essential if further progress in reducing HIV incidence and AIDS-related mortality is to be made. Integrated services that encourage early voluntary HIV counselling and testing for people who inject drugs and their sexual partners are also necessary measures.[3] Uptake of ART among people who inject drugs may be improved through targeted HIV testing and counselling initiatives that encourage the receipt of HIV test results and follow-up.[30]

Policy developments for harm reduction

Major positive developments at the policy level have taken place in the US in the past two years. The ban on federal funding of needle syringe exchange, dating back to 1988, was lifted by Congress in late 2009. In addition, the Office of National Drug Control Policy, under the Obama Administration, has signalled US support for syringe exchange domestically and internationally.

At the 2010 meeting of the UN Commission on Narcotic Drugs, the US's representative expressed government support for harm reduction interventions such as NSP and OST, but not the term itself.[5] Although the US government supports interventions that reduce both drug use and drug-related harm, it appears to exclude heroin prescription and supervised injection facilities. Nevertheless, as one of the countries that has traditionally opposed key harm reduction interventions in the past and as a major international donor to HIV programmes, the US's recent policy shift is an important development with potential positive implications for people who use drugs in the US and around the world.

Also in the US, overdose prevention issues have increasingly been taken up by federal agencies, particularly the Substance Abuse and Mental Health Services Administration (SAMHSA), through new policies, programmes and funding streams. However, policies or programming guidelines on overdose prevention have not yet been formally adopted at the federal level. Overdose prevention programmes dispensing naloxone have increased dramatically since 2008: over 100 such programmes now exist, ranging from small grass-roots projects to health department-supported initiatives (see Chapter 3.6 on overdose).[4]

Since 2006 Canada has experienced a political shift from public-health-oriented drug policies to prohibition-inspired criminal justice initiatives. Canada's 2007 Conservative federal budget contains the National Anti-Drug Strategy, Bill C-26, which introduces mandatory minimum prison sentences for cannabis offences.[31] Stephen Harper's Conservative government has continued the trend towards a law enforcement approach to illicit drugs, at the expense of evidence-based health policies. The legal challenges noted above against Insite during 2008 and 2009, despite numerous positive evaluations of the facility,[32] [33] illustrate this trend.

Civil society and advocacy developments for harm reduction

In the US, the harm reduction and syringe exchange communities, joined by HIV/AIDS advocacy groups, led the campaign to overturn the federal funding ban on syringe exchange, and remain mobilised to ensure appropriate and timely implementation.

The lifting of the ban paves the way for new and increased resources directed at syringe exchange programmes and other harm reduction activities based at these programmes, but no additional federal funding has yet materialised. This is a serious concern, given that the impact of the global financial crisis on state budgets is reported to have resulted in funding cuts to syringe exchange programmes in several US states, along with related harm reduction training and capacity-building activities.[4]

VOCAL-NY Users Union

Originally formed in 1992 as a hepatitis C 'consumer' advocacy committee at a syringe exchange programme in Manhattan, VOCAL-NY (Voices of Community Advocates and Leaders New York) has since partnered with the New York City AIDS Housing Network (NYCAHN) to expand its community organising and reach.

VOCAL-NY's tactics have included marches and rallies targeting the governor and legislature in Albany, lobbying, media outreach and participatory research around the impacts of current national and state laws on syringe sharing and re-use. Additional campaigns sought to lift the funding bans on syringe exchanges, to eliminate mandatory minimum sentences for people convicted of drug offences and to improve the rights of methadone patients.

VOCAL-NY has encountered numerous challenges to the continuation of its activities, including harassment by law enforcement officers, lack of government support for harm reduction programmes until very recently, poor access to health care (through lack of insurance and primary care physicians) and policy barriers to housing and income support.

In Canada, civil society organisations advocating for harm reduction have been heavily engaged in campaigns to ensure the continued operation of Insite, to oppose mandatory minimum sentencing for drug offences[34] [35] and to increase access to harm reduction interventions in prisons.[36] In 2010 leading Canadian non-governmental organisations working on HIV/AIDS, including the Canadian HIV/AIDS Legal Network and the Interagency Coalition on AIDS and Development, joined together in a call for improved government action to address the epidemic both nationally and around the world, highlighting the importance of an evidence-based approach.[37] In 2008, in a consultation commissioned by Health Canada, Canadian civil society organisations called for the government to use its bilateral and multilateral relations to champion the use of harm reduction strategies to address HIV and AIDS among people who use drugs.[38]

Multilaterals and donors: Developments for harm reduction

There are no multilateral programmes or international donors supporting harm reduction in North America.

References

1. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
2. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28.
3. UNAIDS (2009) *AIDS Epidemic Update*. Geneva: UNAIDS.
4. Harm Reduction Coalition (2010) Global state of harm reduction information response.
5. CNDBlog (2010) CND Day 4: USA's plenary statement on drug demand reduction: www.cndblog.org/2010/03/cnd-day-4-usas-plenary-statement-on.html (last accessed 1 April 2010).
6. Canadian HIV/AIDS Legal Network (2005) *Info Sheets on Injection Drug Use and HIV/AIDS*. Toronto: Canadian HIV/AIDS Legal Network.
7. National Institute of Public Health, Ministry of Health and Human Services, Quebec (2009) Official list of centers for access to injection equipment in Quebec (distribution and sales) (unpublished).
8. Klein A (2007) *Sticking Points: Barriers to Access to Needle and Syringe Programs in Canada*. Toronto: Canadian HIV/AIDS Legal Network: http://lib.ohchr.org/HRBodies/UPR/Documents/Session4/CA/CANHIVAIDS_LN_CAN_UPR_S4_2009_anx4_StickingPoints.pdf (last accessed 5 April 2010).
9. Des Jarlais DC et al. (2009) Doing harm reduction better: Syringe exchange in the United States. *Addiction* 104(9): 1441–6.
10. Gerald G and Wright K (2007) *We're the Ones We've Been Waiting for: The State of AIDS in Black America and What We're Doing About It*. Los Angeles, CA: Black AIDS Institute.
11. Wood E et al. (2008) Burden of HIV infection among Aboriginal injection drug users in Vancouver, British Columbia. *American Journal of Public Health* 98(3): 515–19.
12. Canadian HIV/AIDS Legal Network (2008) Insite court decision confirms Canadian drug policy at odds with public health and human rights: www.aidslaw.ca/publications/interfaces/downloadDocumentFile.php?ref=856 (last accessed 1 April 2010).
13. Werb D et al. (2010) Modelling crack cocaine use trends over 10 years in a Canadian setting. *Drug and Alcohol Review* (in press).
14. DeBeck K et al. (2009) Smoking of crack cocaine as a risk factor for HIV infection among people who use injection drugs. *Canadian Medical Association Journal* 181(9): 585–9.
15. Shannon K et al. (2008) HIV and HCV prevalence and gender-specific risk profiles of crack cocaine smokers and dual users of injection drugs. *Substance Use and Misuse* 43(3): 521–34.
16. Malchy L et al. (2008) Documenting practices and perceptions of 'safer' crack use: A Canadian pilot study. *International Journal of Drug Policy* 19(4): 339–41.
17. International Narcotics Control Board (2009) *Annual Report*. New York: UN.
18. Cook C and Kanaef N (2008) *Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
19. Canadian HIV/AIDS Legal Network (2005) *Info Sheets on Injection Drug Use and HIV/AIDS 10: Methadone Maintenance Treatment*. Toronto: Canadian HIV/AIDS Legal Network.
20. North American Opiate Medication Initiative (NAOMI): www.naomistudy.ca (last accessed 5 April 2010).
21. Oviedo-Joekes E et al. (2009) Diacetylmorphine versus methadone for the treatment of opioid addiction. *New England Medical Journal* 361: 777–86.
22. Haasen C et al. (2007) Heroin-assisted treatment for opioid dependence: Randomized controlled trial. *British Journal of Psychiatry* 191: 55–62.
23. van den Brink W et al. (2003) Medical prescription of heroin to treatment resistant heroin addicts: Two randomised controlled trials. *BMJ: British Medical Journal* 327: 310.
24. March JC et al. (2006) Controlled trial of prescribed heroin in the treatment of opioid addiction. *Journal of Substance Abuse Treatment* 31: 203–11.
25. Miller C et al. (2007) Factors associated with premature mortality among young injection drug users in Vancouver. *Harm Reduction Journal* 4: 1.
26. New York City Department of Health and Mental Hygiene (2008) *New York City HIV/AIDS Annual Surveillance Statistics*. New York: New York City Department of Health and Mental Hygiene.
27. Centers for Disease Control and Prevention (2008) HIV prevalence estimates: United States. *MMWR: Morbidity and Mortality Weekly Report* 57(39): 1073–6.
28. Public Health Agency of Canada (2007) *HIV/AIDS Epi Updates, November 2007*. Ottawa: Public Health Agency of Canada.
29. Marks G et al. (2006) Estimating sexual transmission of HIV from persons aware and unaware that they are infected with the virus in the USA. *AIDS* 20(10): 1447–50.
30. Wood E et al. (2006) Impact of HIV testing on uptake of HIV therapy among antiretroviral naive HIV-infected injection drug users. *Drug and Alcohol Review* 25: 451–4.
31. Bill C-26: www2.parl.gc.ca/Content/LOP/LegislativeSummaries/39/2/c26-e.pdf (last accessed 5 April 2010).
32. Tyndall MW et al. (2006) HIV seroprevalence among participants at a medically supervised injection facility in Vancouver, Canada: Implications for prevention, care and treatment. *Harm Reduction Journal* 3: 36.
33. Kerr T et al. (2006) Impact of a medically supervised safer injection facility on community drug use patterns: A before and after study. *BMJ: British Medical Journal* 332: 220–22.
34. Canadian HIV/AIDS Legal Network (2009) *Misleading and Misguided: Mandatory Prison Sentences for Drug Offences*. Brief to the Senate Standing Committee on Legal and Constitutional Affairs regarding Bill C-15, an Act to amend the Controlled Drugs and Substances Act and to make consequential amendments to other Acts. Toronto: Canadian HIV/AIDS Legal Network.
35. Bill C-15 on mandatory minimum sentences: Organizations and experts across the country decry a damaging step in the wrong direction (2009): www.aidslaw.ca/publications/interfaces/downloadFile.php?ref=1521 (last accessed 2 April 2010).
36. Canadian HIV/AIDS Legal Network (2009) News release: New report outlines legal case for prisoners' access to clean needles: www.aidslaw.ca/publications/interfaces/downloadFile.php?ref=1509 (last accessed 2 April 2010).
37. Canadian AIDS Society et al. (2010) Leading together: What we can do to overcome AIDS at home and abroad. A message from leading Canadian organizations: www.aidslaw.ca/publications/interfaces/downloadFile.php?ref=1590 (last accessed 2 April 2010).
38. Canadian HIV/AIDS Legal Network and Interagency Coalition on AIDS and Development (2007) Civil society perspectives on Canada's global engagement on HIV and AIDS: www.aidslaw.ca/publications/interfaces/downloadFile.php?ref=1251 (last accessed 5 April 2010).

2.7 Regional Update: Oceania

Map 2.7.1: Availability of needle and syringe exchange programmes (NSP) and opioid substitution therapy (OST)

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known

Table 2.7.1: Harm Reduction in Oceania

Country/territory with reported injecting drug use	People who inject drugs[1]	Adult HIV prevalence amongst people who inject drugs[1]	Harm reduction response[2]		
			NSP[a]	OST[b]	DCR[c]
Australia	149,591	1.5%	✓(1,372) (P)	✓(2,132) (B,M)	✓
Fiji	nk	nk	x	x	x
New Zealand	20,500	1.6%	✓(199) (P)	✓(B,M)	x
Papua New Guinea	nk	0%	x	x	x
Timor Leste	nk	nk	x	x	x
American Territories: Guam and American Samoa	nk	0%	x	x	x

nk = not known

a The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers.
(P) = needles and syringes reported to be available for purchase from pharmacies or other outlets.
b The number in brackets represents the number of operational OST programmes, including publicly and privately funded clinics and pharmacy dispensing programmes. (M) = methadone and (B) = buprenorphine.
c Drug consumption room.

Harm Reduction in Oceania

Oceania comprises the sub-regions of Australasia (Australia and New Zealand) and the Pacific island states and territories or PICTs (twenty-two countries and territories subdivided into Micronesia, Polynesia and Melanesia). Australasia is home to approximately 170,000 people who inject drugs, 1.5% of whom are estimated to be living with HIV.[1] Data on drug use and HIV prevalence among people who use drugs in the PICTs are largely unavailable, however, a recent unpublished study estimated the number of people who inject drugs in the Pacific region (excluding Tokelau, the Cook Islands and Timor Leste) to be between 14,500 and 25,000.[3]

Australia's early adoption of harm reduction and high coverage of key interventions is often credited for its low HIV prevalence among injecting populations. However, new research highlights increasing prevalence of HIV and of hepatitis C and of needle and syringe re-using and sharing, particularly among indigenous populations, men who have sex with men and people of Asian background.[4] Harm reduction coverage has not increased in the past two years and funding restrictions have resulted in the need for enhanced service provider and civil society efforts to maintain the existing level of service delivery.[5] Furthermore, some challenges to accessing services remain, including a lack of culturally appropriate services, inflexible opening hours, lack of coverage in rural areas and stigma. Australia continues to be the only country in the region, and one of only eight worldwide, to include a safer injecting facility (SIF) in its harm reduction response.

Early implementation of harm reduction in New Zealand is similarly credited with generally low levels of HIV among injecting populations. Developments in harm reduction since 2008 include some increase in the number of needle exchange drop-in centres, as well as the legalisation of pharmaceutically derived cannabis-based therapeutics, which have become available on prescription under robust guidelines.[6]

The main route of HIV transmission across the PICTs is heterosexual sex and as a result preventing HIV transmission related to drug use has not formed part of the response in the sub-region. Recent research estimates that 6.7% of all HIV infections in the PICTs (outside Papua New Guinea) are due to injecting drug use, but most countries report that it is still not a significant concern.[7] There is reported to be a growing trend towards the use of amphetamine-type substances and other stimulants.[7]

In the PICTs, harm reduction services are generally not available. Additional research is needed to ascertain levels and determinants of drug use and its related harms. An initial step is the strengthening of data collection and surveillance mechanisms both regionally and nationally for the purpose of informing funding allocation, policy priorities, programme development and future research.[7]

Developments in harm reduction implementation

Needle and syringe exchange programmes (NSPs)

Across Australia, there are over 1,372 NSP sites operating, including vending machines and those within pharmacies.[2] An additional 2,563 pharmacies provide needles and syringes for sale. Australia has the world's highest rate of needle/syringe distribution with on average 213 syringes distributed per person injecting drugs per year.[2] Despite this, a recent study estimated that less than half of all injecting incidents in Australia involve using a new needle and syringe.[8]

Stigma and discrimination from medical and pharmacy staff, limited working hours and a lack of culturally appropriate services, particularly for drug users from Aboriginal, Torres Strait or Asian backgrounds, continue to limit access in Australia.[5] Other challenges reported by the Australian Injecting and Illicit Drug Users' League (*AIVL*) include site relocations affecting accessibility and limits on the amounts and types of injecting equipment available at NSPs.[5] In addition, there are concerns from civil society organisations that new short-term funding rules for NSPs in Australia may have an impact upon service delivery in the long term.[5]

In New Zealand, there are reported to be 199 NSP sites, mostly based in pharmacies, equating to 9.5 sites per 1,000 people who inject drugs.[2] The New Zealand Drug Foundation reports that the number of dedicated drop-in centres offering NSP services has increased slightly since 2008,[6] however, the average syringe distribution per person who injects drugs per year is 122[2] and therefore does not reach the threshold of 'high coverage' as defined by WHO, UNAIDS and UNODC.[9]

There is no evidence of NSPs operating in any of the PICTs and it is not known whether needles and syringes can be purchased from pharmacies. Where they exist, health interventions targeting drug use are generally situated within mental health services.[7]

The region's only safer injecting facility (SIF) is based in Sydney, Australia and celebrated its tenth anniversary in May 2009.[10]

Opioid substitution therapy (OST)

In Australia, approximately 35,850 individuals are receiving OST from 2,132 sites.[2] The costs associated with OST in Australia remain a barrier to effective service delivery and a reason for dropout.[11] While OST is subsidised in the country, treatment providers require dispensing fees and OST clients pay from AUD 40 to 85 per week, with take-away doses being charged at a higher rate than in-house doses.[5] An emerging issue in the Australian context is the case of ageing people who inject drugs, who may need increased access to alternative pharmacotherapy options such as heroin prescription and pain management.[5]

In 2008 it was reported that between 3,000 and 3,500 persons in New Zealand were receiving OST;[12] there is no updated data on OST coverage available. There have been recent proposals to transfer OST provision from specialist OST sites to primary care settings. The New Zealand Drug Foundation states that the success of this major change to treatment policy will rely on, among other factors, the capacity of primary care providers to manage an increasing number of potentially long-term

clients with ongoing drug and alcohol issues, including other ailments specific and associated to opioid dependence; to ensure continuity of care; and to provide affordable OST services. Most OST and associated health services are currently free to the individual receiving treatment.[6]

OST remains unavailable in the PICTs. Little data are available with respect to treatment options for people who use drugs. Where treatment is offered, it is largely abstinence-based.[7] Fiji and Timor Leste provide detoxification and some form of counselling or psychosocial support for users of illicit and licit substances, including alcohol and cannabis, although the nature, comprehensiveness and reach of such programmes are unknown.[13]

Antiretroviral therapy (ART)

Australasia was recently found to have the second highest regional level of ART coverage among people who inject drugs in the world, behind Western Europe.[2] In Australia, twenty-two in every 100 people who inject drugs and are living with HIV are receiving ART; this is more than five times the estimated worldwide ratio of four in every 100.[2]

Among the PICTs, three countries – Papua New Guinea, Fiji and Timor Leste – provide some level of antiretroviral treatment: from two sites in Timor Leste to fifty-two sites in Papua New Guinea.[14] However, there is no data available on how many people who use drugs are accessing these services.

Policy developments for harm reduction

In Australia, the Labor Party government has remained silent on harm reduction since coming to power in 2007. However, the vast majority of drug policy investment in recent years has been allotted to supply reduction via law enforcement (55%) followed by demand reduction, including drug prevention and treatment (40%), leaving less than 5% to fund harm reduction approaches. Civil society organisations point to the need for national leadership and innovation on harm reduction issues, including the harmonisation of drug control policies with harm reduction, as well as the mainstreaming of human rights-based approaches within national drug policy and the prioritisation of consumer participation in policy making.[5]

In February 2010 the government of New Zealand and the national Law Commission completed a two-year review of the country's thirty-five-year-old Misuse of Drugs Act.[15] Recognising that the focus of the existing Act was largely on controlling drug supply through law enforcement, the government emphasised the need to expand health approaches to drug use, including harm 'minimisation', in order to enhance an effective national response.[15] The closing date for civil society submissions on an Issues Paper, produced as part of the review, is 30 April 2010.[16]

The Pacific Regional Strategy on HIV and Other STIs 2009–2013 and its predecessor, The Pacific Regional Strategy on HIV/AIDS (2004–2008), do not mention illicit or injecting drug use or harm reduction.[17] New research commissioned by the Burnet Institute and the Australian National Council on Drugs reported that drug legislation in the PICTS has generally focused on illicit drug cultivation, trafficking and related offences.[7] A strong law enforcement approach to reduce supply of illicit drugs reinforces an imbalanced response in the region to emerging issues such as the use of amphetamine-type stimulants. This situation is exacerbated by weak health systems and inadequate institutional implementation capacity to sustain programmes. However, there are indications that broader commitment to a public health approach to drug use is emerging across the region.[7] Advocacy and support from WHO's Western Pacific Regional Office, the Secretariat of the Pacific Community and the Pacific Drug and Alcohol Research Network have pushed for the development of national-level alcohol policies, increased research activity in this area and the appointment of advisers to support programme development in the region.[7]

Civil society and advocacy developments for harm reduction

Australia's partnership approach to policy on HIV and injecting drug use has continued to result in the effective representation of civil society partners in national advisory structures. In the second half of 2009, for example, AIVL contributed to the revision of new national strategies on HIV, hepatitis B and C and STIs, including a strategy specific to Aboriginal & Torres Strait Islanders, placing a stronger emphasis on harm reduction and increased peer education support for drug users of culturally and linguistically diverse backgrounds. In May 2010 AIVL is due to launch a new online resource, 'Trackmarks', to document the contribution made by Australian drug user organisations to drug policy in Australia.[5]

Australian Injecting and Illicit Drug Users' League (AIVL)

AIVL is a peer-based Australian organisation that represents the issues and needs at the national level of people who use and inject drugs. Formed in the late 1980s, and formally incorporated in 1992, AIVL now comprises nine networks, regional organisations and programmes across Australia. Activities undertaken by the national body include the development of peer education resources, training and campaigns around injecting drug use and drug policy issues, researching key concerns affecting marginalised groups of drug injectors to inform interventions, disseminating information on hepatitis C and HIV and advocating for policy change by consulting with the media and policy makers on drug-related issues.

A majority of AIVL's funding comes from the Australian government's Department of Health and Ageing. In recent years AIVL has received additional funding from AusAID to build partnerships with peer-based drug user groups in South East Asia. For instance, AIVL contributed to the establishment of the Asian Network of People Who Use Drugs (ANPUD) in 2008 and continues to support ANPUD's ongoing activities through the three-year Regional Partnership Project. In 2010 AIVL, in partnership with the Nossal Institute for Global Health, plans to conduct a five-week Australian study tour for seven peers from Asian drug user organisations.

In New Zealand, the majority of civil society advocacy activity since 2008 has focused on the Misuse of Drugs Act (MODA) review. In February 2009 the New Zealand Drug Foundation, a leading civil society voice in drug policy and harm reduction debates in the country, hosted the International Drug Policy Symposium. The symposium provided an open platform for organisations and community members to address the development of inclusive drug policy and to offer input to the Law Commission's Issues Paper.[6]

There is potential for PICT civil society organisations to support, engage with and enhance their response to substance use issues in the region. The Pacific Regional Rights Resource Team has established a major presence in the region, providing technical assistance and advice on human rights and supporting civil society strengthening.[7] [d] However, a robust civil society coordinating mechanism with substantial resources and technical expertise to support the response across the region is yet to emerge. The Pacific Islands Association of Non-Governmental Organisations, an umbrella organisation composed of NGO representatives from all countries in the region, previously sought to fulfil this role but faces uncertainty as of 2009 due to funding issues.[7]

Multilaterals and donors: Developments for harm reduction

In the PICTs, bilateral funds from Australia and New Zealand remain key sources of financial support.[7] A recent report from the Burnet Institute identified potential for harm reduction interventions to be incorporated into existing assistance initiatives around health systems strengthening and capacity building delivered by New Zealand, WHO, SPC and the World Bank in several countries and territories of the region, including Papua New Guinea, the Solomon Islands, Samoa, Tuvalu, Tonga, Vanuatu and Nauru.[7]

In Australia, civil society organisations involved in drug use and harm reduction programming have experienced a gradual decline in federal government funding commitments. National organisations traditionally funded through multi-year agreements were presented with one-year funding agreements for 2009 and 2010, creating some uncertainty in the sector.[5]

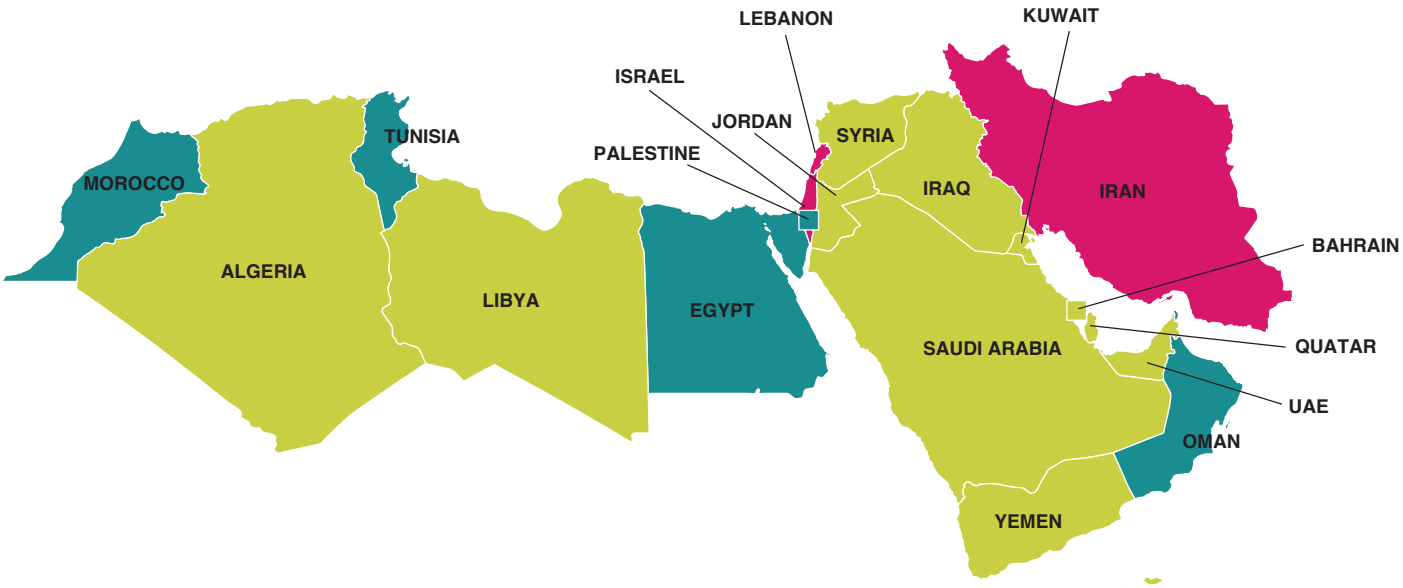
In New Zealand, there have been no significant changes to funding for harm reduction since 2008.[6] However, it is possible that the proposed move to provide OST through primary care settings may have an impact on harm reduction funding in the future.

d Other examples include the Pacific Concerns Resource Centre; the Pacific Network on Globalisation; the Ecumenical Centre for Research, Education and Advocacy; and the Tonga Human Rights and Democracy Movement. However, few of these organisations have specifically focused on drug use.

References

1. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
2. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28.
3. Burnet Institute and Fiji School of Medicine (2009) Investigating the role of drug and alcohol use in the spread of HIV and other sexually transmitted infections in the Pacific (unpublished).
4. National Centre in HIV Epidemiology and Clinical Research (NCHECR) (2009) *HIV/AIDS, Viral Hepatitis and Sexually Transmissible Infections in Australia: Annual Surveillance Report 2009.* Sydney: NCHECR, University of New South Wales.
5. Australian Injecting and Illicit Drug Users' League (AIVL) (2010) Global state of harm reduction information response.
6. New Zealand Drug Foundation (2010) Global state of harm reduction information response.
7. The Burnet Institute (2010) *Situational Analysis of Drug and Alcohol Issues and Responses in the Pacific 2008–09*. Canberra: Australian National Council on Drugs and The Burnet Institute.
8. NCHECR (2009) *Return on Investment 2: Evaluating the Cost-Effectiveness of Needle and Syringe Programs in Australia*. Sydney: NCHECR, University of New South Wales.
9. WHO, UNODC, UNAIDS (2009) Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users. Geneva: WHO.
10. IHRA blog (2009) Ten-year anniversary for Sydney's 'Tolerance Room': www.ihrablog.net/2009/05/ten-year-anniversary-for-sydneys.html (last accessed 1 April 2010).
11. Rowe J (2008) *A Raw Deal? Impact on the Health of Consumers Relative to the Cost of Pharmacotherapy*. Melbourne: The Salvation Army and RMIT University.
12. Cook C and Kanaef N (2008) *Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
13. Devaney M et al. (2006) *Situational Analysis of Illicit Drug Issues and Responses in the Asia-Pacfic Region*. Canberra: Australian National Council on Drugs.
14. WHO (2009) *Towards Universal Access: Scaling Up Priority HIV/AIDS Interventions in the Health Sector. Progress Report 2009*. Geneva: WHO.
15. Australian National Council on Drugs (2010) *Controlling and Regulating Drugs: A Summary of the Law Commission's Issues Paper on the Review of The Misuse of Drugs Act 1975*. Wellington: Law Commission.
16. Law Commission (2010) Review of Misuse of Drugs Act 1975: www.lawcom.govt.nz/ProjectIssuesPaper.aspx?ProjectID=143 (last accessed 1 April 2010).
17. Regional Strategic Reference Group – HIV & STIs (n.d.) *The Pacific Regional Strategy on HIV and Other STIs 2009–2013*: www.unaids.org.fj/attachments/160_PRSIP2009.pdf (last accessed 1 April 2010).

2.8 Regional Update: Middle East and North Africa



Map 2.8.1: Availability of needle and syringe exchange programmes (NSP) and opioid substitution therapy (OST)

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known

Table 2.8.1: Harm Reduction in the Middle East and North Africa

Country/territory with reported injecting drug use[a]	People who inject drugs[1]	Adult HIV prevalence amongst people who inject drugs[1]	Harm reduction response[2]	
			NSP[b]	OST[c]
Algeria	nk	nk	x	x
Bahrain	nk	0.3%	x	x
Egypt	nk	2.55%	✓(2) (P)	x
Iran	180,000	15%	✓(428–637) (P)	✓(680–1,100) (B, M)
Iraq	nk	nk	x (P)	x
Israel	nk	2.94%	✓	✓(B,M)
Jordan	nk	nk	x (P)	x
Kuwait	nk	nk	x	x
Lebanon	nk	nk	✓(1–5) (P)	✓(1) (B)
Libya	1,685	22%	x	x
Morocco	nk	nk	✓(2–3) (P)	x[c]
Oman	nk	11.8%	✓(1)	x
Palestine	nk	nk	✓(1)	x
Qatar	nk	nk	x	x
Saudi Arabia	nk	0.14%	x	x
Syria	nk	0.3%	x (P)	x
Tunisia	nk	nk	✓(6)	x
United Arab Emirates (UAE)	nk	nk	x	nk[d]
Yemen	nk	nk	x (NP)	x

nk = not known

a The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers. (P) = needles and syringes reported to be available for purchase from pharmacies or other outlets and (NP) = needles and syringes not available for purchase; where this is not referred to it is not known.
b The number in brackets represents the number of operational OST programmes, including publicly and privately funded clinics and pharmacy dispensing programmes. (M) = methadone and (B) = buprenorphine.
c Methadone was approved for use in November 2009 and OST pilot sites are due to begin prescribing in June 2010.
d The UN Reference Group reports that there are three NSP sites in the country, but this has been disputed by civil society in the region and so is reported here as not known.

Harm Reduction in the Middle East and North Africa

The marginalised and criminalised populations of men who have sex with men and people who inject drugs remain most affected by HIV in this region. Latest estimates from the Reference Group to the UN on HIV/AIDS and Injecting Drug Use indicate that there are over 300,000 people who inject drugs in the Middle East and North Africa (MENA) region.[1 3] Injecting drug use is driving HIV epidemics in Iran, Bahrain and Libya and contributing to those in several other MENA countries. However, data availability is extremely poor as weak monitoring systems hamper efforts to gain a true picture of the region's drug-related epidemics.

Better surveillance is needed to inform responses in the MENA region. While some monitoring systems have improved in recent years (e.g. in Syria, Morocco and Lebanon), across the region there has been a reluctance to focus on stigmatised and criminalised populations such as people who inject drugs. There is an over-reliance on passive rather than active surveillance, which may result in both injecting drug use and HIV being under-reported.[3] Local and national monitoring systems urgently require strengthening in order to inform targeted responses to drug-related HIV epidemics in the region.[4]

Pilot harm reduction programmes are operating in several MENA countries. Since 2008 Tunisia has introduced pilot needle and syringe programmes (NSPs). Iran remains the only country in the region where access to both NSPs and OST has been dramatically scaled up. Despite positive developments and increases in service provision since 2008, a large proportion of people who inject drugs in the region do not have access to these key interventions.

Some significant recent developments for harm reduction policy and advocacy indicate a growing understanding of the need for action in the region. In October 2009 a resolution from the WHO Regional Committee for the Eastern Mediterranean called for rapid scale-up of harm reduction services to prevent hepatitis B and C epidemics among people who inject drugs. While government action on harm reduction remains slow and perhaps reticent (with the exception of Iran), the engagement of states (via country coordinating mechanisms) in the development of a Round 9 Global Fund proposal with a focus on harm reduction demonstrated an acceptance of the need for an increased response.

Another important development, particularly for civil society, was the first Regional Conference on Harm Reduction, which was held in Lebanon in November 2009. The event provided a vital opportunity for sharing experiences and raising awareness of key issues with policy makers and the media. Despite strong civil society in parts of the region, and some important contributions from the Middle East and North African Harm Reduction Association (MENAHRA), restrictions on the functions of non-governmental organisations in several countries continue to limit the harm reduction response.

Developments in harm reduction implementation

Needle and syringe exchange programmes (NSPs)

Eight MENA countries have operational NSPs. Tunisia became the latest addition when its first pilot NSP was introduced in June 2008, and now has six operational sites. Morocco has increased its service provision and several NSPs are now operating in the northern areas of Tangiers, Tetuan, Nador and Hoceima, through both fixed and mobile units.[5] In these areas, respondent-driven sampling suggest that between 5% and 15% of heroin users are injecting.[5] Lebanon, reported to have very small-scale service provision in 2008, may now have up to six NSPs.[2] The most significant scale-up has occurred in Iran, which reportedly had 170 NSPs in 2008 and now has between 428 and 637 sites.[2 6] However, this still equates to an average of only 2.5 NSP sites per 1,000 people who inject drugs.[2]

Estimates of NSP service coverage are scarce in the region. A lack of information on the numbers of people who inject drugs, as well as poor monitoring of services, impedes coverage calculations in several countries. Iran, which undoubtedly has the highest coverage, distributes an average of only 41 syringes per person per year,[2] much lower than the UN recommended target of 200 syringes per person per year.[7] Services are estimated to reach just 28% of the total number of people who inject drugs in Iran.[2]

Government reports on progress towards universal access targets indicate that distribution per person per year equates to 6.7 syringes in Morocco and less than one syringe in Oman.[8] Information is available on the numbers of people who inject drugs accessing NSPs per year in Lebanon (600–800), Morocco (611, mostly in Tangiers) and Tunisia (680).[2] Reports from Tunisia indicate that 268 clients accessed the service regularly (twice a week or more) and 412 used the service less frequently.[2] Estimates are also available on the number of syringes distributed per year in Lebanon (>2,000), Morocco (44,696), Oman (2,400) and Tunisia (5,924).[2]

Research in the region suggests that people who inject drugs commonly share needles and that the need to scale up access to sterile injecting equipment remains urgent.[4]

Opioid substitution therapy (OST)

Some provision of OST is reported in three MENA countries – Iran, Israel and, to a limited extent, Lebanon.[2] In Morocco, five sites (two residential and three drop-in centres) are due to pilot methadone maintenance therapy (MMT) in June 2010. By April 2010 methadone had been ordered and prescribing guidelines and procedures prepared.[5] While the UN Reference Group reports that three OST sites were operating in UAE, no further details on service provision is available and the existence of sites has been disputed by civil society in the region.[5] Although the number of sites operating in Israel is not clear, it is estimated that between 530 and 570 people receive buprenorphine or methadone as substitution therapy in the state. In Lebanon, there is no legal framework for OST provision, but 112 clients are reported to be receiving buprenorphine as substitution therapy from one centre.[2]

The most extensive OST coverage is in Iran, where the number of sites has increased since 2008 from 654 to between 680 and 1,100 in 2010.[2 6] These are in public and private treatment centres,

as well as drug intervention centres and prisons. Overall, there are estimated to be 4.3 OST sites per 1,000 people who inject drugs in Iran.[2] Data indicate that in one year an estimated 108,000 people received methadone or buprenorphine as substitution therapy in the country; an increase on 2008, when it was reported that in one year 60,000 people received methadone and 6,500 received buprenorphine.[2 6] A crude calculation suggests that for every 100 people in Iran who inject drugs, there are fifty-two people receiving OST.[2] However, particularly in Iran, the significant numbers of opiate smokers (rather than injectors) receiving OST must be taken into consideration when interpreting that figure.

Also in Iran, a comprehensive service for female drug users has been operating in Tehran since 2007. Run by the Iranian National Centre on Addiction Studies (INCAS) and funded by the Drosos Foundation, the service has been providing women with non-judgmental, professional and culturally sensitive harm reduction services; this meets an identified gap as previously most OST and NSP services were tailored to men. In 2009 over 140 women had attended the service and forty-five were receiving MMT.[9]

Antiretroviral therapy (ART)

Estimates of the number of people who inject drugs receiving ART in the region are limited to Iran, where 580 injectors are reported to be accessing HIV treatment.[2] This is a considerable increase on the 125 current or past injectors reported in 2008.[6] Another crude calculation reveals that this is the equivalent of two in every 100 people who inject drugs living with HIV.[2 e] Through a Global Fund programme in Egypt, a total of 371 people were reported to be receiving ART in 2009, but it is not clear whether this includes people who use drugs.[10]

Policy developments for harm reduction

In 2010 Iran, Israel, Lebanon and Morocco include harm reduction as part of their national policies on HIV and drugs. In accordance with Morocco's national harm reduction policy, regulations were amended in 2009 to allow methadone to be prescribed as substitution therapy. Oman has examined the policy and programmatic factors that may be barriers to the introduction of harm reduction measures. Research in drug-using behaviours in Bahrain has been conducted in order to prepare for programme implementation.[11]

At the regional level, Ministries of Health echoed calls made at the 52nd WHO Eastern Mediterranean Region Committee Meeting in 2005, by issuing another resolution in 2009 calling for the rapid scale-up of harm reduction services for people who inject drugs. This time it was specifically in response to growing epidemics of viral hepatitis among this population (see Chapter 3.1 for more on viral hepatitis).[12]

In 2009 MENAHRA, in conjunction with WHO's Eastern Mediterranean Regional Office (EMRO) and the UNODC Middle East and North Africa Regional Office (MENARO), submitted a regional proposal to the Global Fund Round 9, which focused heavily on the introduction and scaling up of harm reduction in the region. While unsuccessful in securing funds, the proposal did gain approval from most country coordinating mechanisms in the region, indicating support (albeit reluctant in some cases) for harm reduction.

e This figure must be interpreted with caution as not every person who injects drugs living with HIV will be in need of ART.

Harm reduction and Islam

Equally as important as government support in some countries, synonymous with it in others, is the endorsement of a harm reduction approach by religious leaders. The rapid scale-up of NSPs and OST (both in the community and in prison settings) in Iran was possible precisely because it was considered to be an essential response within the context of Islam. A recent review investigating harm reduction responses in Islamic countries around the world (including several that have readily adopted it, e.g. Iran, Malaysia and Indonesia) found that it was an approach that 'does not violate shariah law', but instead 'follows Islamic principles' and 'provide[s] a practical solution to a problem that could result in far greater damage to the society at large if left unaddressed'.[13] This important paper explores the basic guidelines in the Quran and the Sunnah (Prophetic traditions) that support NSPs and OST. It concludes that resistance to harm reduction in some Islamic countries (e.g. Libya, Tunisia, Syria and Jordan) is due to ideologies that have so far resulted in responses to drug use that are primarily criminal justice oriented.[13]

Many MENA countries where injecting drug use is reported have not identified injecting drug use as an HIV risk factor in their policy documents or articulated a need for a harm reduction response. Several legal and regulatory barriers, and a general government resistance to change, are significant obstacles to harm reduction implementation. Despite the adoption of a public health approach to drug use in several countries in the region, drug-related offences still result in severe penalties, including the death penalty in the majority of MENA states. [f 14]

Civil society and advocacy developments for harm reduction

Middle Eastern and North African civil society organisations (CSOs) have been actively advocating for harm reduction during the past two years. A major barrier to increasing services in the region has been the lack of awareness and understanding among all stakeholders of the need to address HIV and other health-related harms associated with injecting drug use.[6] Facilitating exchange of ideas and experiences, MENAHRA held the first Regional Conference on Harm Reduction in November 2009 in Beirut, Lebanon. It brought together over 200 policy makers, religious leaders, civil society representatives, frontline workers and researchers to discuss harm reduction for the first time.

MENAHRA was launched in 2007 with technical support from WHO and IHRA and funds from the Drosos Foundation. In 2008 the network developed a strategic framework with three- and five-year targets attached, prioritising activities in MENA countries based on public health need for harm reduction interventions and on openness to the harm reduction approach.[15]

MENAHRA has increasingly proved to be a catalyst for civil society mobilisation around harm reduction advocacy and service

f The following countries have the death penalty for drug offences in legislation, although some have not carried out executions for drug offences in recent years: Iran, Saudi Arabia, Egypt, Syria, Yemen, Libya, Kuwait, Iraq, Oman, UAE, Bahrain and Qatar. In 2009 the intention to use the death penalty for drug offences was announced in Gaza.

provision in the region. To date, the network has directly funded five partner CSOs in Iran, Pakistan, Afghanistan, Egypt and Tunisia. MENAHRA's sub-regional knowledge hubs in Morocco, Lebanon and Iran have reached over 1,500 civil society representatives, media workers, religious leaders and policy makers through seminars, site visits and training workshops on issues such as harm reduction key interventions, proposal writing and advocacy. The network regularly shares harm reduction news with over 550 contacts, works with media to increase awareness of harm reduction and participates in international events such as the UN Commission on Narcotic Drugs (2008 and 2009) and the International Harm Reduction and AIDS Conferences. In May 2009 MENAHRA became an officially registered association in Lebanon.

MENAHRA led the development of the harm reduction focused proposal to the Global Fund Round 9. Although the bid was ultimately unsuccessful, the process was extremely useful in strengthening the capacity of CSOs in the region to prepare a complex multi-country proposal, in planning and prioritising activities over five years in the region with CSOs and UN agencies (UNODC and WHO) and in engaging country coordinating mechanisms on the issue of harm reduction.

In Tunisia, the civil society organisation ATL MST/SIDA led a participatory community assessment to find out more about the risks faced by people who inject drugs and to inform harm reduction programming in the country. This assessment was used as an advocacy tool and enabled ATL MST/SIDA to implement Tunisia's first harm reduction pilot programme.[16]

Despite these achievements, overall, civil society involvement in HIV prevention, treatment and care for people who use drugs remains weaker in the Middle East and North Africa than it is in other regions. There is an essential role for international and regional organisations, including multilateral agencies, in strengthening and building civil society in the MENA region to advocate for and implement harm reduction.

Multilaterals and donors: Developments for harm reduction

Several multilateral agencies and donors supported and participated in the first Regional Conference on Harm Reduction, including the Council of Europe, GTZ, the Drosos Foundation, the Global Fund, UNAIDS, the Pompidou Group, UNODC and WHO.

As in other regions, the Global Fund is a significant source of financial support for harm reduction programmes. For example, a programme in Morocco (recently highlighted as a success story) has reached 400 people who inject drugs in its pilot stage and aims to significantly expand service provision of OST and NSPs (including in pharmacies and prisons) as well as to increase access to hepatitis C treatment.[10] Harm reduction activities are being funded by the Global Fund in Egypt (e.g. peer outreach and the establishment of drop-in centres). There are also plans to reach people who inject drugs through Global Fund programmes in Jordan and Palestine (in the latter, programme activities have been delayed due to conflict).[10]

UNODC MENARO is actively supporting harm reduction activities in several countries in the region (including Morocco, Lebanon, Jordan and Egypt) through its regional programme: Promoting Best Practices and Networking for Reducing Demand for and Harm from Drugs. The European Commission funds the programme and the Trimbos Institute, Netherlands, is a programme partner, particularly supporting the development of harm reduction outreach programmes.

WHO EMRO is also a key supporter of harm reduction in the region, providing technical support to civil society through its direct involvement in MENAHRA and other initiatives.

References

1. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
2. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28.
3. Shawky S et al. (2009) HIV surveillance and epidemic profile in the Middle East and North Africa. *JAIDS Journal of Acquired Immune Deficiency Syndromes* 51: S83–S95.
4. UNAIDS (2009) *AIDS Epidemic Update*. Geneva: UNAIDS.
5. J Toufiq, National Center on Drug Abuse Prevention and Research, Morocco (2010) Global state of harm reduction information response.
6. Cook C and Kanaef N (2008) *Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
7. WHO, UNODC, UNAIDS (2009) *Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users*. Geneva: WHO.
8. WHO (2009) *Towards Universal Access: Scaling Up Priority HIV/AIDS Interventions in the Health Sector. Progress Report 2009*. Geneva: WHO/UNAIDS.
9. Mohsenifar S (2009) for INCAS. Setting up a drug treatment service for female drug users in Iran. Paper presented at Towards Harm Reduction in the MENA Region: A Step Forward, MENAHRA Regional Conference on Harm Reduction, Beirut, Lebanon, November.
10. Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) (2009) *Regional Overview: Middle East and North Africa*. Geneva: GFATM.
11. WHO Eastern Mediterranean Regional Office (2008) *Progress Report on HIV/AIDS*. Regional Committee for the Eastern Mediterranean EM/RC55/INF.DOC.1, Agenda item 4(a).
12. WHO Resolution Regional Committee for the Eastern Mediterranean (2009) Fifty-sixth session EM/RC56/R.5, Agenda item 6(a): The growing threats of hepatitis B and C in the Eastern Mediterranean region: a call for action.
13. Kamarulzaman A and Saifuddeen SM (2010) Islam and harm reduction. *International Journal of Drug Policy* 21(2): 115–18.
14. IHRA (2010) unpublished data.
15. WHO (2009) op. cit. p. 36.
16. Mahjoubi MB (2009) for ATL MST/SIDA. Scaling up HIV prevention with drug users in Tunisia: Leading a participatory community assessment. Paper presented at Towards Harm Reduction in the MENA Region: A Step Forward, MENAHRA Regional Conference on Harm Reduction, Beirut, Lebanon, November.

2.9 Regional Update: Sub-Saharan Africa

Map 2.9.1: Availability of needle and syringe exchange programmes (NSP) and opioid substitution therapy (OST)

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known

Table 2.9.1: Harm Reduction in Sub-Saharan Africa

Country/territory with reported injecting drug use[a]	People who inject drugs[1]	Adult HIV prevalence amongst people who inject drugs[1]	Harm reduction response[2]	
			NSP[b]	OST[c]
Cote D'Ivoire	nk	nk	x	x
Djibouti	nk	nk	x	x
Gabon	nk	nk	x	x
Ghana	nk	nk	x	x
Kenya	130,748[d]	42.9%	x (P)	✓[e](M,O)
Malawi	nk	nk	x (P)	x
Mauritius	17,500	9.8%[f]	✓(39) (P)	✓(14) (M,O)
Nigeria	nk	5.5%	x	x
Senegal	nk	nk	x	✓ (B,O)
Sierra Leone	nk	nk	nk[g]	x
South Africa	262,975[h]	12.4%	x (P)	✓(6) (M,B)
Uganda	nk	nk	x	x
Tanzania	nk	nk	x (P)	x
Zambia	nk	nk	x	x

nk = not known

a The countries included in the table are those which have reported injecting drug use (IDU) and/or NSP or OST according to the latest UN Reference Group systematic reviews. However, IHRA data collection in 2007/8 also found IDU reports in Angola, Benin, Burkina Faso, Cameroon, Cape Verde, Ethiopia, Gambia, Guinea, Liberia, Mali, Mozambique, Niger, Rwanda, Seychelles, Somalia, Togo, Zanzibar and Zimbabwe.
b The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers. (P) = needles and syringes reported to be available for purchase from pharmacies or other outlets.
c The number in brackets represents the number of operational OST programmes, including publicly and privately funded clinics and pharmacy dispensing programmes. (M) = methadone, (B) = buprenorphine and (O) = any other form (including morphine, codeine).
d The UN Reference Group offers a range of 30,264 to 231,231, illustrating the uncertainty around the numbers of people who inject drugs in the country.
e Methadone maintenance treatment is available on a very limited basis from private clinics only.
f In 2009, a surveillance survey found an HIV prevalence of 47.4% among people who inject drugs, but this study has not yet been made publicly available.
g While the UN Reference Group includes Sierra Leone among the countries with NSP, this has been disputed by a UNODC representative in the region and so is listed here as not known.
h Researchers in South Africa find this figure to be too high, stating that the country has around 100,000 heroin users and about one-fifth of them at most inject.

Harm Reduction in Sub-Saharan Africa

Sub-Saharan Africa remains the region most heavily affected by HIV, accounting for 67% of new HIV infections worldwide.[3] The majority of new HIV infections occur through heterosexual intercourse, but recent epidemiological evidence attributes an increasingly significant role to injecting and non-injecting drug use in driving many national epidemics.[3] In addition, since 2008 more studies have identified the role of non-injecting drug use (e.g. methamphetamine smoking) in facilitating sexual transmission, particularly among youth in South Africa.[4 5]

Although less extensively studied than other key populations, people who inject drugs in Sub-Saharan Africa appear to be at high risk of HIV infection. Injecting has now been reported in the majority of the forty-seven Sub-Saharan states and there are indications that HIV prevalence is high among injecting populations. Although systematic figures do not exist for the majority of states, estimates derived from three countries in the region (South Africa, Mauritius and Kenya) suggest that 221,000 (range 26,000 to 572,000) people who inject drugs are living with HIV in the region.[i 1] In countries where estimates are available, reported HIV prevalence among people who inject drugs ranges from 5.5% in Nigeria to 42.9% in Kenya.[1]

Since 2008 few additional countries have adopted key harm reduction interventions as part of their HIV response. Mauritius remains the only country with established needle and syringe programmes (NSPs).[j] Opioid substitution therapy (OST) is also available in Mauritius and to a lesser extent in South Africa, Senegal and Kenya.

There is potential for injecting drug use to exacerbate epidemics in countries where HIV prevalence is already high and to expand epidemics rapidly in countries that have remained relatively less affected. Mauritius stands out as a case in point, where HIV prevalence among people who inject drugs has come to dominate the HIV epidemic in a short time span: 92% of new HIV infections were attributed to injecting drug use in 2005.[6] Experiences from Asia and Eastern Europe also illustrate the importance of timely interventions to mitigate the rapid escalation of epidemics among both key populations and the general population.

While there has been some increase in research involving vulnerable populations such as people who inject drugs in Sub-Saharan Africa, substantial evidence gaps remain.[3] The lack of data on drug use and HIV in the region continues to be a barrier to a clear understanding of the epidemic and hinders efforts to reduce HIV and other harms among drug-using populations.

Developments in harm reduction implementation

Needle and syringe exchange programmes (NSPs)

Mauritius remains the only country in the region with established NSPs. In 2008 it was reported that there were three sites in the country,[7] however, service provision has been substantially scaled up since then. In 2010 the official programme operates mainly through community-based outreach, using two mobile services to distribute injecting equipment to thirty-one sites. An additional eight fixed sites are run by non-governmental organisations (NGOs). Together, these services distribute sterile injecting equipment and condoms to nearly one in three people who inject drugs in the country.[8]

Unpublished data from the WHO indicates the existence of NSPs in Sierra Leone. However, data on the number of sites and extent of coverage are lacking,[2] and this information has been disputed by a UNODC representative in the region.[9]

While there are indications that sterile injecting equipment is available to purchase from pharmacies in some countries, it is clear that, outside Mauritius, most people who inject drugs in the region lack adequate access to sterile needles and syringes. Research suggests that needle and syringe sharing is common among males and females who inject in the region.[10 11]

As highlighted in 2008, women who inject drugs in the region are at increased vulnerability to HIV infection.[7] It is reported that many female injectors are also sex workers and therefore may be at increased risk of sexual HIV transmission.[6] Extremely risky practices, such as 'flashblood,'[k] continue to be reported among women who inject in Tanzania and Zanzibar.[10 12] Research from six African countries indicates that women who inject drugs in Sub-Saharan Africa are at the greatest risk of HIV infection, with an HIV prevalence rate two to ten times higher than among male injectors.[10]

Opioid Substitution Therapy (OST)

Opioid substitution therapy (OST) remains generally unavailable across Sub-Saharan Africa. Scale-up of OST in Mauritius has been steady since 2008, but services are still limited. Very limited OST is also available in South Africa, Kenya and Senegal.[2]

In Mauritius, it is estimated that 2,000 people, including 150 women, are receiving methadone maintenance treatment (MMT) from fourteen sites – a notable expansion in service coverage compared with the 400 people who were accessing MMT through seven sites in 2008.[7 8]

In South Africa, buprenorphine is provided as substitution therapy in approximately six drug treatment facilities. As these are privately operated facilities, the associated cost continues to make this service unobtainable to many individuals who use opiates. The South African Medicines Control Council has recently approved the registration of methadone in a form suitable for MMT.[2]

i The estimates for Sub-Saharan Africa should be viewed with considerable caution as the prevalence estimates were derived from three out of forty-seven countries in the region (South Africa, Mauritius and Kenya).

j NSP has also been reported in Sierra Leone, however, this has been disputed by a UNODC representative in the region and the source of the report is yet to be published.

k *Flashblood* refers to a dangerous blood-sharing practice that carries a very high probability of HIV transmission. One user draws blood back into the syringe after injecting heroin and then passes the syringe on to a peer who injects the 3 to 4 ml of blood.

In Kenya, MMT is accessible on a very limited basis in private clinics only. Its provision in public health facilities is prohibited by current government policy.[2]

In Senegal, buprenorphine has become available for opioid maintenance treatment, but data on the extent of coverage is absent.[2]

A lack of political will, legislation prohibiting the prescription of methadone and buprenorphine and weak health care systems in many countries remain major barriers to the introduction and scale-up of OST services across Sub-Saharan Africa.

While the harm reduction response is extremely limited in this region, some countries are reaching small numbers with detoxification and abstinence-based services; these include Mauritius, South Africa, Ghana, Zambia, Kenya, Sierra Leone, Malawi, Tanzania and Nigeria.[2 7]

Antiretroviral therapy (ART)

Since HIV infection in the region occurs predominantly via sexual transmission, most HIV interventions have not been targeted at people who use drugs. Data on HIV prevalence and on HIV and AIDS prevention and treatment services for people who inject drugs remain very limited. In Kenya, despite the number of voluntary counselling and testing sites (854) and centres providing antiretroviral treatment (731), only thirty-eight people who inject drugs are reported to be receiving ART.[2]

Policy developments for harm reduction

In most Sub-Saharan African countries, drug policy continues to focus on supply reduction and criminalisation of users. However, there is a growing awareness in several countries of the need to address HIV and drug use. National drug and/or HIV policies have been targeted at people who use drugs and harm reduction in a few instances, including in Kenya, Tanzania (and Zanzibar) and Mauritius.

The new Kenyan strategic plan for AIDS from 2010 to 2013 explicitly covers harm reduction services, including OST and NSPs.[13] Kenyan legislation will need to be amended in order to make the provision of such services possible. The Kenyan Ministry of Medical Services is developing a drug dependence treatment protocol that will include the provision of OST to opiate users.[9]

As part of Tanzania's national strategic plan on substance use and HIV and AIDS for 2007 to 2011, reported on in the 2008 Global State of Harm Reduction report,[7] the government is presently planning to introduce a pilot OST programme.[9]

In 2008 the Indian Ocean Commission, representing five Indian Ocean island states (Mauritius, Madagascar, Reunion, Seychelles and the Comoros) initiated discussions on the introduction of harm reduction policies. The 6th Colloquium on HIV in the Indian Ocean, with a theme of harm reduction, was held in Mauritius in November 2008, and talks continued at the First Conference on Harm Reduction in October 2009 in the same country.

Despite these policy amendments in some countries, law enforcement and criminalisation remain the dominant responses to drug use and people who use drugs in Sub-Saharan Africa. Even in Mauritius, which has the most developed harm reduction response in the region, there have been moves to reintroduce the death penalty for drug trafficking, especially for the importation of buprenorphine, provoking a strong reaction from national and international advocates.[14] Increased advocacy efforts to raise awareness around the urgency of responding to HIV and drug use among policy makers and health care providers are essential to bolster political support for harm reduction in the region.

Civil society and advocacy developments for harm reduction

Although civil society organisations (CSOs) with a focus on people who use drugs remain few in number, in the past two years some CSOs have worked alongside international organisations to advocate for the introduction and scale-up of harm reduction in the region.

The Sub-Saharan African Harm Reduction Network (SAHRN) was established in 2007 to increase the awareness of the need for a public health response to drug use and the adoption of a harm reduction approach in the region. SAHRN is building its membership and attempting to reach wider audiences through regular newsletters and through a website launched in early 2010: www.sahrn.net. In addition, the network has participated in various global conferences, including the XVII International AIDS Conference in Mexico in August 2008, Harm Reduction 2008 and 2009 in Barcelona and Bangkok respectively and the 1st Regional Middle East and Africa Harm Reduction Conference in Beirut in May 2009.

The Sub-Saharan African region held its first conference on harm reduction in 2009, organised and hosted by a Mauritian consortium of NGOs. The event was attended by representatives from all the Indian Ocean island states, along with participants from Mauritius, Kenya, Tanzania, Zanzibar and Mozambique. Community representatives, including people receiving MMT and people living with HIV from the host country, also played a prominent role at the conference.[8]

As in other regions, civil society organisations are responding to HIV and drug use in the absence of government programmes. In a number of countries where harm reduction services are limited or difficult to access, NGOs provide some outreach, HIV risk reduction information and health services for people who use drugs. For instance, in Kenya, in the absence of government programming, the Nairobi Outreach Services Trust, the Muslim Education and Welfare Association, the Omari Project and the Reachout Centre Trust all provide services to people who use drugs in the cities of Mombasa, Malindi and Nairobi, some since the mid-1990s.[9 10] There is an urgent need to strengthen advocacy on these issues and to begin bridging the service provision gap for people who use drugs. This requires increased support from government, donors and international organisations, including NGOs and multilateral agencies.

Multilaterals and donors: Developments for harm reduction

Existing prevention and care measures for people who use drugs in Sub-Saharan Africa are mainly supported by international donors and multilateral agencies. UNODC (as part of the Joint UNAIDS Team in Kenya and the UNAIDS Regional Support Team in Eastern and Southern Africa), WHO and UNICEF provide technical assistance to harm reduction initiatives in the region. Also since 2008, the Open Society Institute has begun supporting programmes to increase access to justice for people who use drugs in both Kenya and Tanzania.[15]

UNODC has played a key role in harm reduction scale-up in Mauritius and in sharing these experiences at the regional level. In 2009 the Mauritian Ministry of Health and the National AIDS Secretariat, assisted by UNODC and other agencies, successfully mobilised over US$3 million for the period 2009 to 2013 from the Global Fund to Fight AIDS, Tuberculosis and Malaria.[16] This programme will provide essential support to harm reduction interventions and services for high-risk groups, including people who inject drugs.[16]

In October 2009 the WHO and the UNODC offices in the region funded a surveillance survey in Mauritius to estimate the prevalence of injecting drug use and of HIV amongst the injecting population. The final report will be released in April 2010. A similar survey is planned in the Seychelles with the financial assistance of the UNODC and the Indian Ocean Commission.[8]

Since the majority of resources are directed towards heterosexual HIV transmission, most countries in Sub-Saharan Africa have limited institutional and technical capacity to address the issue of drug use and injecting effectively. Most countries are far from implementing the comprehensive package of interventions advocated by UNODC, UNAIDS and WHO to reverse the epidemic and reduce drug-related harms.[17] Multilateral agencies' continued focus on harm reduction, as well as increased support for key regional and local partners, including civil society and organisations of people living with HIV and who use drugs, is necessary for the development of a comprehensive response in the region.

References

1. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
2. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. *Lancet* 375(9719): 1014–28.
3. UNAIDS (2009) *AIDS Epidemic Update*. Geneva: UNAIDS.
4. PlüDdemann A et al. (2008) Adolescent methamphetamine use and sexual risk behaviour in secondary school students in Cape Town, South Africa. *Drug and Alcohol Review* 27(6): 687–92.
5. Parry C et al. (2009) HIV-risk behavior among injecting or non-injecting drug users in Cape Town, Pretoria, and Durban, South Africa. *Substance Use and Misuse* 44: 886–904.
6. Dewing S et al. (2006) Review of injection drug use in six African countries: Egypt, Kenya, Mauritius, Nigeria, South Africa and Tanzania. *Drugs: Education Prevention and Policy* 5(2): 118–29.
7. Cook C and Kanaef N (2008) *Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
8. F Sulliman, Chair of the SAHRN Steering Committee (2010) Global state of harm reduction information response.
9. R Abdool, Regional HIV/AIDS Adviser, Africa and Middle East, UNODC Regional Office for Eastern Africa (2010) Global state of harm reduction information response.
10. Reid RR (2009) Injection drug use, unsafe medical injections, and HIV in Africa: A systematic review. *Harm Reduction Journal* 6(24).
11. Kools J-P (2008) *Drug Use and HIV Risk among Young People in Sub-Saharan Africa*. Amsterdam: Stop AIDS Now!
12. McCurdy S et al. (2010) Flashblood: Blood sharing among female injecting drug users in Tanzania. *Addiction* (in press).
13. National AIDS Control Council (2009) *Kenya National AIDS Strategic Plan 2009/10 to 2012/13*: www.nacc.or.ke/2007/images/downloads/knasp_iii_document.pdf (last accessed 22 March 2010).
14. IHRA blog (2010) If you cannot live without Subutex, do not come to Mauritius. Go somewhere else. Mauritius threatens to bring back the death penalty for drugs: www.ihrablog.net/2010/03/mauritius-prime-minister-to-drug-users.html (last accessed 22 March 2010).
15. Personal communication with Daniel Wolfe (Open Society Institute). 1 April 2010.
16. Global Fund to Fight AIDS, Tuberculosis and Malaria (2010) Mauritius Grant Performance Report: www.theglobalfund.org/grantdocuments/8MVSH_1716_818_gpr.pdf (last accessed 22 March 2010).
17. WHO, UNODC, UNAIDS (2009) *Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users.* Geneva: WHO.

3.1: The silent epidemic: Responding to viral hepatitis among people who inject drugs

About the authors:

Nick Walsh is a public health physician who has worked in harm reduction since 1998 more recently moving into addiction medicine including opioid substitution therapy. His main area of interest is viral hepatitis and HIV management in people who use drugs. Annette Verster, Andrew Doupe, Marco Vitoria and Ying-Ru Lo are all part of the HIV/AIDS Department at the World Health Organization (WHO) in Geneva, Switzerland. Steven Wiersma is based in the Department of Immunization, Vaccines and Biologicals at WHO.

Data and text were in part based on a draft 'Scoping document: a review of viral hepatitis and HIV co-infection among injecting drug users and assessment of priorities for future activities' prepared by Nick Walsh and commissioned by the Department of HIV/AIDS, WHO, Geneva. The authors of this chapter would like to thank all those who reviewed and contributed to that document.

Introduction

Hepatitis B (HBV) and hepatitis C (HCV) are the two most common forms of viral hepatitis. They are also the most common blood-borne viral infections to affect people who inject drugs. While the urgency of preventing and treating HIV infection among people who inject drugs has overshadowed the more 'silent' epidemic of viral hepatitis,[a] the latter is increasingly recognised as a major public health problem, particularly in cases in which people living with HIV are co-infected with HBV and/or HCV.

Both HBV and HCV can be effectively treated and cured. However, treatment uptake remains extremely low among people who inject drugs in those settings in which it is available. In most low- and middle-income countries treatment is generally unavailable or prohibitively expensive. Access to prevention and treatment for viral hepatitis among people who inject drugs is often hampered by a lack of expertise among health care providers. Evidence shows that providing integrated and patient-oriented prevention and treatment services are effective in engaging and retaining people who inject drugs in services and successfully treating viral hepatitis.

There is a need to build prevention and treatment service capacity. The coordination between HBV and HCV treatment services and HIV, TB and mental health services is critical. Meaningful consultation with drug user organisations and the inclusion of drug users or 'peer workers' in service delivery models is not only best practice,[1] but also provides an important mechanism to improve prevention and treatment literacy among drug using populations. This chapter provides a global overview of viral hepatitis among people who inject drugs and summarises the international response in policy and programmes.

a In this chapter viral hepatitis refers to hepatitis B and C and not other types of viral hepatitis such as hepatitis A, D, and E.

An introduction to viral hepatitis

Viral hepatitis infection is widespread. It is estimated that 170 million people are living with HCV and two billion people are infected with HBV, of whom 360 million have chronic HBV infection. The majority of these people live in low- and middle-income countries. Viral hepatitis can cause liver fibrosis, dysfunction and ultimately cirrhosis and cancer of the liver, all resulting in increased morbidity and mortality. The global burden of disease due to acute hepatitis B and C and to cancer and cirrhosis of the liver is high (about 2.7% of all deaths) and is forecast to become a higher ranked cause of death over the next two decades.[2]

Hepatitis B: Prevalence and transmission

HBV is transmitted primarily through blood and infected bodily fluids. The most common routes of transmission are from mother to child (vertical or perinatal transmission), person to person in early childhood (horizontal transmission), unsafe medical injection (iatrogenic transmission), sexual transmission and via the sharing of injecting equipment. Approximately 60% of the global population lives in areas where HBV infection is highly endemic. HBsAg is the marker in the blood that indicates active HBV infection. The prevalence of this marker in the general population of a defined geographical area provides a measure of how endemic the virus is. Endemicity varies considerably around the world (see Table 3.1.1).

A comprehensive approach to eliminating HBV transmission is necessary to address infections acquired perinatally and during early childhood, as well as those acquired by adolescents and adults.

Table 3.1.1: Characteristics of hepatitis B epidemics[3 4]

Hepatitis B endemicity	HBsAg prevalence among general population[5]	Main modes of transmission
Low	<2%	• Most new infections occur among young adults via sexual transmission and sharing injecting equipment[6]
Intermediate	2–7%	• Vertical, perinatal, horizontal, health-care-related and sexual transmission all occur
High	≥8%	• Vertical, perinatal and horizontal transmission in early childhood are most common • 70% to 90% of adult population has serologic evidence of prior HBV infection

People who inject drugs are at increased vulnerability to infection through the sharing of injecting equipment. The prevalence of HBV among people living with HIV (HBV/HIV co-infection) varies widely, for example, ranging from between 5% and 10% in the United States to between 20% and 30% in Asia and parts of Sub-Saharan Africa.[7] It is higher in areas where vertical and perinatal HBV transmission is high and lower in areas where exposure to HBV is limited to adulthood. This is because although the rate of chronic HBV infection among HIV-positive adults exposed to HBV is increased compared with HIV-negative individuals, it is much lower than the risk of developing chronic HBV in early childhood.

Hepatitis C: Prevalence and transmission

HCV is transmitted primarily through contaminated blood, blood products and injecting equipment. The sharing of other equipment such as tourniquets, filters and spoons has also been associated with HCV transmission although this is less common.[6] Sharing injecting equipment among people who inject drugs is the most common route of HCV transmission. In high-income countries, a greater proportion of HCV infections in the population is attributable to injecting drug use, while in low- and middle-income countries iatrogenic transmission (through medical and other unsterile injections) continues to occur.[8 9] Among people who inject drugs, the incidence of infection appears higher in low- and middle-income countries compared with high-income countries, illustrating that the epidemic of HCV among people who inject drugs is more recent in the developing world.[10]

Both HBV and HCV are more easily transmissible than HIV. Therefore, viral hepatitis prevalence in any given population of people who inject drugs is often much higher than HIV prevalence. Furthermore, studies of HCV infection in drug users who do not inject indicate an increased risk of HCV infection. A 2007 synthesis of available high-quality data regarding HCV infection among non-injecting drug users found a range of prevalence from 2% to 35% across thirty-five studies globally.[11] In addition, non-injecting drug users may transition to injecting drug use, increasing their risk of infection with blood-borne viruses.

Sexual transmission of HCV is rare.[12] Recent studies suggest that traumatic sexual practices and HIV co-infection may be conducive to HCV transmission.[13 14 15] Research from the Netherlands highlights that sexual transmission of HCV is occurring among HIV-positive, non-injecting but substance-using men who have sex with men, engaging in traumatic sexual practices.[16] Also, the presence of ulcerative sexually transmitted infections (STIs) may facilitate HCV sexual transmission.[17]

HCV prevalence in prisons and other detention settings is high as a result of the large numbers of injecting drug users who spend time in detention, combined with risk behaviours such as injecting and non-sterile tattooing that often occur in these settings.[18] As shown in Table 3.1.2, across the limited number of countries for which data are available, prison populations consistently contain a high proportion living with HCV (see Chapter 3.5 on prisons).[19]

Overall, data on viral hepatitis among people who inject drugs are scarce and comparison is often difficult as data have been collected over different time periods and/or using different collection methods between and within countries. While such data must be interpreted with great caution, a crude analysis indicates that HCV, in particular, is highly prevalent among people who inject drugs. Table 3.1.3 provides an overview of the currently available data for the ten countries making up 70% of the estimated global HIV burden among people who inject drugs.

Brazil, China, Indonesia, Italy, Kenya, the Russian Federation, Thailand, the US, Ukraine and Viet Nam account for half of the total estimated population of injection drug users (8.1 million people) and two-thirds of the estimated global population of people who inject drugs and are living with HIV (2.1 million people).[20] The average HIV prevalence among people who inject drugs in these ten countries is approximately 25%, whereas the HCV prevalence is much higher, up to 60%. In addition, in eight of these countries (the exceptions are Ukraine and Kenya) for which data are available, three-quarters of the people who inject drugs and are living with HIV are co-infected with HCV. Some of these countries, including China, the Russian Federation and Viet Nam, have rates of HIV/HCV co-infection in populations of injectors of over 90%.

Table 3.1.4 provides an illustrative overview of the prevalence of chronic HCV (HCVAb) and HBV infection (HBsAg) in these ten countries. Although only viral hepatitis status is presented here, a majority of people who inject drugs and are living with HIV in most countries are co-infected with either HCV or HBV or both viruses together. There is wide variation in the quality of the data between and within countries, and data for HBV status among people who inject drugs is less extensive than that of HCV. It should be noted that the prevalence of chronic HBV in injectors reflects population prevalence despite generally being higher, while the burden of HCV among people who inject drugs is universally high regardless.

Table 3.1.2: Prevalence of HCV among people who inject drugs and prisoners in selected countries[21 b]

Country or territory	Adult HCV prevalence among people who inject drugs	HCV prevalence among prisoners
Bahrain	81%	-
Brazil	39.5–69.6%	-
Czech Republic	21–59%	18–78%
Estonia	90%	82–97.4%
Germany	75%	80% (prisoners with a of history of injecting, Berlin)
India	92%	-
Indonesia	60–98%	-
Iran	35%	18.7%
Japan	55.1–60%	-
Kazakhstan	65.7%	-
Mauritius	95%	-
New Zealand	70%	80% (prisoners with a history of injecting)
Pakistan	89%	-
Saudi Arabia	69%	-
Sweden	83.8%	-
Thailand	90%	-
Ukraine	70–90%	-
UK	41%	30–44% (prisoners with a history of injecting)
US	50–80%	30–40%

Table 3.1.3: Crude analysis of estimated prevalence of HIV among people who inject drugs (IDUs) in top ten priority countries (using mid-point estimates)[20 c]

Country	Number of people who inject drugs	HIV prevalence among people who inject drugs	Number of IDU living with HIV	Percentage of global total number of IDU living with HIV[d]
Russia	1,825,000	37.15%	677,988	22.6%
Brazil	800,000	48%	384,000	12.8%
US	1,857,354	15.57%	289,190	9.6%
China	2,350,000	12.3%	289,050	9.6%
Ukraine	375,000	41.8%	156,750	5.2%
Indonesia	219,130	42.5%	93,130	3.1%
Thailand	160,528	42.5%	68,224	2.3%
Kenya	130,748	42.9%	56,091	1.9%
Viet Nam	135,305	33.8%	45,733	1.5%
Italy	326,000	12.1%	39,446	1.3%
Total	**8,179,065**		**2,099,602**	**70%**

b No new data were collected systematically since 2008.
c Since this table was prepared, updated information has become available for Brazil and Ukraine – see regional chapters for details.
d Mathers et al (2008) estimate that 3 million people who inject drugs are living with HIV.

Table 3.1.4: Crude analysis of estimated prevalence of HCV and HBV in ten highest priority countries[22 e]

Country	Percentage of people who inject drugs living with HCV	Number of people who inject drugs living with HCV	Number of people who inject drugs living with HCV (mid-range estimate)	Percentage of IDUs with chronic HBV (HBsAg)	Number of IDUs with chronic HBV (HBsAg)	Number of IDUs with chronic HBV (HBsAg) (mid range estimate)	Population prevalence of HBV (HBsAg)
Russia	54–97%[23 24 25]	985,500 to 1,770,250	1,377,875	4–9%[26 27]	73,000 to 164,250	118,625	Intermediate
Brazil	10–83%[28 29 30 31]	80,000 to 664,000	372,000	2–7%[30 32 33]	16,000 to 56,000	36,000	Intermediate
USA	35%[34]	650,074	650,074	2–11%[35]	37,147 to 204,309	120,728	Low
China	61.4%[36]	1,442,900	1,442,900	2.9–16.9%[37 38 39]	68,150 to 397,150	232,650	High
Ukraine	61–79%[40 41 42 43]	228,750 to 296,250	262,500	6.7–10.90%[41 44]	25,125 to 40,875	33,000	Intermediate
Indonesia	60–98%[45]	131,478 to 214,747	173,113	n/a	n/a	n/a	High
Thailand	4–97%[46 47 48 49]	6,421 to 155,712	81,067	9.5–14%[46 50]	15,250 to 22,474	18,862	High
Kenya	42–61%[51 52]	54,914 to 79,756	67,335	6.30%[52]	8,237	8,237	High
Viet Nam	46–74%[53 54]	62,240 to 100,126	81,183	14.2%[53]	19,213	19,213	High
Italy	60%[55]	196,252	196,252	n/a	n/a	n/a	Low

n/a = data not available

Epidemiology by region

Western Europe

HCV infection in Western Europe was most commonly spread by unsafe medical procedures, blood and blood products during the early twentieth century. With the introduction of universal precautions and screening of blood and blood products during the early 1980s, transmission shifted to sharing of injecting equipment among drug users. In northern Europe, the population prevalence is between 0.1% and 1%. The population prevalence of HCV in Western Europe is between 0.2% and 1.2% and in southern Europe is between 2.5% and 3.5%.[56]

Western European countries generally have low HBV endemicity, although there are significant variations. The prevalence of HBsAg in Italy has decreased from 3% in the 1980s to less than 1%.[57] There is less information available about HBV/HIV co-infection.

Eurasia

There is limited information about HCV prevalence in Central and Eastern Europe and Central Asia. Nevertheless, the available data indicate higher prevalence than in Western Europe, with very high prevalence among some risk groups, including people who inject drugs.[58] Most studies of people who inject drugs and are living with HIV in the region have found HCV/HIV co-infection prevalence to be greater than 80%.[21]

The epidemiology of HBV and HBV/HIV co-infection in Eastern Europe is less well understood. In general, HBV prevalence among the general population and among people who inject drugs in Central Europe and Central Asia is higher than in Western Europe.

Asia and Oceania

HCV prevalence in Asia and the Pacific varies between countries. HCV infection is due to unsterile medical injections,[8 9] contaminated blood transfusions,[59] traditional cultural practices[60] and, more recently, injecting drug use.[61] While iatrogenic transmission still occurs in some countries, transmission as the result of injecting drug use is increasing.[62]

Population HCV prevalence ranges from 1.4% in Australia to 5.6% in north-western Thailand. HCV is very common among people who inject drugs in Asia and almost universal among those who are living with HIV.[63 64] HCV/HIV co-infection is a major issue in Asia as it is estimated there are between 735,000 and 1.4 million people who inject drugs and are living with HIV[20] in the region.

Hepatitis B is endemic in most of Asia, with some notable exceptions, including Singapore and Taiwan. Few studies have examined the prevalence of HBV/HIV co-infection among people who inject.

e Further detail about cited studies can be found in Table 3.1.5. The data cited are not of uniform quality and should be interpreted as illustrative of the burden of viral hepatitis among people who inject drugs rather than as an accurate measure of the burden of disease. These data result from the inclusion of data from published sources rather than confirmed cases collected in national surveillance systems. HCV status refers to HCVAb prevalence in cited studies. Note that the presence of HCV seropositivity may not indicate HCV RNA viraemia. HBV status refers to HBsAg in order to indicate the current burden of disease as HBV DNA status indicating viraemia was not available in the epidemiological literature. Since this table was prepared, updated information has become available for Brazil and Ukraine – see regional chapters for details.

Middle East and North Africa

HBV and HCV prevalence in the Middle East and North Africa vary significantly. In the eastern Mediterranean region, it is estimated that unsterile medical injections are responsible for 2.5 million HBV infections, 600,000 HCV infections and 2,200 HIV infections annually,[65] which account for 58% of all HBV infections, 82% of HCV infections and 7% of HIV infections.

The country with the highest population HCV prevalence globally is Egypt (15% to 20%), a result of the use of unsterile injections during schistosomiasis eradication programmes from the 1960s through to 1987.[66 67] Other countries report much lower HCV prevalence. The Middle East and North Africa region has an intermediate level of HBV endemicity. Apart from in Iran, there is little available data on viral hepatitis among people who inject drugs in the region.

Sub-Saharan Africa

Population HCV prevalence in Africa varies by country but is generally high.[68 69] Iatrogenic transmission was important in the development of the African HCV epidemic.[70 71] Much of Africa has a high level of HBV endemicity, with an estimated fifty million people living with chronic HBV in Sub-Saharan Africa and the population HBsAg prevalence is between 9% and 20%.[72] Transmission is mainly perinatal and during early childhood rather than vertical alone.[73] Little is known about HCV and HBV prevalence among people who inject drugs in Africa.

North America

The prevalence of chronic HCV is approximately 1.3% in the United States[74] and 0.7% in Canada. Over 60% of new infections in Canada are attributable to injecting drug use,[75] with a similar proportion in the US.[76]

HBV prevalence in the US is low and decreasing, although it remains elevated in some immigrant groups and indigenous communities.[77 78 79] While sexual transmission is most common, around 12% of all acute HBV cases in the US occur in individuals with a history of injecting drug use. In Canada, 34% of acute HBV cases occur among people who inject.[80]

Latin America and the Caribbean

The population prevalence of HCV in Latin America varies by country, but is generally less than 1%. Most HCV infections in Latin America are the result of contaminated blood products, although there are places in which injecting drug use is an important risk factor such as the northern states of Mexico and major urban areas in Central and South America. Overall, HCV prevalence among people who inject drugs is high in Latin America. It is also elevated among non-injecting cocaine users in Brazil and Argentina. Studies of HCV infection in people who inject drugs and are living with HIV have shown very high proportions of co-infection.

Central and South America is mostly considered a region of low HBV endemicity, although there are some exceptions, including the Amazon region. It is estimated that there are some 400,000 new HBV infections in Latin America annually.[81 82] HBV prevalence among people who inject drugs is less understood although there are some studies from major Latin American cities.[33 83]

There is little data available on the prevalence of viral hepatitis in the Caribbean. One exception is the Dominican Republic, which has high HBV endemicity.

Prevention of viral hepatitis

Universal infant immunisation, catch-up immunisation of at-risk populations, improved screening of blood products, prevention of transmission in health care settings and safer injecting and sexual practices are common prevention strategies recommended for HBV and HCV. Due to screening of blood donors and products, HBV and HCV transmission via blood products has been virtually eliminated in developed and many developing countries. Transmission of HBV and HCV via medical procedures, including injections, is rare in developed countries but continues to occur in developing countries.

The availability of HCV testing since 1989 resulted in the introduction of blood product screening in the early 1990s in Australia, Europe and the US. As of 2005 HCV screening is available and used in at least 129 countries, 110 of which screen 100% of their blood supply.[84] In those high-income countries that have initiated screening, the number of new HCV infections has dropped dramatically, but what remains are alarming HCV epidemics almost exclusively among people who inject drugs.

The global expansion of HBV vaccination, including of health care workers, has resulted in a decline in acute HBV cases, a reduction in the proportion of deaths attributable to cirrhosis of the liver or liver cancers and falling prevalence of HBsAg in vaccinated populations.[85] As discussed below, in the absence of an effective HCV vaccine, harm reduction interventions are the principle programmatic measures that can be applied at the community level to prevent HCV infection, as well as HBV infection among non-vaccinated individuals.

Hepatitis B vaccination

The HBV vaccine, which has been available since 1981 and is safe, effective and inexpensive, forms the mainstay of HBV prevention. Following the actions and resolutions outlined in Box 3.1.1, as of 2008, 177 countries had incorporated HBV vaccination as an integral part of their national infant immunisation programmes, and an estimated 69% of the 2008 birth cohort received three doses of HBV vaccine.[86] However, there are still many countries, particularly in Africa, South East Asia and Latin America in which HBV vaccine coverage levels are significantly lower. Furthermore, vaccination rates among most-at-risk populations, such as people who inject drugs, are low worldwide, with some exceptions.

There are few clinical issues related to HBV vaccine and there is no reason why it should not be given as a matter of course to people who use drugs. For people living with HIV, the vaccine response may be affected by some factors such as viral load, CD4 cell count, sex, age, type and duration of antiretroviral therapy (ART) and type of AIDS-defining illness. In order to obtain adequate protection, it is essential that people living with HIV are vaccinated as early as possible in the course of their disease.[86]

Harm reduction measures

WHO, UNODC and UNAIDS recommend a comprehensive set of evidence-based measures for HIV prevention, treatment and care for people who use drugs both in communities and closed settings. These measures include:[87]

- Needle and syringe programmes (NSPs)
- Opioid substitution therapy (OST) and other drug dependence treatment
- Voluntary HIV counselling and testing
- Antiretroviral therapy
- Prevention and treatment of STIs
- Condom programming
- Targeted information, education and communication
- Hepatitis diagnosis, treatment and vaccination
- Tuberculosis prevention, diagnosis and treatment.

Measures such as NSPs, OST and other drug dependence treatment, condom programming and the prevention and treatment of STIs are also relevant for the prevention and treatment of viral hepatitis. Given that HBV and HCV are more infectious than HIV, coverage levels of these interventions would need to be higher than those recommended for HIV in order have an impact on the epidemic.[88] Simple measures should also be included such as advising those people living with viral hepatitis to reduce consumption or abstain from alcohol, as well as providing other injecting paraphernalia such as tourniquets, filters and spoons.

People who inject drugs, men who have sex with men, and individuals with multiple sex partners, who have not been vaccinated against HBV, are at an increased risk of HBV infection through sex. Hepatitis C can also be transmitted sexually, particularly in the context of HIV co-infection. As with HIV prevention, safer sex practices (e.g. the consistent and correct use of condoms) are critical to reduce the incidence of HBV and HCV infection among at-risk groups and measures to promote safe sex need to be scaled up.

Treatment and clinical management of viral hepatitis

Hepatitis B

Not everyone who tests positive for hepatitis B requires treatment. Only in cases of chronic (or active) infection is treatment necessary. As previously noted, people who inject drugs may be more likely to develop chronic disease, particularly if they are also living with HIV. They may also experience a reactivation of HBV if they have recently acquired HIV.

HBV/HIV co-infection

Not all people living with HIV/HBV co-infection require treatment for HBV. However, for those who do require treatment, it is generally lifelong for both infections. The antiretroviral (ARV) regimens for HIV/HBV co-infected individuals with active HBV disease should contain more than one ARV with both anti-HIV and anti-HBV activity (e.g. lamivudine [3TC] or emtricitabine [FTC] plus tenofovir [TDV]). Several studies have demonstrated that HIV/HBV co-infected individuals have a three- to six-fold increased risk of developing chronic HBV disease, an increased risk of cirrhosis and a seventeenfold increased risk of death when compared with HBV-positive individuals without HIV infection.[89 90]

However, recognising when HBV needs to be treated and the provision of adequate clinical management of HBV disease are still a challenge in the majority of resource-limited settings.

The lack of adequate HBV and HCV treatment policy guidance for resource-limited settings is reflected in the 2006 version of WHO recommendations for ART for HIV infection in adults and adolescents,[91] which provided limited guidance on managing HIV in people co-infected with HBV and/or HCV. However, the importance of viral hepatitis as a public health issue in the context of HIV has been progressively recognised. In 2007 the WHO European Region developed standardised clinical protocols for the management of HBV/HIV co-infection, HCV/HIV co-infection and prevention of hepatitis A, B and C virus infection in people living with HIV, particularly for those who inject drugs, an important population affected by HIV and viral hepatitis in this region.[92]

In 2009 WHO's recommendations for ART for HIV infection in adults and adolescents were reviewed and the revised guidelines make specific recommendations about ART management of HBV/HIV co-infection,[93] including that all people living with HIV should be screened for HBV infection and that ART should be initiated in all co-infected individuals who require treatment for HBV infection irrespective of CD4 cell count or clinical stage of HIV disease.

Hepatitis C

Current treatment for HCV consists of pegylated interferon and ribavirin combination therapy for twenty-four weeks in genotypes 2 and 3 and forty-eight weeks in genotype 1 and most other genotypes.[94] Pegylated interferon needs to be administered subcutaneously, is complex to deliver (i.e. requires a cold supply chain and weekly injections), costly and not generally available through the public sector in resource-limited settings. Treatment efficacy is influenced by the HCV genotype, and side effects, including mental health complications, are common.

The current high cost of pegylated interferon, due to patents held by two pharmaceutical companies,[f] means that treatment is unavailable for most people who need it in low- and middle-income countries. Furthermore, there are no generic drugs currently available in the global market. The lack of technical capacity of professionals to deliver treatment is also a major barrier to access. Treatment is further complicated by issues of logistics (diagnosis, cold chain), the toxicity of the agents, the unpredictable nature of response to treatment and the need for long-term follow-up.

HCV/HIV co-infection

As observed with HBV/HIV co-infection, HCV/HIV co-infection is also significantly associated with progression to advanced liver disease and is a leading cause of death among people living with HIV. Data suggest that HIV infection accelerates HCV-related disease progression and mortality,[95 96] but the effect of HCV on the rate of HIV disease progression remains difficult to distinguish. A recent meta-analysis showed an increase in the overall risk of mortality, but did not demonstrate an increased risk of AIDS-defining illnesses among people living with HCV/HIV co-infection.[97]

f Schering Plough's (recently merged with Merck & Co.) patent on pegylated interferon α2b expires in 2015 and Roche's patent on pegylated interferon α2a expires in 2017.

While many studies suggest that the sustained viral response rates of HCV therapy in HIV co-infected individuals are significantly lower than in people without HIV,[98 99 100] other studies have found higher response rates in this population.[101]

With regards to HCV treatment interactions with ART, a large multicentre observational cohort study conducted in Europe examined the level of toxicities of different ART regimens used for HIV/HCV co-infection and did not find significant differences.[102] However, important pharmacological interactions between ribavirin with abacavir (ABC), atazanavir (ATV), didanosine (ddI), stavudine (d4T) and zidovudine (AZT) have been described and can be associated with severe toxicity.[102] Viral hepatitis can adversely affect HIV treatment through the liver toxicity of some antiretroviral agents, which is becoming a major cause of morbidity and mortality among HBC/HIV and HBV/HIV co-infected people.[89 97]

As reported in the 2008 Global State of Harm Reduction report, there is very little available information on the extent to which people who inject drugs are receiving HCV treatment around the world. Responses to HCV among people who inject drugs are nascent or non-existent in most middle- and low-income countries.[21] In Asia, countries are just beginning to address HCV. In the Middle East, North Africa and Sub-Saharan Africa, information on the availability of HCV treatment is very limited. In Iran, where harm reduction services have been dramatically scaled up in recent years, HCV testing and treatment is available to some people. These services are available in South Africa, however, the degree to which people living with HIV have access to them is unknown. In Latin America and the Caribbean, access to HCV-related services appears limited, although Brazil has a universal access policy to HCV treatment, including for people who inject drugs.[21]

Increased access to HCV management is most urgently needed in Asia and Eastern Europe as these regions have the highest HIV/HCV co-infection prevalence. Low-threshold accurate HCV diagnosis is not always available and the prohibitive costs of drugs to treat HCV prevent the majority of people who require HCV treatment from accessing it. In several countries, people who use drugs are explicitly excluded from HCV treatment. In some a period of abstinence from drug use is required before treatment can be initiated, while in others treatment is left to the discretion of the medical doctor.[21] Scaling up HIV, HBV and HCV testing, diagnosis and treatment and removing barriers to accessing services are critical steps required to address these dual epidemics among people who inject drugs.

International response to viral hepatitis

The international response to viral hepatitis (among drug using populations and in general) is gradually gaining pace. As illustrated in Box 3.1.1, the World Health Assembly (the governing body of the WHO) has long been vocal on the threat posed by viral hepatitis and the necessity of taking prevention interventions to scale.

Table 3.1.5: Further information on data sources from table 3.1.4

Country	Sites and number of participants in study on HCV	Sites and number of participants in study on HBV
Russia	Togliatti City (n = 411 IDUs)[23] Moscow, Volgograd and Barnaul (n = 1,473 IDUs)[24] St Petersburg (n = 446 IDUs)[25]	Tver' region Russia (n = 352 IDUs)[26] St Petersburg (n = 910 IDUs)[27]
Brazil	Sao Paulo (n = 205 IDUs)[28] Rio de Janeiro (n = 606 IDUs)[29] Salvador, São José do Rio Preto, Florianópolis, Itajaí, Porto Alegre, Gravataí (n = 847 IDUs)[30] Rio de Janeiro (n = 606 IDUs)[31]	Rio de Janeiro (n = 609 IDUs)[32] Rio de Janeiro (n = 102 IDUs)[33] Salvador, São José do Rio Preto, Florianópolis, Itajaí, Porto Alegre, Gravataí (n = 847 IDUs)[30]
US	Los Angeles, Chicago, New York, Baltimore (n = 5,088 IDUs)[34]	Unspecified US location[35]
China	16 provinces mainly in southern and eastern China (n = 15,236 IDUs)[36]	South-west China (n = 406 IDUs)[37] Guangxi (n = 117 IDUs)[39] South-west China (n = 333 IDUs)[38]
Ukraine	Vinnitsa (n = 315 IDUs)[40] Various regions Ukraine (n = 470 IDUs)[41] Vinnitsa (n = 112 drug users)[42] Various regions Ukraine[43]	Location (n = 450 IDUs)[44] Various regions Ukraine (n = 470 IDUs)[41]
Indonesia	Jakarta (n = 560 IDUs), other locations not specified[45]	n/a
Thailand	Chiang Mai (n = 98 IDUs)[46] Northern Thailand (n = 1,859 drug users)[47] Songkla and Pattani provinces (n = 453)[48] Northern Thailand (n = 60)[49]	Northern Thailand[50] Chiang Mai (n = 98 IDUs)[46]
Kenya	Nairobi (n = 146 IDUs)[51] Nairobi (n = 94 current IDUs)[52]	Nairobi (n = 314 IDUs and non IDUs)[52]
Viet Nam	Hanoi, Viet Nam (n = 179 IDUs)[54] Northern Viet Nam (n = 309 IDUs)[53]	Northern Viet Nam (n = 309 IDUs)[53]
Italy	Reported as national figure[55]	n/a

n/a = data were not available

Box 3.1.1: Milestones on viral hepatitis

World Health Assembly (WHA)

- Over the past two decades, the WHA has considered specific aspects of hepatitis prevention, including HBV vaccine integration into national immunisation programmes (resolution WHA45.17) and inclusion in outcome objectives of national cancer control programmes (WHA58.22),[g] HBV immunisation within the Global Plan of Action on Workers' Health 2008–2017, as well as safe blood supply, food safety and safe injections.
- As of 2007, more than 88% of Member States have introduced hepatitis B vaccine. Overall coverage with three doses of vaccine was 65%, and globally 27% of newborn infants received the birth dose of hepatitis B vaccine. This may change the dynamics of HBV among new cohorts of people who inject drugs in the coming years.
- In May 2009 Brazil, supported by China, Oman and Afghanistan, succeeded in adding viral hepatitis to the agenda of the 62nd annual WHA.[103] Brazil, Columbia and Indonesia then submitted a draft resolution on viral hepatitis, which was discussed at the WHO Executive Board meeting in January 2010.
- Most significantly, on 23 January 2010 the WHO Executive Board recommended to the 63rd WHA the adoption of resolution EB126.R16: Viral hepatitis,[104] which would direct the WHO Director-General to increase significantly WHO's focus on viral hepatitis and to encourage and support member states, donors and international organisations to do the same.

World Health Organization (WHO)

- The WHO has undertaken several activities in this area since identifying HBV as 'a primary candidate for elimination or eradication' in 1998.[h] For example, setting targets for the exclusive use of auto-disable syringes for all immunisation injections by 2003 and the reduction of chronic HBV virus infection rates to less than 2% among five-year-old children in the western Pacific region by 2012. In November 2008 WHO's Strategic Advisory Group of Experts on immunisation recommended that regions and countries develop goals for hepatitis B control.
- In 2009 WHO released a revised position statement for HBV vaccine use, which specifically advises targeting most-at-risk populations, including people who inject drugs, and recommends the offer of free or low-cost HBV vaccination to be made routinely available in health settings, such as NSPs and OST programmes.[105] In late 2009 the Regional Committee for the Eastern Mediterranean adopted a resolution calling for harm reduction, among other measures, for the prevention of hepatitis.[106]

WHO, UNODC and UNAIDS

- Vaccination, prevention and treatment of viral hepatitis are among the nine interventions recommended in guidelines for scaling up towards universal access.[87] The package of interventions has been endorsed within various multilateral fora and enshrined in the political declaration and plan of action of the Commission on Narcotic Drugs (the governing body of UNODC)[107] and an ECOSOC resolution in 2009.[108]

UNAIDS Programme Coordinating Board (PCB)

- In June 2009, at the 24th PCB meeting, the board called on 'UNAIDS to intensify its assistance to, and work with, all groups of civil society, including those affected by drug use and those that provide services to people who use drugs, aimed at advocating for anti-stigmatizing, anti-discriminating, and evidence-based approaches to HIV and Hepatitis C Virus (HCV) epidemics at national, regional and global levels'.[109]

Civil society campaigns for access to HCV treatment

- Civil-society-led advocacy campaigns have been driven by escalating concern at the numbers of people who inject drugs and people living with HIV co-infected with HCV. For example, the Asian Network of People Who Use Drugs (ANPUD), along with its allies and partners, plans to launch a regional HCV campaign in 2010. The campaign seeks the recognition by donors and governments of the need to include HCV treatment in Round 10 proposals to the Global Fund, in addition to the incorporation of HCV testing alongside HIV testing and price negotiations at national level for HCV treatment drugs, which are currently prohibitively expensive.[110]
- In addition, recent efforts have begun to investigate the possibility of pegylated interferon being included within UNITAID's patent pool, an initiative that aims to provide people in low- and middle-income countries with increased access to more appropriate and lower priced medicines.[109]

g At the time of writing, implementation of this resolution and its monitoring are still in progress.
h At the Conference Regarding Disease Elimination and Eradication as Public Health Strategies in Georgia, US.

The way forward

The growing body of evidence and the increased morbidity and mortality due to viral hepatitis and HIV co-infections result in an urgent need to support the scale-up and implementation of a broad range of interventions to prevent and manage these co-infections among most-at-risk populations, particularly people who inject drugs.

The following actions are necessary for an effective response to viral hepatitis among people who inject drugs, people living with HIV and the wider population. Many of the interventions outlined below have long been advocated for in the HIV response.

Strategic information

- Improve surveillance of viral hepatitis B and C and HIV among most-at-risk populations, disaggregating data by age, gender and risk behaviours.

Health systems

- Increase awareness of viral hepatitis among health care workers.
- Decrease stigma towards and increase the willingness of health care workers to provide services to most-at-risk populations by addressing their beliefs about and attitudes towards these populations.
- Build the capacity of health care workers working with people who use drugs to provide viral hepatitis and HIV prevention, testing and diagnosis and treatment services.
- Ensure coordination of viral hepatitis services with HIV, TB and mental health and drug dependence treatment services for integrated treatment and care.
- Ensure meaningful involvement of drug user organisations in the design, implementation and monitoring and evaluation of prevention, treatment and care services.

Prevention

- Increase knowledge about viral hepatitis and HIV transmission, the means of prevention and treatment options among people who use drugs.
- Increase the level of hepatitis A[i] and hepatitis B vaccination among most-at-risk populations.
- Advocate for and implement a comprehensive package of harm reduction interventions, including radically increasing coverage rates[87] for NSPs and OST in communities and closed settings, with the addition of other more specific interventions for HCV, such as reduction of alcohol consumption and the provision of other injecting paraphernalia such as tourniquets, filters and spoons.

Treatment and care

- Increase the availability of viral hepatitis testing, particularly in conjunction with HIV treatment programmes working with people who use drugs.
- Ensure that HBV/HIV co-infected individuals taking ARV therapy are on a regimen with more than one ARV with anti-HBV activity (e.g. lamivudine [3TC] or emtricitabine [FTC] plus tenofovir [TDV]).
- Ensure that people who inject drugs and are living with HIV are screened for HCV prior to initiating ART and that they are monitored for hepatotoxicity.
- Advocate for and expand access to HCV therapy for people who inject drugs, people living with HIV and the wider population.
- Advocate for research into less costly and easier to administer drugs.
- Ensure that current drug use is not used as a contraindication for access to ART or viral hepatitis therapy.

i In developed countries with low endemicity of hepatitis A and with high rates of disease in specific high-risk populations, vaccination of these populations against hepatitis A may be recommended. The high-risk groups include people who inject drugs.

References

1. Jürgens R (2008) *Nothing About Us Without Us: Greater, Meaningful Involvement of People Who Use Drugs: A Public Health, Ethical, and Human Rights Imperative*. Toronto: Canadian HIV/AIDS Legal Network, International HIV/AIDS Alliance, Open Society Institute.
2. WHO Executive Board (2009) Viral hepatitis. Report by the Secretariat. EB126/15, 12 November 2009: http://apps.who.int/gb/ebwha/pdf_files/EB126/B126_15-en.pdf (last accessed 1 April 2010).
3. Shepard CW et al. (2006) Hepatitis B virus infection: Epidemiology and vaccination. *Epidemiologic Reviews* 28: 112–25.
4. Custer B et al. (2004) Global epidemiology of hepatitis B virus. *Journal of Clinical Gastroenterology* 38(10 Suppl 3): S158–68.
5. WHO (2009) HBV vaccines: WHO position paper. *Weekly Epidemiological Record* 84: 405–20.
6. Hagan H et al. (2001) Sharing of drug preparation equipment as a risk factor for hepatitis C. *American Journal of Public Health* 91(1): 42–6.
7. Koziel MJ and Peters MG (2007) Viral hepatitis in HIV infection. *New England Journal of Medicine* 356(14): 1445–54.
8. Kermode M (2004) Unsafe injections in low-income country health settings: Need for injection safety promotion to prevent the spread of blood-borne viruses. *Health Promotion International* 19(1): 95–103.
9. Simonsen L et al. (1999) Unsafe injections in the developing world and transmission of blood-borne pathogens: A review. *Bulletin of the World Health Organization* 77(10): 789–800.
10. Hagan H et al. (2008) Meta-regression of hepatitis C virus infection in relation to time since onset of illicit drug injection: The influence of time and place. *American Journal of Epidemiology* 168(10): 1099–109
11. Scheinmann R et al. (2007) Non-injection drug use and hepatitis C virus: A systematic review. *Drug and Alcohol Dependence* 89(1): 1–12.
12. Vandelli C et al. (2004) Lack of evidence of sexual transmission of hepatitis C among monogamous couples: Results of a 10-year prospective follow-up study. *American Journal of Gastroenterolology* 99(5): 855–9.
13. Gambotti L et al. (2005) Acute hepatitis C infection in HIV positive men who have sex with men in Paris, France, 2001–2004. *Euro Surveillance* 10(5): 115–7.
14. Browne R et al. (2004) Increased numbers of acute hepatitis C infections in HIV positive homosexual men. Is sexual transmission feeding the increase? *Sexually Transmitted Infections* 80(4): 326–7.
15. Terrault NA (2005) Sex and hepatitis C. *American Journal of Gastroenterolology* 100(4): 825–6.
16. Urbanus AT et al. (2009) Hepatitis C virus infections among HIV-infected men who have sex with men: An expanding epidemic. *Aids* 23(12): F1–7.
17. Jin F et al. (2010) Prevalence, incidence and risk factors for hepatitis C in homosexual men: Data from two cohorts of HIV negative and HIV positive men in Sydney, Australia. *Sexually Transmitted Infections* 86: 25–8.
18. WHO (2007) *Comprehensive Review of the Effectiveness of Interventions to Address HIV in Prisons*. Evidence for Action Technical Paper. Geneva: WHO.
19. Macalino GE et al. (2004) Prevalence and incidence of HIV, hepatitis B virus, and hepatitis C virus infections among males in Rhode Island prisons. *American Journal of Public Health* 94(7): 1218–23.
20. Mathers B et al. (2008) for the 2007 Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
21. Cook C and Kanaef N (2008) *The Global State of Harm Reduction: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics*. London: IHRA.
22. Walsh N (2009) *Scoping Document: A Review of Viral Hepatitis and HIV Co-infection Among Injecting Drug Users and Assessment of Priorities for Future Activities*. Geneva: WHO.
23. Rhodes T et al. (2005) Hepatitis C virus infection, HIV co-infection, and associated risk among injecting drug users in Togliatti, Russia. *International Journal of STD and AIDS* 16(11): 749–54.
24. Rhodes T et al. (2006) Prevalence of HIV, hepatitis C and syphilis among injecting drug users in Russia: A multi-city study. *Addiction* 101(2): 252–66.
25. Gyarmathy VA et al. (2009) Correlates of unsafe equipment sharing among injecting drug users in St. Petersburg, Russia. *European Addiction Research* 15(3): 163–70.
26. Bobkova M et al. (1998) Prevalence of some viral infections among injecting drug users in Russia. 12th International Conference on AIDS, Geneva, June.
27. Karapetyan AF et al. (2002) Syphilis among intravenous drug-using population: Epidemiological situation in St Petersburg, Russia. *International Journal of STD and AIDS* 13(9): 618–23.
28. Marchesini AM et al. (2007) Hepatitis B and C among injecting drug users living with HIV in Sao Paulo, Brazil. *Revista de Saude Publica* 41(Suppl. 2): 57–63.
29. Oliveira ML et al. (2009) Epidemiological and genetic analyses of Hepatitis C virus transmission among young/short- and long-term injecting drug users from Rio de Janeiro, Brazil. *Journal of Clinical Virology* 44(3): 200–6.
30. Caiaffa WT et al. (2002) Seroprevalences of HIV, HCV, HBV and HTLVI/II among injecting drug users (IDU) from northeast to south in Brazil: The AjUDE-Brasil II Project. 14th International Conference on AIDS, Barcelona, July.
31. Oliveira ML et al. (2006) "The first shot": The context of first injection of illicit drugs, ongoing injecting practices, and hepatitis C infection in Rio de Janeiro, Brazil. *Cadernos de Saude Publica* 22(4): 861–70.
32. Oliveira SA et al. (2005) A window of opportunity: Declining rates of hepatitis B virus infection among injection drug users in Rio de Janeiro, and prospects for targeted hepatitis B vaccination. *Revista Panamericana de Salud Publica* 18(4/5): 271–7.
33. Oliveira ML et al. (1999) Prevalence and risk factors for HBV, HCV and HDV infections among injecting drug users from Rio de Janeiro, Brazil. *Brazilian Journal of Medical and Biological Research* 32(9): 1107–14.

34. Amon J et al. (2008) Prevalence of hepatitis C virus infection among injection drug users in the United States, 1994–2004. *Clinical Infectious Diseases* 46(12): 1852–8.
35. Weinbaum CM et al. (2008) Recommendations for identification and public health management of persons with chronic hepatitis B virus infection. *MMWR Recommendations and Reports* 57(RR–8): 1–20.
36. Xia X et al. (2008) Epidemiology of hepatitis C virus infection among injection drug users in China: Systematic review and meta-analysis. *Public Health* 122(10): 990–1003.
37. Li JR et al. (2007) Study on the blood-borne virus co-infection and T lymphocyte subset among intravenous drug users. *World Journal of Gastroenterology* 13(16): 2357–62.
38. Ruan Y et al. (2007) Incidence of HIV, hepatitis C and hepatitis B viruses among injection drug users in southwestern China: A 3-year follow-up study. *AIDS* 21(Suppl. 8): S39–46.
39. Tan Y et al. (2008) Molecular epidemiology of HCV monoinfection and HIV/HCV coinfection in injection drug users in Liuzhou, southern China. *PLoS One* 3(10): e3608.
40. Dumchev KV et al. (2009) HIV and hepatitis C virus infections among hanka injection drug users in central Ukraine: A cross-sectional survey. *Harm Reduction Journal* 6: 23.
41. Sergeyeva TA et al. (2002) Viral hepatitis B and C at HIV-infected in Ukraine: Seroprevalence of markers. 14th International Conference on AIDS, Barcelona, July.
42. Kyrychenko PD (2004) Seroprevalence of HIV and HCV markers among injection drug users seeking medical care. 15th International Conference on AIDS, Bangkok, July.
43. EHRN (2007) *Hepatitis C among Injecting Drug Users in the New EU Member States and Neighboring Countries: Situation, Guidelines and Recommendations*. Vilnius: European Harm Reduction Network.
44. Kurpita V et al. (2007) Hepatitis B/C and HIV prevalence in injecting drug users in Ukraine. International Conference on the Reduction of Drug Related Harm, Warsaw.
45. Aceijas C and Rhodes T (2007) Global estimates of prevalence of HCV infection among injecting drug users. *International Journal of Drug Policy* 18(5): 352–8.
46. Taketa K et al. (2003) Differential seroprevalences of hepatitis C virus, hepatitis B virus and human immunodeficiency virus among intravenous drug users, commercial sex workers and patients with sexually transmitted diseases in Chiang Mai, Thailand. *Hepatology Research* 27(1): 6–12.
47. Jittiwutikarn J et al. (2006) Hepatitis C infection among drug users in northern Thailand. *American Journal of Tropical Medicine and Hygiene* 74(6): 1111–6.
48. Hansurabhanon T et al. (2002) Infection with hepatitis C virus among intravenous-drug users: Prevalence, genotypes and risk-factor-associated behaviour patterns in Thailand. *Annals of Tropical Medicine and Parasitology* 96(6): 615–25.
49. Thaikruea L et al. (2004) Risk factors for hepatitis C virus infection among blood donors in northern Thailand. *Transfusion* 44(10): 1433–40.
50. Sirinak C et al. (2008) Viral hepatitis and HIV-associated tuberculosis: Risk factors and TB treatment outcomes in Thailand. *BMC Public Health* 8: 245.
51. Odek-Ogunde M et al. (2004) Seroprevalence of HIV, HBC and HCV in injecting drug users in Nairobi, Kenya: World Health Organization drug injecting study phase II findings. 15th International AIDS Conference, Bangkok, July.
52. Muasya T et al. (2008) Prevalence of hepatitis C virus and its genotypes among a cohort of drug users in Kenya. *East African Medical Journal* 85(7): 318–25.
53. Quan VM et al. (2009) Risks for HIV, HBV, and HCV infections among male injection drug users in northern Vietnam: A case-control study. *AIDS Care* 21(1): 7–16.
54. Clatts MC et al. (2009) Prevalence and incidence of HCV infection among Vietnam heroin users with recent onset of injection. *Journal of Urban Health* 87(2): 278–91.
55. EMCDDA (2008) *Statistical Bulletin 2008*. Lisbon: European Monitoring Centre for Drugs and Drug Addiction.
56. Esteban JI et al. (2008) The changing epidemiology of hepatitis C virus infection in Europe. *Journal of Hepatology* 48(1): 148–62.
57. Da Villa G and Sepe A (1999) Immunization programme against hepatitis B virus infection in Italy: Cost-effectiveness. *Vaccine* 17(13/14): 1734–8.
58. Naoumov NV (1999) Hepatitis C virus infection in Eastern Europe. *Journal of Hepatology* 31(Suppl. 1): 84–7.
59. Duraisamy G et al. (1993) Prevalence of hepatitis C virus antibodies in blood donors in Malaysia. *Medical Journal of Malaysia* 48(3): 313–6.
60. Darmadi S et al. (1996) Hepatitis C virus infection-associated markers in sera from blood donors in Surabaya, Indonesia. *Microbiology and Immunology* 40(5): 401–5.
61. Aceijas C et al. (2004) Global overview of injecting drug use and HIV infection among injecting drug users. *AIDS* 18(17): 2295–303.
62. Kao JH and Chen DS (2000) Transmission of hepatitis C virus in Asia: Past and present perspectives. *Journal of Gastroenterology and Hepatology* 15 (Suppl.): E91–6.
63. Walsh N et al. (2007) Recognition of hepatitis C virus coinfection in HIV-positive injecting drug users in Asia. *Journal of Acquired Immune Deficiency Syndromes* 45(3): 363–5.
64. Garten RJ et al. (2005) Coinfection with HIV and hepatitis C virus among injection drug users in southern China. *Clinical Infectious Diseases* 41(Suppl. 1): S18–24.
65. Hauri AM et al. (2004) The global burden of disease attributable to contaminated injections given in health care settings. *International Journal of STD and AIDS* 15(1): 7–16.
66. Shepard CW et al. (2005) Global epidemiology of hepatitis C virus infection. *Lancet Infectious Diseases* 5(9): 558–67.
67. Frank C et al. (2000) The role of parenteral antischistosomal therapy in the spread of hepatitis C virus in Egypt. *Lancet* 355(9207): 887–91.
68. Coursaget P et al. (1990) Prevalence of hepatitis C virus infection in Africa: Anti-HCV antibodies in the general population and in patients suffering from cirrhosis or primary liver cancer. *Research in Virology* 141(4): 449–54.
69. Madhava V et al. (2002) Epidemiology of chronic hepatitis C virus infection in Sub-Saharan Africa. *Lancet Infectious Diseases* 2(5): 293–302.
70. Gisselquist D et al. (2002) HIV infections in sub-Saharan Africa not explained by sexual or vertical transmission. *International Journal of STD and AIDS* 13(10): 657–66.
71. Drucker E et al. (2001) The injection century: Massive unsterile injections and the emergence of human pathogens. *Lancet* 358(9297): 1989–92.
72. Kiire CF (1996) The epidemiology and prophylaxis of hepatitis B in Sub-Saharan Africa: A view from tropical and subtropical Africa. *Gut* 38(Suppl. 2): S5–12.
73. Hoffmann CJ and Thio CL (2007) Clinical implications of HIV and hepatitis B co-infection in Asia and Africa. *Lancet Infectious Diseases* 7(6): 402–9.
74. Armstrong GL et al. (2006) The prevalence of hepatitis C virus infection in the United States, 1999 through 2002. *Annals of Internal Medicine* 144(10): 705–14.
75. PHAC (2009) *Epidemiology of Acute Hepatitis C Infection in Canada: Results from the Enhanced Hepatitis Strain Surveillance System (EHSSS)*. Ottawa: Centre for Communicable Disease and Infection Control, Public Health Agency of Canada.
76. CDC (2002) Viral hepatitis and injection drug users. Fact sheet. Atlanta, GA: Centers for Disease Control and Prevention.
77. McQuillan GM et al. (1999) Prevalence of hepatitis B virus infection in the United States: The National Health and Nutrition Examination Surveys, 1976 through 1994. *American Journal of Public Health* 89(1): 14–8.
78. Franks A et al. (1989) Hepatitis B virus infection among children born in the United States to Southeast Asian refugees. *New England Journal of Medicine* 321(19): 1301–5.
79. Schreeder MT et al. (1983) Prevalence of hepatitis B in selected Alaskan Eskimo villages. *American Journal of Epidemiology* 118(4): 543–9.
80. Zhang J et al. (2001) *Viral Hepatitis and Emerging Bloodborne Pathogens in Canada: Hepatitis B in Canada. Canadian Communicable Disease Report.* Ottawa: Public Health Agency of Canada.
81. Dehesa-Violante M and Nunez-Nateras R (2007) Epidemiology of hepatitis virus B and C. *Archives of Medical Research* 38(6): 606–11.
82. Torres JR and Machado IV (1994) Special aspects of hepatitis B virus and delta virus infection in Latin America. *Infectious Disease Clinics of North America* 8(1): 13–27.
83. Weissenbacher M et al. (2003) High seroprevalence of bloodborne viruses among street-recruited injection drug users from Buenos Aires, Argentina. *Clinical Infectious Diseases* 37(Suppl. 5): S348–52.
84. WHO (2005) *Global database on blood safety. Report 2004–2005*. Geneva: WHO.
85. Namgyal P (2003) Impact of hepatitis B immunization, Europe and worldwide. *Journal of Hepatology* 39: 77–82.
86. See WHO/IVB 2008 database: www.who.int/immunization_monitoring/data/year_vaccine_introduction.xls (last accessed 1 April 2010) and 2009 global and regional immunization profile. Geneva: WHO Vaccine-Preventable Diseases Monitoring System.
87. WHO, UNODC, UNAIDS (2009) *Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users*. Geneva: WHO.
88. Vickerman P et al. (2007) Modelling the impact on hepatitis C transmission of reducing syringe sharing: London case study. *International Journal of Epidemiology* 36(2): 396–405.
89. Thio CL et al. (2002) HIV-1, hepatitis B virus, and risk of liver-related mortality in the multicenter cohort study (MACS). *Lancet* 360(9349): 1921–6.
90. Hoffmann CJ et al. (2009) Hepatitis B and long-term HIV outcomes in coinfected HAART recipients. *AIDS* 23(14): 1881–9.
91. WHO (2006) *Antiretroviral Therapy for HIV Infection in Adults and Adolescents: Recommendations for a Public Health Approach*. Geneva: WHO.
92. WHO EURO (2004) *Management of Hepatitis C and HIV Coinfection: Clinical Protocol for the WHO European Region*. Geneva: WHO.
93. WHO (2009) *Rapid Advice: Antiretroviral Therapy for HIV Infection in Adults and Adolescents*. Geneva: WHO.
94. Strader D et al. (2004) Diagnosis, management, and treatment of hepatitis C. *Hepatology* 39(4): 1147–71.
95. Mohsen AH et al. (2003) Impact of human immunodeficiency virus (HIV) infection on the progression of liver fibrosis in hepatitis C virus infected patients. *Gut* 52: 1035–40.
96. Smit C et al. (2008) Risk of hepatitis-related mortality increased among hepatitis C virus/HIV-coinfected drug users compared with drug users infected only with hepatitis C virus: A 20-year prospective study. *Journal of Acquired Immune Deficiency Syndromes* 47: 221–5.
97. Chen T-Y et al. (2009) Meta-analysis: Increased mortality associated with hepatitis C in HIV-infected persons is unrelated to HIV disease progression. *Clinical Infectious Diseases* 49(10): 1605–15.
98. Carrat F et al. (2004) Pegylated interferon alfa-2b vs standard interferon alfa-2b, plus ribavirin, for chronic hepatitis C in HIV-infected patients: A randomized controlled trial. *JAMA* 292: 2839–48.
99. Torriani FJ et al. (2004) Peginterferon alfa-2a plus ribavirin for chronic hepatitis C virus infection in HIV-infected patients. *New England Journal of Medicine* 351: 438–50.
100. Chung RT et al. (2004) Peginterferon alfa-2a plus ribavirin versus interferon alfa-2a plus ribavirin for chronic hepatitis C in HIV-coinfected persons. *New England Journal of Medicine* 351: 451–9.
101. Laguno M et al. (2004) Peginterferon alfa-2b plus ribavirin compared with interferon alfa-2b plus ribavirin for treatment of HIV/HCV co-infected patients. *AIDS* 18: F27–36.
102. Mocroft A et al. (2005) Are specific antiretrovirals associated with an increased risk of discontinuation due to toxicities or patient/physician choice in patients with hepatitis C virus coinfection? *Antiviral Therapy* 10(7): 779–90.
103. WHO (2009) WHO 62nd World Health Assembly A62/22. Provisional agenda item 12.17: Viral hepatitis, 16 April.
104. WHO (2009) 126th Session EB126.R16. Agenda item 4.12: Viral hepatitis, 23 January.
105. WHO (2009) Hepatitis B vaccines: WHO position paper. *WHO Weekly Epidemiological Record* 40(84): 405–20.
106. WHO Resolution Regional Committee for the Eastern Mediterranean (2009) 56th Session. Agenda item 6(a) EM/RC56/R.5: The growing threats of hepatitis B and C in the Eastern Mediterranean Region: A call for action.
107. Economic and Social Council Official Records (2009) Supplement No. 8 UN Commission on Narcotic Drugs Report on the Fifty-Second Session (14 March 2008 and 11–20 March 2009): p. 119.
108. Economic and Social Council Resolution E/2009/L.23 adopted by the Council on 24 July 2009: Joint UN Programme on Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (UNAIDS).
109. 24th Meeting of the UNAIDS Programme Coordinating Board, Geneva, Switzerland, 22 to 24 June 2009. Decisions, recommendations and conclusions. Agenda item 3: HIV prevention among injecting drug users.
110. Tanguay P (2010) Global State of Harm Reduction information response.

3.2: Enhancing synergy: Responding to tuberculosis epidemic among people who use drugs

About the authors:

Dr Christian Gunneberg and Dr Haileyesus Getahun work in the Stop TB Department at the headquarters of the World Health Organization in Geneva, Switzerland.

The authors would like to thank Annette Verster for her input into this chapter.

Introduction

Tuberculosis (TB) is a major infectious disease responsible for over one million global adult deaths each year. These fatalities are preventable as TB is almost always curable if diagnosed and treated early. The estimated 15.9 million people who inject drugs around the world have a higher risk of developing TB than the general population. For the estimated 3 million people who inject drugs and are living with HIV, the risk is even higher. Prison populations, often including significant numbers of people who use drugs, are also at increased risk of developing TB. UN agencies recommend including TB prevention, diagnosis and treatment as part of an integrated and comprehensive harm reduction package inside and outside prisons. Attainment of international HIV/AIDS targets such as universal access and the millennium development goals will require the provision of TB services to marginalised groups such as people who inject drugs and prisoners.

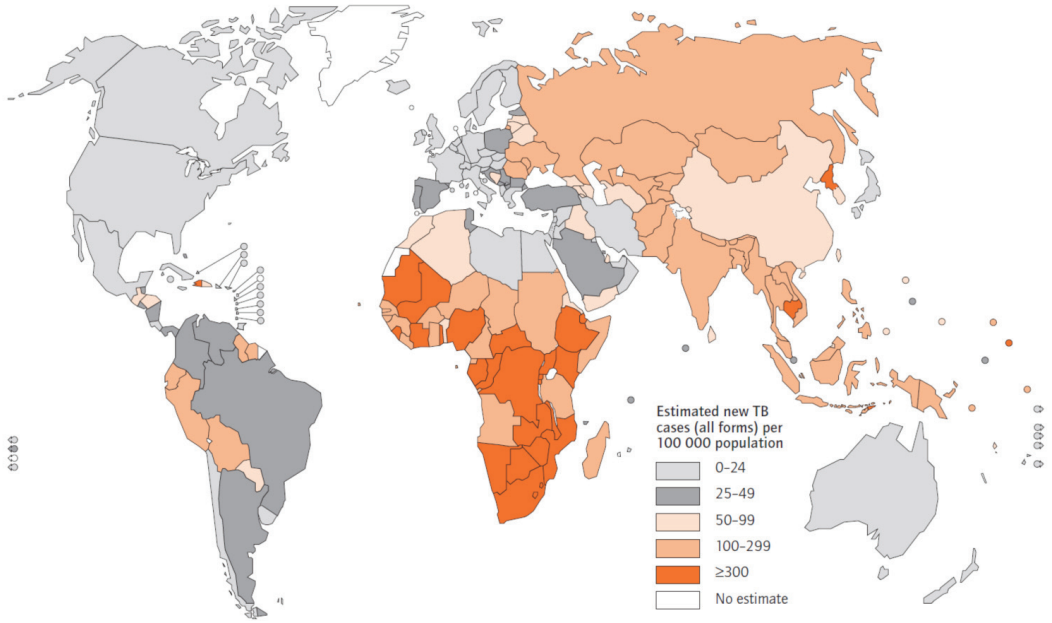
This chapter reviews the epidemiology of TB and the TB and HIV co-infection among drug-using populations and explores the international response in policy and implementation to address these epidemics. While TB services are being integrated into wider efforts to scale up HIV and harm reduction services in some countries, these are few and not proportionate to the scale of the problem. Access to harm reduction interventions and general health care for people who inject drugs remains low in most countries. For prison populations, access to these services is even lower. There is an urgent need for increased collaboration between TB, HIV, drug treatment and harm reduction services and health services in the criminal justice system in order to address this issue.

TB and HIV co-infection among people who use drugs

TB is a mycobacterial infectious disease spread from person to person by droplet transmission through the lungs (e.g. when coughing). Transmission does not result in disease in nine out of ten people who are infected, so that around one-third of the global population is infected with 'sleeping' or latent TB and for most of them nothing else happens. Only one in ten people with latent infection will develop TB disease during their lifetime. However, among people with compromised immune systems, such as those living with HIV, one in ten TB infections each year will result in development of the disease.

TB disease affects and destroys mainly the lungs, but may also spread to other parts of the body such as lymph nodes, bones and kidneys. Symptoms usually develop gradually during the course of the disease and include coughing (for more than two weeks), fever, night sweats and weight loss. In approximately half of the cases (less if HIV co-infected), TB can be diagnosed by examining sputum stained with a dye under a microscope, a test that has been used for over a century. Where sputum examination is negative, diagnosis is more difficult, requiring a clinician's decision to treat based on clinical signs and symptoms, aided where available by culture of sputum or other tissues, X-rays and other tests. Line-probe assays and LED microscopy are exciting recent developments with the potential to increase early diagnoses from sputum examinations. However, a diagnostic point of care test that reliably distinguishes TB infection from disease, and diagnoses this disease correctly every time, remains elusive.

Map 3.2.1: Estimated TB incidence rates in general population per 100,000, 2008



Accurate diagnosis and treatment of TB is literally a matter of life or death. If left untreated, over half of people with TB will die within two years and one-third will develop chronic debilitating symptoms. For people living with HIV, the death toll rises to over 80% within a year. HIV-related TB is more difficult to diagnose, as immuno-suppression also suppresses symptoms and signs. Only around one-third of HIV-positive TB patients can be diagnosed by sputum microscopy, making the role of a symptom-based clinical diagnosis even more important in the case of people living with HIV. Actively screening for TB, early TB treatment or TB prevention using isoniazid preventive therapy (IPT) and infection control measures, in addition to the early provision of antiretroviral therapy (ART) and co-trimoxazole preventive treatment (CPT), are therefore lifesaving interventions among people living with HIV.

The treatment of drug-sensitive TB involves four drugs, usually given in combination tablets for a period of up to six months, with patient support from health workers, community or family to ensure treatment adherence. Drug-resistant tuberculosis requires a two-year treatment with more expensive drugs, which also cause more side effects.

The extent of the TB epidemic

Worldwide, more than nine million people develop TB every year. In 2008 the estimated global TB incidence rate was 139 per 100,000 population, which equates to 9.4 million (range: 8.9–9.9 million) new TB cases.[1 2]

The TB epidemic increased during the 1990s and has only recently peaked. The 2008 figures show an 11% and 40% increase in TB incidence rates and TB cases respectively in comparison with 1990 estimates. This global increase in rates was largely the result of increases in the Sub-Saharan African and Europeana regions and was mainly due to the HIV epidemic. The HIV epidemic in Europe has been primarily driven by injecting drug use. In Sub-Saharan Africa, mirroring the HIV epidemic, TB incidence and death rates have doubled and the numbers of TB cases and deaths have tripled in comparison with estimated figures in 1990. Globally, incidence rates have been declining slowly since 2004, by less than 1% annually, although the number of TB cases is still rising as a result of increases in population size. More than half (55%) of the estimated number of TB cases in 2008 were in Asia, followed by Africa (30%).
Alongside HIV, TB is the leading cause of adult death from infectious disease. In 2008 the number of deaths estimated to have occurred from TB without HIV was 1.3 million and a further 520,000 TB deaths were related to HIV.[1] TB causes one-quarter of the 2.1 million annual deaths among the 33.4 million people living with HIV.[1 3]

TB rates are high among people who inject drugs, a situation primarily linked to the high rates of HIV in this group. However, drug use was identified as a risk factor for TB even before the HIV epidemic.

TB and people who use drugs

Although there is a lack of global data, the available research suggests that TB presents a major challenge for people who use drugs. Studies among HIV-negative drug users from the United States and Europe suggest a rate of TB between six and ten times that of the general population. For example, in a study from 1973 (prior to the impact of the HIV epidemic) carried out in New York in twenty methadone treatment centres, researchers found a TB disease prevalence rate among drug users of 1,372 per 100,000 citywide against a general population rate of 86.7 per 100,000.[4]
In Amsterdam some fifteen years later, a study found that the incidence of TB in HIV-negative drug users was 180 per 100,000, six times higher than in the overall Amsterdam population in the same period.[5]

Both injecting and non-injecting drug use is associated with elevated TB infection rates. Approximately half the people who inject drugs (both those living with HIV and those not) in a Spanish study tested positive for TB infection.[6] A study from the US also showed crack cocaine users to be at an equally high risk for TB

a This refers to the European region as defined by the WHO, which corresponds to Europe and Eurasia in this report.

Table 3.2.1: Summary of data from ten countries with 70% of global total of injecting drug users (IDU) living with HIV

Name of country	Number of people who inject drugs[32]	HIV prevalence among people who inject drugs[32]	Number of IDU living with HIV	Percentage of global total number of IDUs living with HIV	Proportion of IDUs living with HCV	Incident TB rate per 100,000
Russia	1,825,000	37.15%	677,988	22.6%	68-95%	110
Brazil	800,000	48%	384,000	12.8%	40-70%	48
US	1,857,354	15.57%	289,190	9.6%	35%	4
China	2,350,000	12.3%	289,050	9.6%	61%	98
Ukraine	375,000	41.8%	156,750	5.2%	70-90%	102
Indonesia	219,130	42.5%	93,130	3.1%	60-98%	228
Thailand	160,528	42.5%	68,224	2.3%	90%	142
Kenya	130,748	42.9%	56,091	1.9%	42%	353
Viet Nam	135,305	33.8%	45,733	1.5%	10-81%	171
Italy	326,000	12.1%	39,446	1.3%	42-90%	7
TOTAL	**8,179,065**		**2,099,602**	**70%**		

infection as people who inject drugs.[7] Rates of TB infection were found to be similar among HIV-positive and HIV-negative injecting drug users in a two-year prospective study. The rate of development of TB in HIV-negative injecting drug users also appears to be higher than the rate of TB in the general population.[8]

TB prevalence rates vary greatly between countries and this variation is likely to be reflected in TB rates among drug using populations. Figure 3.2.1 shows the national variations in rates of TB in 2007, with a twentyfold difference in rates between the US (4/100,000) and China (98/100,000), both countries with sizable numbers of people who inject drugs (see Table 3.2.1).[9]

Using the mid-point estimates of data gathered by the Reference Group to the UN on HIV and Injecting Drug Use,[10] ten countries (see Table 3.2.1) with almost half of the global number of people who inject drugs, also have over two-thirds (70%) of the global estimated numbers of injecting drug users living with HIV. The overall TB rate in the people who inject drugs in these countries would be somewhere between 700 and 1,220 per 100,000, assuming that TB rates in HIV positive people are twenty-five times higher than the background population rates, and taking the rates of HIV-negative drug users as between one and ten times the background population rates of TB. Overall there would be between 54,000 and 90,000 TB cases annually among the seven million drug users in these countries. The general population TB rates in these countries vary between 4 and 353 per 100,000.[11] More data are needed on TB rates among drug users in these countries, especially those with high rates of TB, in order to improve the estimation of the burden of TB disease in drug users.

Several factors are likely to increase the vulnerability to TB infection of people who inject drugs, including high rates of incarceration, homelessness and poverty. The rates of TB disease in prisons can be more than thirty times higher than those outside prisons.[13] Poor nutrition associated with heavy drug use is also likely to add to susceptibility to TB. Although all these factors are important contributors to the overall rates of TB in drug users, it is the presence of HIV that is the most important contributing factor to the TB epidemic among this population.

TB and HIV co-infection among people who inject drugs

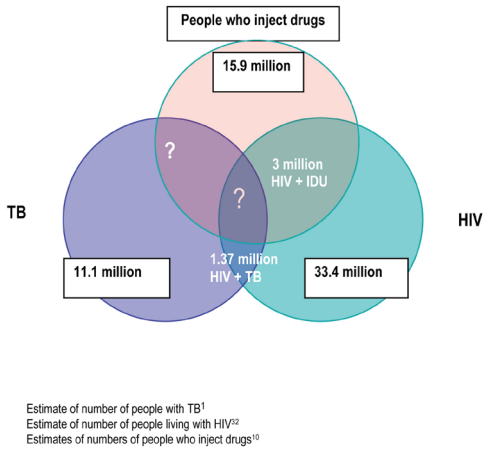
TB prevalence rates among people living with HIV are twenty to thirty times higher than among people who are HIV-negative. This is due to the increased risk of progression from TB infection to TB disease: from one in ten during a lifetime in HIV-negative people to one in ten annually for people living with HIV.

There is some evidence that the relative risk of TB may be elevated among HIV-positive drug users compared with the general population. The relative risk of developing TB in people living with HIV (as compared with the general population) in countries where HIV infection is primarily linked to drug use is 27.6 versus 20 in those countries with generalised epidemics.[1] This is most likely because vulnerable populations, such as people who use drugs, have TB exposure factors in addition to HIV that increase their level of TB, relative to the country population they come from.

In 2008 there were an estimated 1.37 million new cases of TB and 520,000 TB deaths among all people living with HIV.[1] There are no data on what proportion of this is related to drug use. However, if the rate of TB among people living with HIV who inject drugs is assumed to be the same as that among other people living with HIV, it would suggest that perhaps as many as 140,000 cases of TB (5 per 100 injecting drug users) with 52,000 deaths (2 per 100 people who inject drugs) occurring annually among the more than three million people living with HIV who inject drugs.

Projecting from what is known about the estimated interactions between the TB and HIV epidemics and their relationship with injecting drug use, the gaps in knowledge are in the estimated numbers of drug users who have TB and HIV-related TB (see Figure 3.2.2).

Figure 3.2.2: The interaction between TB, HIV and injecting drug use



Estimate of number of people with TB[1]
Estimate of number of people living with HIV[32]
Estimates of numbers of people who inject drugs[10]

TB is a leading cause of death among injecting drug users living with HIV. Globally, approximately 520,000 people died from HIV-related TB in 2008, which was nearly one in three TB deaths (29%). TB also contributed to 26% of the estimated HIV deaths occurring globally. Both all-cause and TB-associated mortality rates are several-fold higher among injecting drug users living with HIV than in other people living with HIV.[14 15]

Data from Ukraine, where the HIV epidemic is largely among people who use drugs, suggest high death rates from HIV due to TB. A retrospective study showed TB to be the leading cause of death among people living with HIV, accountable for approximately 58% of all causes of death in people living with HIV in Ukraine.[16] Reports from TB registers in Latin American countries, where much HIV-related TB is found among drug-using populations, show that 20% of TB patients living with HIV and undergoing treatment died. This rate was approximately five times higher than the rate of death in TB patients without HIV (4%) and occurred in countries with a comparatively high ART coverage among people living with HIV.[b]

Hepatitis C and TB

The majority of people who inject drugs are living with hepatitis C virus (HCV) (see Chapter 3.1 on viral hepatitis). In the nine countries that are home to half of all people who inject drugs, the prevalence of HCV is very high (see Table 3.2.1). It appears that over two-thirds of all people who inject drugs are living with HCV, regardless of their HIV status. The estimates of HCV prevalence among drug users living with HIV are even higher.[17]

Data on the proportion of people who inject drugs who have co-infection with HCV and TB are not available. However, the majority of people who inject drugs living with TB, regardless of their HIV status, will also have HCV. People co-infected with HCV should not be denied lifesaving TB treatment and ART, although more careful monitoring of hepatic side effects is needed during the treatment of TB and HIV and during concurrent treatment for HCV.[18]

b This information is derived from unpublished data from 2007 in the WHO Global Tuberculosis Database.

The threat of multidrug-resistant TB

Multidrug-resistant tuberculosis (MDR TB) is TB that has developed resistance to some or all drugs used in treatment, usually as a result of poor treatment in the past. Globally, approximately 500,000 cases are estimated to exist. Effective treatment of MDR TB takes longer and is more expensive than that of treatment-sensitive TB.

The evidence for increased risk of MDR TB in people who use drugs is indirect. There are no studies that have directly measured the prevalence of MDR TB in drug users. As mentioned above, there is a link between higher rates of MDR TB and prison populations. There is also a growing evidence base for the link between HIV and MDR TB, and this also applies to drug users with HIV.[19] Major outbreaks of MDR TB in congregate settings such as prisons or health institutions have occurred repeatedly, especially among people living with HIV.

Published literature over the last two decades suggest that institutional outbreaks of MDR TB primarily affect people living with HIV, with a significantly higher mortality rate and short survival period.[20 21] The outbreaks were largely linked to poor infection-control practices and occurred before the availability of ART.[19] However, the initiation of ART does not necessarily improve survival time, with mortality rates of over 80% within weeks of MDR TB detection.[22]

One hospital outbreak in Portugal in the 1990s was among drug users living with HIV.[23] Data from this outbreak showed that among the ninety-five cases of HIV-related MDR TB, most people died before the diagnosis could be established. Epidemiological data from DNA fingerprinting analysis supported the conclusion that the transmission of MDR TB occurred among injecting drug users living with HIV who were exposed to infectious TB cases on open wards in the HIV unit. Improved infection control measures on the HIV unit and the use of empirical therapy with six drugs, once patients were suspected to have TB, reduced the incidence of MDR TB from 42% of TB cases in 1996 to 11% in 1999.

People who use drugs need to have access to treatment for MDR TB. Places where drug users congregate, including prisons and health care settings for substitution therapy or drug treatment, need to implement airborne infection control measures in order to counteract the risk of person to person transmission of TB, including MDR TB.

Prisons and TB

The problems of TB and HIV among people who inject drugs are intensified by incarceration. There are between eight and ten million people in places of detention in the world. Because many people are detained for short periods of time, the actual numbers who pass through prisons and places of detention each year is many times higher. Detainees are often housed in overcrowded facilities with inadequate ventilation, hygiene and sanitation. The food that is provided can be unappealing and nutritionally inadequate. Health services may be weak or absent. The vast majority of prisoners and detainees around the world have no access to harm reduction measures or condoms, despite evidence that sex and drug use occur within these institutions across the globe. Such conditions are ripe for the outbreak of epidemic diseases, including TB and HIV (see Chapter 3.5 on prisons).

Much higher levels of active TB disease, thirty times or more, are reported within prisoner and detainee populations compared with those outside prisons.[24] Some prison programmes have found high levels of MDR TB, up to one-third of all cases.[25] A study from the Samara region in Russia reported TB rates of 37.3% in prison, twice as high as in the civilian population.[26] High rates of TB in prisons and places of detention are made worse by late diagnosis and inadequate treatment of infectious cases, due to lack of adherence or treatment support, high transfer rates of prisoners and gaps in continuity of care upon release. Prison health is often forgotten or given a low priority.

It needs to be remembered that the problem of TB and poor health of prisoners and detainees will not stay confined to prisons. Prison staff and visitors should be considered part of the prison population with respect to the transmission of infectious diseases such as TB. Prison health must be seen as a public health concern and health systems should be coordinated to ensure continuity and equivalence of care. This is most evident in the spread of MDR TB, an increasingly recognised threat to effective TB control.

The global policy response to TB

Since the early 1990s, the provision of high-quality Directly Observed Treatment Short-Course (DOTS) has been central to responding to TB epidemics around the world. This requires the provision of services for early detection and diagnosis of TB through quality-assured bacteriology, followed by standardised TB treatment with supervision and patient support, using an effective drug supply, with monitoring and evaluation, including treatment outcomes and impact measurements.

The Stop TB Strategy, published in 2006 by the WHO, lays down additional elements for a comprehensive framework for TB control, including the involvement of all care providers, empowering people living with TB and communities, the treatment of MDR TB and TB/HIV co-infection and addressing highly vulnerable groups such as prisoners and people who use drugs.[27]

The Global Plan to Stop TB, published by the Stop TB Partnership (a global and multisectoral alliance of partners fighting TB), provides a budgeted work plan and lays down targets and milestones to achieve the millennium development goals related to TB.[28] People who use drugs are one of the groups that may not be easily reached through routine TB services alone, and the high proportion of drug users living with HIV also need the TB/HIV services detailed in the policy for TB/HIV collaborative services.[29] This highlights the need for TB patients to be screened for HIV and for the provision of HIV services, including early co-trimoxazole and ART for those TB patients living with HIV. For people living with HIV, it recommends regular screening for TB, provision of IPT and infection control measures in all congregate settings and especially in health facilities treating people living with HIV.

WHO, UNAIDS and UNODC have identified the key elements of the harm reduction package and include TB as one of the key areas to be addressed.[30] The three agencies also recognised that the provision of services for TB and HIV among drug users required additional guidance and, in 2008, collectively launched policy guidelines for the integrated delivery of TB and HIV services for injecting and other drug users.[17] This guidance makes thirteen recommendations in support of improving integrated services, providing a package of care and overcoming barriers to its implementation (see Figure 3.2.3). The guidelines are intended for people providing services for the population of drug users who have the most problematic patterns of use and who have the greatest risk of HIV and TB. These are people who use opiates, cocaine or amphetamine-type stimulants in a dependent or harmful way, in particular those who inject.

The guidelines recommend that services should have a more coordinated response to the needs of people who use drugs. Services should provide access to prevention, treatment and care services at all entry points. This requires collaborative planning between HIV, TB, specialist drug services and the criminal justice system. In particular, health services should provide treatment adherence support for people who use drugs. Co-morbidities, such as HCV, should not be a barrier to TB and HIV treatment services. Prisoners living with HIV, TB or drug dependency need to have the same access to treatment and care as people outside prisons, as should drug users who are migrants, homeless or otherwise marginalised. In addition, continuity of care on transfer in and out of places of detention is essential.

The guidelines were launched at the International AIDS Conference in Mexico City in 2008 and are available in Russian, Chinese and Spanish. Since their launch, they have been deliberated on at global workshops involving activists, programme managers of TB/HIV, health in prison, harm reduction and drug treatment services from high-burden countries, and are informing the implementation of services locally.[17]

Figure 3.2.3: Recommendations from the policy guide for integrated TB and HIV services for injecting and other drug users

A Joint planning service providers

1. National local coordination body
2. Plans with roles and responsibilities and monitoring and evaluation
3. Human resources and training available
4. Support to operational research

B Package of care

5. TB infection control plans in care settings
6. Case finding protocols at services that people who use drugs attend
7. Treatment services for TB and HIV available
8. Isoniazid preventive therapy (IPT) available for TB prevention
9. HIV prevention available (harm reduction package)

C Overcoming barriers

10. Integrated services (link TB/HIV treatment with harm reduction)
11. Equivalence of care in prisons
12. Adherence support measures
13. Comorbidity not to be used to withhold treatment

TB services for people who use drugs

A total of 5.7 million incident TB cases were notified by national TB control programmes globally in 2008. This amounts to 62% of all estimated TB cases worldwide. These are being treated by national TB programmes using DOTS, with an average cure rate of 86%.[1] It is not known what proportion of people who use drugs globally have had TB diagnosed or treated successfully. There is evidence that drug users make poor use of general health services. US data suggest that a substantial proportion of injecting drug users living with HIV receive their HIV diagnosis late and have a lower chance of survival than people who acquired the virus via another transmission route.[31]

As recently as 2005 in Eastern Europe and Central Asia, people who inject drugs accounted for over 70% of HIV cases but represented only 24% of the people receiving ART.[32] Data collected for the WHO's universal access report in 2009 suggest that of 92 low- and middle-income countries that reported information on programmes and policies targeting injecting drug users, only 30 were providing needle and syringe programmes in 2008, 26 reported providing opioid substitution therapy (OST) and 26 reported access to HIV testing.[33] With regard to the prevention, diagnosis and treatment of TB in services aimed at people who inject drugs, a ratio of two to one countries replied that these were not available to drug users.[32]

Much more needs to be done to integrate TB and HIV services with those aimed at people who use drugs. As shown elsewhere in this report, there has been increasing focus on people who inject drugs within recent years and the scale-up of key harm reduction interventions such as OST programmes has been reported in many countries, including China, Vietnam and Indonesia, with a gradual move towards integrating these with HIV services. Integration with HIV and TB services is not yet the norm, although examples of good practice have been reported from countries such as Spain, Brazil and Ukraine.

Integration of HIV/TB services for people who use drugs in Ukraine

With more than 1.5% adult HIV prevalence, Ukraine has been hard hit by the Eastern European HIV epidemic, largely driven by unsafe injecting drug use. The epidemic has had high mortality rates, with TB being the major cause of mortality among people living with HIV. The positive news is that Ukrainian civil society and government have made great progress in building a strong network of harm reduction services and providing HIV prevention, care and treatment to thousands of people with Global Fund to Fight AIDS, Tuberculosis and Malaria and state funding. However, despite the rapid scale-up of ART (from reaching 200 people in 2003 to approximately 10,000 out of 43,000 people living with HIV in 2008), TB has continued to be a major cause of mortality even for people receiving ART.

In order to support drug users in using services, civil society organisations, in collaboration with the Ministry of Health, are working to expand the provision of OST to over 150 sites, including TB centres, TB hospitals and ART clinics. New models of integrated care are being developed, such as 'one-stop shops' with multidisciplinary teams licensed to provide OST, DOTS treatment of TB and ART, as well as the provision of social support and low-threshold services integration. At least five of these pilot sites were operating by 2009.

Efforts are also under way to draw the prison services into the integrated treatment scale-up. The state of HIV services in the prison system has been lacking, quality drug treatment is more the exception than the rule and TB is widespread, with high rates of MDR TB, poor treatment access, lack of adherence and/or lack of social support. Using Global Fund Round 6 funding, prisons are being encouraged to set up harm reduction services integrated with HIV and TB treatment services.

Next steps and recommendations

TB and HIV services are slowly scaling up in many countries, often alongside harm reduction services such as OST programmes, but there is a need to increase service cross-referral and integration.[13] This should be accompanied by the documentation of best practice in the provision of training and development of integrated services for TB/HIV and drug treatment/harm reduction, including collaboration with the criminal justice system.

Routine data on health service utilisation and outcome monitoring of people who use drugs is severely lacking and is needed for the planning and management of services, as well as for advocacy. This shortfall needs to be addressed through surveys and routine data collection.

Increased resources and political commitment for scaling up integrated services for people who use drugs, including TB, is essential. Drug user and harm reduction activists need to become more vocal in demanding access to these services.
The Global Fund is an increasingly important funding source for TB and HIV programmes, particularly for people who inject drugs. The international harm reduction community, including civil society and government, must take the opportunity the Global Fund provides to catalyse engagement in the provision of integrated services for drug users.

References

1. WHO (2009) *Global Tuberculosis Control. A Short Update to the 2009 Report*. Geneva: WHO.
2. Kitayaporn D et al. (1996) Survival of AIDS patients in the emerging epidemic in Bangkok, Thailand. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*. 11(1): 77–82.
3. UNAIDS (2009) *Report on the Global AIDS Epidemic. Joint United Nations Programme on HIV/AIDS, 2009*. Geneva: UNAIDS.
4. Reichman LB et al. (1979) Drug dependence, a possible new risk factor for tuberculosis disease. *Archives of Internal Medicine* 139(3): 337–9.
5. Keizer ST et al. (2000) How does tuberculosis relate to HIV positive and HIV negative drug users? *Journal of Epidemiology and Community Health* 54(1): 64–8.
6. Portu JJ et al. (2002) Tuberculin skin testing in intravenous drug users: Differences between HIV-seropositive and HIV-seronegative subjects. *Addiction Biology* 7(2): 235–41.
7. Malotte CK et al. (1998) Tuberculosis screening and compliance with return for skin test reading among active drug users. *American Journal of Public Health* 88(5): 792–6.
8. Selwyn PA et al. (1989) A prospective study of the risk of tuberculosis among intravenous drug users with human immunodeficiency virus infection. *New England Journal of Medicine* 320(9): 545–50.
9. WHO (2009) *Global Tuberculosis Control: Epidemiology, Strategy and Financing*. Geneva: WHO.
10. WHO, UNAIDS, UNICEF (2009) *Towards Universal Access: Scaling Up Priority HIV/AIDS Interventions in the Health Sector. Progress Report 2009*. Geneva: WHO.
11. WHO (2008) *Global Tuberculosis Control: Surveillance, Planning and Financing*. Geneva: WHO.
12. WHO (2009) *Scoping document: a review of viral hepatitis and HIV co-infection among injecting drug users and assessment of priorities for future activities* (unpublished)
13. WHO Regional Office for Europe (2007) *Status Paper on Prisons and Tuberculosis*. Copenhagen: WHO Regional Office for Europe.
14. Sylla L et al. (2007) Integration and co-location of HIV/AIDS, tuberculosis and drug treatment services. *International Journal of Drug Policy* 18(4): 306–12.
15. Kourbatova EV et al. (2006) Risk factors for mortality among adult patients with newly diagnosed tuberculosis in Samara, Russia. *International Journal of Tuberculosis and Lung Disease* 10(11): 1224–30.
16. Ministry of Health Committee on Response to HIV/AIDS, Ukrainian National AIDS Centre, LV Hromashevsky Institute for Epidemiology and Communicable Disease of AMS of Ukraine (2008) *Causes of Death of HIV-Positive People in Ukraine Study Report*. Kiev: STI/HIV/AIDS Programme, WHO Country Office in Ukraine.
17. Personal communication with Annette Verster, HIV Department, WHO, on systematic review of viral hepatitis being conducted by WHO.
18. WHO, UNAIDS, UNODC (2008) *Policy Guidelines for Collaborative TB and HIV Services for Injecting and Other Drug Users: An Integrated Approach*. Geneva: WHO.
19. Nunn P et al. (2007) TB drug resistance: Is it really a threat to Africa? *Ethiopian Medical Journal* 45(4): 399–404.
20. Wells CD et al. (2007) HIV infection and multidrug-resistant tuberculosis: The perfect storm. *Journal of Infectious Diseases* 196(Suppl. 1): S86–107.
21. Gandhi NR et al. (2006) Extensively drug-resistant tuberculosis as a cause of death in patients co-infected with tuberculosis and HIV in a rural area of South Africa. *Lancet* 368(9547): 1575–80.
22. Gandhi NR et al. (2010) HIV coinfection in multidrug- and extensively drug-resistant tuberculosis results in high early mortality. *American Journal of Respiratory and Critical Care Medicine* 181(1): 80–6.
23. Hannan MM et al. (2001) Investigation and control of a large outbreak of multi-drug resistant tuberculosis at a central Lisbon hospital. *Journal of Hospital Infection* 47(2): 91–7.
24. Dara M et al. (2009) *Guidelines for Control of Tuberculosis in Prisons*. Tuberculosis Coalition for Technical Assistance and International Committee of the Red Cross.
25. WHO (2000) *Tuberculosis Control in Prisons: A Manual for Programme Managers*. Geneva: WHO.
26. Ruddy M et al. (2005) Rates of drug resistance and risk factor analysis in civilian and prison patients with tuberculosis in Samara Region, Russia. *Thorax* 60(2): 130–35.
27. WHO (2006) *The Stop TB Strategy*. Geneva: WHO.
28. Stop TB Partnership (2006) *The Global Plan to Stop TB (2006–2015): Actions for Life, Towards a World Free of Tuberculosis*. Geneva: WHO.
29. WHO (2004) *Interim Policy on Collaborative TB/HIV Activities*. Geneva: WHO.
30. Donoghoe MC et al. (2008) Setting targets for universal access to HIV prevention, treatment and care for injecting drug users (IDUs): Towards consensus and improved guidance. *International Journal of Drug Policy* 19(Suppl. 1): S5–14.
31. Grigoryan A et al. (2009) Late HIV diagnosis and determinants of progression to AIDS or death after HIV diagnosis among injection drug users, 33 US States, 1996–2004. *PLoS One* 4(2): e4445.
32. WHO (2006) *Antiretroviral Therapy for HIV Infection in Adults and Adolescents: Towards Universal Access. Recommendations for a Public Health Approach*. Geneva: WHO.
33. Mathers BM et al. (2008) Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.

3.3: Neglected infections, real harms: A global scoping of injection-related bacterial infections and responses

About the author:

Dr Vivian Hope is a Senior Lecturer working for the Centre for Research on Drugs and Health Behaviour (CRDHB) at the London School of Hygiene & Tropical Medicine. The main focus of Vivian's work is infection-related harms among people who use drugs problematically, including bacterial and viral infections among people who inject drugs. He is involved in a number of studies looking at the epidemiology, public health surveillance and harm reduction responses to these infections.

The author would like to thank Robin Pollini, Jenny Scott, Jamie Bridge and Robyn Dwyer for their review of and input into this chapter.

Introduction

Injecting drug use has been reported across the globe, with an estimated 16 million people injecting drugs worldwide.[1] Research on infectious diseases related to injecting drug use has focused mainly on blood-borne viral infections such as human immunodeficiency virus (HIV) and hepatitis C virus (HCV), with bacterial infections receiving much less attention.[2] However, these infections are an important contributor to ill health among people who inject drugs and can result in severe and sometimes fatal complications.[3]

Bacterial infections due to injecting drug use can occur at injection sites or elsewhere on the body. Those affecting the skin and soft tissues include bacterial infections that cause the accumulation of pus (abscesses) or tenderness, swelling and redness (cellulitis) at or near injection sites. Infections elsewhere in the body include those infections causing illness away from injection sites (distal infections) such as infection of the heart lining (endocarditis) and infections that are more widespread or affect the body as a whole (systemic illnesses) such as blood poisoning (septicaemia).[3]

The focus of this chapter is on infections around injection sites, principally those infections of the skin and soft tissues that lead to symptoms such as abscesses or cellulitis. These infections most frequently occur at actual injection sites, but they can also develop close to injection sites. As most people who inject drugs do so into their limbs, these infections are often reported on the arms, shoulders (deltoids), legs or buttocks.[3 4]

This chapter will examine the current state of knowledge on the extent, risk factors and responses to bacterial infections at injection sites. As there is little published work on these infections in low- and middle-income countries, the focus will be on developed countries. However, these infections are likely to cause significant problems among people that inject drugs in all countries.

Glossary:
Inflammation is an area of redness and swelling that is usually warm and tender.
Abscesses are an accumulation of pus in addition to inflammation. Abscesses on the skin often result in lumps that are sometimes called boils.
Cellulitis is inflammation of the skin, or the tissue immediately below the skin, which usually begins as a small area of inflammation and then gets bigger.
Infective endocarditis is an infection of the lining of the heart and/or valves.

Causes of injection site infections

Injection site infections are due to infection with a range of aerobic and anaerobic bacteria. The latter are bacteria that grow in the absence of oxygen, and so can infect damaged tissues. They tend to cause more severe infections, with one group of such bacteria, the clostridia, typically producing powerful and potentially lethal toxins. However, infections of injection sites are

mostly due to aerobic bacteria (which need oxygen to grow) such as staphylococcal or streptococcal species or to several types of bacteria (i.e. polymicrobial with a mix of bacteria that may include both aerobes and anaerobes).[3]

Injection site infections arise from contamination of the injecting equipment or the drug solution with bacteria. This usually occurs in one of four ways:

1. Bacteria from an individual's natural skin flora enter the body during the injecting process.
2. Contamination of the injecting equipment whilst preparing the drug(s) for injection.
3. The re-use of injecting equipment.
4. Contamination of the drug(s) with material from the environment containing bacteria, or their spores, during manufacturing, bulking up ('cutting') or distribution. Bacterial spores are small, hardy reproductive bodies that can remain viable for a long time in the environment. They can survive the heating involved in preparing some drugs for injection.[5]

Complications of bacterial infections of injecting sites

Injection site infections can result in a range of complications, which may cause more serious illnesses and even death. These complications can be either local (at or near the injection site), distal (affecting another part of the body) or systemic (affecting the whole body).

Local complications include the spread of the infection to the surrounding tissues, resulting in, for example, infection of joints (septic arthritis),[3 6] infection of the bone (osteomyelitis)[3 6] or infection of the blood vessels producing blood-filled bulges (aneurysms).[3] Others include the development of persistent skin ulcers.[3]

Reported distal complications of injection site infections include infective endocarditis (infection of the lining of the heart or valves)[7] and abscess of the spine or brain.[6] Others include infections of bones and joints away from the injection site.[3] The most commonly reported and serious complication related to injection site infections is, however, infective endocarditis.[7]

Some species of bacteria produce poisons (known as toxins), some of which cause very severe illnesses. The most commonly reported injecting-related infections that produce powerful toxins are caused by clostridia. Clostridia are anaerobic bacteria that form spores that can survive in the environment for many years. These spores may then contaminate drugs and cause infection. These bacteria cause localised infections, but the powerful neurotoxins they produce cause systemic illnesses, which can be fatal. The two most widely reported are wound botulism (*Clostridium botulinum*) and tetanus (*Clostridium tetani*).The toxins that these organisms produce cause progressive paralysis and may result in respiratory failure and death.[6 8]

Other injection site infections can also produce powerful toxins. These include another serious, often fatal, infection due to a spore-forming bacteria, anthrax, although this is very rare.[9 10]

The complications of injection site infections vary in their severity, however, many could be averted by the prompt diagnosis and management of the initial infection.[8]

Extent of injection site infections

Studies have found considerable variation in the extent (prevalence) of symptoms of bacterial infections at injection sites. Overall, studies suggest that the prevalence of the common symptoms of these infections, such as abscesses or cellulitis, is in the range of 6% to 36% amongst people who inject drugs.[11 12 13 14 15 16 17 18 19] Some of this variation will reflect the different definitions of infection and the different periods used in these studies.

Table 3.3.1: Summary of studies reporting on the prevalence of injection site infections

Study Design	City, Country	Setting	Outcome	Source
Cross-sectional, baseline for cohort	Vancouver, Canada	DCR	22% self-reported abscess(es) during the previous six months	Lloyd-Smith et al. (2005)[12]
Cohort	Vancouver, Canada	DCR	6% to 10% reported a current injection site infection	Lloyd-Smith et al. (2008)[24]; Lloyd-Smith (2009)[2]
Cross-sectional	Seven locations, England	Community recruited	36% self-reported abscess(es) or open sore(s) during the previous year	Hope et al. (2008)[14]
Repeated cross-sectional, over three years	Multiple sites, England, Wales and Northern Ireland	Recruited through a range of specialist services	35% in 2006, 37% in 2007 and 34% in 2008 self-reported abscess(es) or open sore(s) during the previous year	Hope et al. (2010)[23]
Cross-sectional	Six locations, Australia	NSP and community	7% self-reported abscess(es) and 7% cellulitis during the previous year	Dwyer et al. (2009)[13]
Cross-sectional	Multiple cities, Australia	NSP users	27% self-reported ever having an abscess	Topp et al. (2008)[15]
Cross-sectional	Sydney, Australia	DCR	6% self-reported ever having an abscess or skin infection	Salmon et al. (2009)[18]
Cross-sectional	Tijuana, Mexico	Community recruited	20% self-reported abscess(es) during the previous six months	Pollini et al. (2010)[19]
Cross-sectional	San Francisco, US	Community recruited	32% had a current abscess, 4% had cellulitis and 14% had both	Binswanger et al. (2000)[17]
Cross-sectional (associated with a cohort)	Baltimore, US	Community recruited	11% reported abscess(es) during the previous six months	Vlahov et al. (1992)[25]
Prospective cohort	Amsterdam, Netherlands	Recruited through a range of services	Incidence of self-reported abscess(es) was 33 per 100 person-years	Spijkerman et al. (1996)[16]

The various studies that have reported on the prevalence and the rate of occurrence (incidence) of these infections in people who inject drugs are summarised in Table 3.3.1. The incidence of these infections is not easy to measure, but in a prospective cohort study (a study that followed a group of people who inject drugs over time) undertaken in Amsterdam between 1986 and 1994, the incidence of skin abscesses was reported to be as high as 33 per 100 person-years at risk through injecting.[16]

There has been little examination of trends in the prevalence of injection site infections over time. A US study of records from San Francisco General Hospital found an indication of increased use of hospital services for injection site infections, with Emergency Department use for these rising from 1,292 cases in 1996/7 to 2,619 in 1999/2000.[20]

In the UK there has been a marked rise in the number of hospital admissions of drug users with skin and soft tissue infections. For example, admissions due to skin abscesses of the central part of the body (trunk) and groin increased from 92 in 1997/8 to 613 in 2003/4, an increase of 566%.[21] During this same period, reports of severe group A streptococcal infections among people who inject drugs in the UK increased from less than ten in the mid-1990s to 143 in 2004.[22] More recent studies in England, which looked at the prevalence of symptoms of injection site infections among community-recruited samples of people who inject drugs, indicated little overall change in prevalence, with approximately one-third reporting symptoms in both 2004 and 2008.[14 23]

Canadian examinations of the occurrence of injection site infections among participants in a study in Vancouver during 2004 and 2005 found that the proportion reporting a current infection was fairly consistent over this period, fluctuating between 6% and 10%.[24]

Overall, the data suggest an increase in more severe infections among people who inject drugs in some developed countries.

Factors associated with infections and symptoms

Injection site infections have been associated with a number of individual, behavioural and environmental factors. The behavioural factors are principally concerned with hygiene, injection practice and the drug solutions injected. These factors include:

1. ***Injection hygiene.*** Inadequate cleaning of the hands or the sites used for injection,[11 12 13 25] drawing blood back into the syringe repeatedly,[26] sharing filters[23] and needle and syringe re-use[11 14 18] have all been associated with higher levels of infection. These practices can result in bacterial contamination of the injecting equipment or the drug solution being injected. Bacteria are then able to enter the body through the injection process and cause infection.
2. ***Injection frequency.*** More frequent injection[14 15 16 18 23 27] has been associated with infection. This may be because repeated injecting at a single body site causes cumulative damage to skin and soft tissue, and results in increased susceptibility to infection.
3. ***Skin and muscle popping.*** Subcutaneous injecting, more commonly referred to as 'skin popping',[11 17] has been associated with infections. Injecting into the skin or muscle (intramuscular injecting or 'muscle popping') may provide a greater opportunity for infection as it can cause localised tissue damage. This damaged tissue creates a niche environment in which bacteria could grow that would not be created by injecting into a vein.[28] Damaged tissues may well provide an anaerobic environment suited to the growth of toxin-producing bacteria.[29] Some people choose to inject under the skin or into muscle because this is their preferred route or because damage to their veins has made intravenous injection difficult. However, many injections under the skin or into muscle may be accidental as a consequence of missing a vein.[30]
4. ***Body sites used for injection.*** The occurrence of injection site infections has been associated with the body site that is used for injection, with sites other than the arms often associated with infection.[12 14 23 27] This might be because some sites, such as the groin (femoral vein), are likely to be harder to clean, or to keep clean, than other sites.
5. ***The drug(s) injected.*** The drugs used by people who inject vary in availability, purity, form and across geographical settings. The risk of developing an injection site infection has been found to vary according to drug or drugs being injected.[11 14 16 18 23] Speedball (a combination of heroin and cocaine) injecting has been associated with injection site infections in San Francisco and Amsterdam.[11 16] A similar association has been found with the injection of opiate-stimulant combinations in the UK.[23] Cocaine injecting has been associated with such infections in Vancouver.[12] The injection of black tar heroin has been associated with developing wound botulism in the US.[31] The drugs used and the substances used to dissolve them (including any contaminants present in these) may have damaging effects on the skin and underlying tissues,[3] and so compound the tissue damage from injecting. Cocaine, for example, has been associated with causing the constriction of blood vessels.[32] Heroin base and crack-cocaine, unlike the salt forms, are not readily soluble in water. These are typically prepared for injection by being heated with an organic acid such as ascorbic or citric acid. The use of these compounds to dissolve drugs can result in an acidic drug solution, which can cause tissue damage particularly if injected under the skin or into muscle. The resulting damaged tissue may provide an environment that is especially favourable for the growth of anaerobic bacteria.[29]

Other factors associated with higher levels of bacterial infections include:

1. ***Length of time injecting and age.*** The numbers of years injecting and the person's age have both been associated with injection site infections: being older[13 14 15] and injecting for longer[17 18 23] are both linked with higher levels of infection. A possible explanation for this is that veins may become hardened after many years of repeated injecting, resulting in increased occurrences of missing the vein, the need to inject in sites that are difficult to keep clean (such as the groin) or switching to injecting under the skin or into muscle. Conversely it has been suggested that inexperience could lead to a higher level of infections, possibly due to a less developed injecting technique, causing greater tissue damage, or assistance from others, increasing the risk of contamination.[6]

2. ***Poor housing conditions and homelessness.*** Individuals who are homeless or living in temporary accommodation (such as hostels) have been reported to have higher levels of injection site infections.[24] Injecting in public places, such as the street, has also been associated with the development of these infections.[13 18] The environments in which people live and inject may promote poor hygiene[33] or risky injecting practice, such as rushing the process. For example, people who inject in public places may have no access to clean water or may inject into a higher risk body site (i.e. using the groin for a 'quick fix' when injecting in public places or when it is cold).[34]
3. ***Gender.*** A number of studies have found that women injectors experience higher levels of injection site infections than men.[8 12 14 15 18 23 24] It has been suggested that this might reflect biological differences between men and women, such as women having smaller, less easily accessible veins, possibly resulting in them more frequently missing the vein and thereby increasing their risk of developing an abscess.[2 15] However, there is little anatomical evidence to support this.[15] There are other factors that may play a role. For example, women are more likely than men to report having assistance with injecting,[35] which may place them at an increased risk of an injection that misses the vein. In addition, the process of assistance itself may result in contamination of the injecting equipment. Gendered social roles and power dynamics within sexual relationships may also play a role, as these have been reported to have an impact on HIV-related risk behaviours.[36]
4. ***Sex work.*** Several studies have found that involvement in sex work is associated with developing injection site infections.[12 16 18 19] It has been suggested that this association may be due to sex work being a marker of greater social marginalisation or a street-based lifestyle which could increase risk.[18]
5. ***Viral infections.*** Higher levels of injection site infections have been reported among people living with HIV[12 16] and people living with hepatitis C,[14 15] conditions which increase peoples' susceptibility to other infections or reduce their ability to fight an infection.

A few studies have also reported other associations. For example, recent research from Mexico found associations between having an abscess and smoking methamphetamine, and also with negative experiences of policing.[19] Such associations, which have not been reported in other studies, may be specific to the particular setting.

Whilst the majority of the studies discussed above are from high-income countries, the factors related to these infections in developing and transitional countries are likely to be very similar. Factors such as injection hygiene and poor housing and homelessness may be more of an issue among people who inject drugs in low- and middle-income countries. In addition, the high prevalence rates of viral infections such as HIV and viral hepatitis among injecting populations in many countries may also increase their susceptibility to injection site infections.

Harm reduction responses and the prevention of injection site infections

The prevalence of injection site infections can be reduced by harm reduction interventions that target key risk factors. These interventions should consider the needs of different groups who may be more vulnerable to harm, such as the homeless, women and older long-term injectors. Such interventions include needle and syringe programmes (NSP) and opioid substitution therapy (OST), both of which are recommended by United Nations guidelines as part of a key package of interventions for people who inject drugs.[37] Easy access to NSP can prevent infections by providing access to sterile injecting equipment and alcohol wipes for cleaning injection sites and by giving advice on hygienic and safe injection technique. OST has been shown to be effective in preventing transmission of blood-borne viruses.[38] The availability of prescribed oral substitute drugs such as OST can also prevent injection-related infections if the dose given is sufficient to end the need to inject illicit drugs on top.[39] Thus, harm reduction interventions can play a key role in the reduction of these infections among people who inject drugs.

Harm reduction interventions that encourage routes of use other than injecting – known as 'route transition interventions' – have also been proposed and piloted, however, further evaluation is needed to determine whether they will be of benefit.[40] For example, providing sheets of aluminium foil to promote the smoking of drugs such as heroin as an alternative to injecting has been proposed,[41] and foil packs designed for use in such an intervention have been developed.[42] Smoking or inhaling drugs rather than injecting them would prevent bacterial infections of injection sites. However, smoking is closely associated with other well-documented harms, including lung damage. Furthermore, some spore-forming bacteria, including anthrax, can be found in drugs and could cause infection if smoked or inhaled.[9]

Harm reduction and route transition interventions have the potential to reduce the extent of injection-related bacterial infections. However, these interventions, even if extensively adopted, are unlikely to prevent all such infections and health services will still need to respond to these infections.

Health care utilisation in response to injection site infections

People who inject drugs may find it difficult to access health care due to marginalisation and stigma. Some may attempt to self-treat symptoms, for example incising and draining an abscess.[4 19] People may also delay accessing health care due to prior bad experiences or difficulties in seeking traditional primary care services. As a result people who inject drugs may be more likely to make use of hospital Emergency Departments, both due to ease of access and because the delay in seeking health care has meant the illness now requires urgent attention.

Treatment for injection site infections often involves a range of procedures, including incision and drainage, application of dressings and administering antibiotics either by intravenous injection or orally.[4 6] Treatment of people who inject drugs can be complicated by other diseases such as HIV infection.[6] In addition, treating an infection or a complication may require long periods of time in hospital. Lengthy hospital stays may be difficult for people who are regularly injecting drugs and if they do not receive appropriate medical management (i.e. OST) they may leave hospital early, against medical advice, and not complete the treatment.

Studies looking at the health problems that lead to people who inject drugs presenting at Emergency Departments have found that injection site infections are often the most common reason for attending. Studies in North America found that abscesses and

cellulitis, two of the most frequent symptoms of injection-related infections, were the most common diagnoses among people who inject drugs who visited Emergency Departments, and they were also the most common reasons for their hospitalisation.[43 44] For example, a study undertaken in Vancouver found that 17% of all Emergency Department visits and 18% of all hospitalisations among a community-recruited sample of people who inject drugs were due to skin abscesses and cellulitis.[43]

A US cohort study of people who inject drugs who sought treatment between May 2001 and May 2002 from a hospital in Washington State found that 40% of those who attended the Emergency Department for an injection site infection were admitted to the hospital.[45] Two-thirds presented with an abscess (69%), with one-quarter of these abscesses requiring drainage in an operating theatre. One-tenth of the abscesses had been drained previously, either spontaneously (i.e. bursting) or by self-incision and drainage.

The health care costs associated with injection-related bacterial infections are likely to be substantial. A number of US studies have estimated the costs associated with hospital treatment and found these to be high. A 1980s study looking at hospital use for abscess care over a twelve-month interval found that the average length of hospitalisation was 12.4 days, at an average cost of US$10,651, and that the estimated annual cost of treating abscesses among people who inject drugs at the hospital was US$6.9 million.[46] A review of patient records from 1998 at Rhode Island Hospital found that 45% of the admissions among a sample of HIV-negative people who inject drugs were due to injection site infections or their complications, with these accounting for almost all the injection-related problems found; the injection-related infections were significantly more costly than the other admissions (US$13,958 vs US$7,906).[47] A study of hospital records from San Francisco General Hospital found that skin incision and drainage was the most common primary procedure on all inpatient records of those admitted for injection-related infections, with approximately one-quarter of the cases having multiple admissions within a year; the injection site infections at this hospital resulted in inpatient-related treatment charges that averaged US$9.9 million per fiscal year between 1996 and 2000.[20]

A community-recruited study of people who inject drugs undertaken at seven locations in England in 2004 found that 36% reported having either an abscess or an open wound at an injection site in the previous year.[14] This study collected data on the use of health services in response to these symptoms, and estimated the national health care burden using standard costs. Injection site infections in England were found to cost between UK£15.5 and UK£47 million per annum in 2006. Overall health care costs related to problematic drug use, both injecting and non-injecting, in England had been estimated to be approximately UK£500 million per annum in the financial year 2003/4, with UK£25 million of this due to blood-borne viruses (HIV, hepatitis B and C) among people who inject drugs.

A study undertaken in three Australian states (Queensland, New South Wales and Victoria) estimated the cost of non-viral injecting-related injuries and disease to be AUS$19.9 million in the 2005/6 fiscal year.[48] Of this amount, AUS$8.7 million was incurred by community-based services, AUS$2.8 million by Emergency Departments (due to over 60,000 visits) and AUS$8.3 million was due to hospital admissions, accounting for between approximately 8,500 and 14,000 bed days of care.

The existing literature suggests that injection site infections and their complications place a considerable burden on health care systems in high-income countries. Whilst no scientific literature was identified for other countries, these infections are likely to pose a significant challenge to low- and middle-income countries. Preventive activities and supporting prompt access to health care when symptoms appear could substantially reduce bacterial infections of injection sites and the associated costs for health care systems.

Community-based health care services for injection site infections

As noted above, people who inject drugs often seek medical attention for injection site infections and other health issues at hospital Emergency Departments rather than within a primary care setting, and may even attempt self-treatment. Thus, care may be more costly than necessary.[19] In response, a number of community-based approaches that aim to reduce use of Emergency Departments and hospital inpatient care have been reported. As these services are oriented towards people who inject drugs, they can provide a tailored service responding to their specific needs.

The Integrated Soft Tissue Infection Services Clinic in San Francisco was established to provide coordinated surgical intervention, substance use counselling and social services for those presenting at a public hospital with soft tissue infections.[44] This clinic was found to be valuable and cost effective, resulting in a 47% decrease in surgical service admissions, a 34% reduction in inpatient acute care bed days and a 71% reduction in operating room procedures in its first year of operation. There was also a 34% reduction in Emergency Department visits. Overall, the clinic was estimated to have saved over US$8.75 million in costs related to injection site infections, which represented a 45% reduction in the costs of treating these infections. This clinic shifted care from a mainly inpatient-based approach to one with a focus on outpatient-based provision that integrated a range of services.

Another example of effective treatment for injection site infections is the community-based Wound and Abscess Clinic located in an NSP in Oakland, US.[49] This clinic is provided by a multidisciplinary team who offer care for injection site infection integrated with referrals to other services in a dedicated space in the service. In 2000 this clinic was reported to have an average cost per individual treated of US$5 (excluding overhead costs), substantially lower than equivalent hospital costs, which averaged between US$185 and US$360 (including overheads, but not including medication and physician fees).

A number of studies on the impact of the Supervised Injection Facility (SIF), a drug consumption room (DCR) in Vancouver, Canada, have looked at injection site infections and health care seeking. One study found that the majority (65%) of visits to the nurse within the SIF were related to care for injection site infections and that those who were subsequently referred to hospital by the nurse were hospitalised for shorter periods than those accessing hospital by other routes.[2] This finding suggests that offering community-based, easily accessible, nurse-provided services may promote more prompt health care seeking and so reduce the levels of severe infections or complications that may result in hospitalisation.

The community-based health care studies reported in the scientific literature have all been undertaken in high-income countries. The barriers (including cost, distance, exclusion criteria, stigma and discrimination) faced by people who inject drugs in accessing health care are often greater in low- and middle-income countries.[50] So although there are very limited data, it may be that the severity of complications, mortality and morbidity associated with injection-related bacterial infections are greater in these settings. The provision of community-based services offering treatment for injection-related bacterial infection has been noted in a number of countries including low- and middle-income countries. For example, it is reported that an abscess management service is provided by the drop-in centres for people who use drugs in Myanmar[51] and by the CARE organisation in Dhaka, Bangladesh.[52]

Published studies on interventions focusing on injection site infections are few in number and further development and evaluation work is clearly needed. The findings of these few studies, however, do indicate that community-based services such as NSPs and DCRs could have a substantial impact on reducing harm from these infections. They also indicate that the development of nurse-led services for injection site injuries and infections can be effective in improving prompt health care seeking and in reducing expensive complications. These services could possibly be integrated with community-based blood-borne virus (i.e. HIV and viral hepatitis) testing and vaccination clinics, and existing community-based clinics providing these services could be developed at relatively low cost to also provide injection site infection care.

Conclusion

Injection site infections are common among people who inject drugs and can have severe complications that may, albeit infrequently, be fatal. The bacterial contamination leading to these infections may arise from the individual's skin flora during injection, contamination of the injecting equipment during the preparation and injection of the drug, re-use of injecting equipment or contamination of the drug(s) during their manufacture or distribution.

Studies from several high-income countries suggest that the prevalence of these infections varies, with between one in twenty and one in three people who inject drugs reporting injection site infections each year. This variation, in part at least, reflects differences in the methods used by the studies. However, it could also reflect global variations in the patterns of drug use and in the responses to this issue. Higher levels of infections have been associated with a number of factors including poor injection hygiene, frequent injection, injecting under the skin or into muscle, the use of certain body sites for injection, the use of certain drugs, having been injecting for a long time, poor housing conditions and having a blood-borne viral infection. The risk of bacterial infections could be reduced by addressing these factors through, for example, reducing injecting under the skin or into muscle, avoiding use of excessive acid to dissolve drugs, not re-using equipment, and cleaning skin with alcohol before injection. Preventive interventions should aim to address these factors through the provision of advice and the full range of injecting-related equipment. This could be readily achieved through easy–to-access NSPs, as has been recommended.[37 53] Access to OST can also help if a sufficient dose of the substitute drug is given to prevent the need to inject illicit drugs on top. Route transition interventions to encourage the use of drugs by routes other than injecting may also have a role to play in reducing the harm from bacterial infections of injection sites, although further examination and evaluation is needed.

The excessive costs often associated with injection-related bacterial infections can be prevented by interventions aimed at providing people who inject drugs with timely and appropriate care. A small number of interventions that aim to make accessing such care easier have been assessed and found to be successful in reducing health care costs.[44 49] Whilst further research and intervention trials are needed to identify and evaluate the most appropriate interventions, work undertaken so far suggests that low-threshold community-based interventions, such as nurse-provided clinics in DCRs or NSPs, are likely to be effective.[44 46] The provision of assessments of injection site infections and access to care for these has been recommended as a core component of fixed site needle exchange provision by the National Institute of Health and Clinical Excellence in the UK.[53]

There is a noticeable absence of scientific studies on bacterial infections among people who inject drugs in low- and middle-income countries. This may indicate that little research has been undertaken in this area or that what has been undertaken has not been published or is not easily identified (i.e. in grey literature or from small sections of publications focusing on other topics). Services addressing these infections have been reported in a number of low- and middle-income countries, and these infections will occur among all populations of injectors to varying extents. Infections in countries with less developed health care systems may present an even greater burden than they do in high-income countries.

People who inject drugs are vulnerable to many infections, including those due to a wide range of bacteria. Bacterial infections introduced through the injection process are a common cause of illness among injectors and can result in considerable harm and health care costs. The occurrence of such infections can be reduced by improving injection hygiene and practice using harm reduction approaches, and the complications can be minimised by improving prompt access to health services. The scaling up of harm reduction interventions, such as NSPs and the provision of OST, could have a significant impact in reducing these infections and the harm that they cause.

References

1. Mathers BM et al. (2008) Reference Group to the UN on HIV and Injecting Drug Use. Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. Lancet 372(9651): 1733–45.
2. Lloyd-Smith E (2009) The epidemiology of cutaneous injection-related infections among injection drug users at a supervised injection facility. Thesis submitted for Degree of Doctor of Philosophy, University of British Columbia, Vancouver, Canada. https://circle.ubc.ca/bitstream/handle/2429/13391/ubc_2009_fall_lloydsmith_elisa.pdf?sequence=1 (last accessed 12 March 2010).
3. del Giudice P (2004) Cutaneous complications of intravenous drug abuse. British Journal of Dermatology 150: 1–10.
4. Takahashi TA et al. (2003) Type and location of injection drug use-related soft tissue infections predict hospitalization. Journal of Urban Health 80: 127–36.
5. Brazier JS et al. (2003) Heat and acid tolerance of Clostridium novyi Type A spores and their survival prior to preparation of heroin for injection. Anaerobe 9: 141–4.
6. Gordon RJ and Lowy FD (2005) Bacterial infections in drug users. New England Journal of Medicine 353: 1945–54.
7. Miro JM et al. (2003) Infective endocarditis in intravenous drug abusers. Current Infectious Disease Reports 5: 307–316.63.
8. Beeching NJ and Crowcroft NS (2005) Tetanus in injecting drug users. BMJ: British Medical Journal 330: 208–9.
9. Ramsay CN et al. (2010) An outbreak of infection with Bacillus anthracis in injecting drug users in Scotland. Eurosurveillance 15(2).
10. Ringertz SH et al. (2000) Injectional anthrax in a heroin skin-popper. Lancet 356(9241): 1574–5.
11. Murphy E et al. (2001) Risk factors for skin and soft-tissue abscesses among injection drug users: A case-control study. Clinical Infectious Diseases 33: 35–40.
12. Lloyd-Smith E et al. (2005) Prevalence and correlates of abscesses among a cohort of injection drug users. Harm Reduction Journal 2: 24.
13. Dwyer R et al. (2009) Prevalences and correlates of non-viral injecting-related injuries and diseases in a convenience sample of Australian injecting drug users. Drug and Alcohol Dependence 100: 9–16.
14. Hope V et al. (2008) Frequency, factors and costs associated with injection site infections: Findings from a national multi-site survey of injecting drug users in England. BMC Infectious Diseases 18(8): 120.
15. Topp L et al. (2008) Prevalence and predictors of injecting-related injury and disease among clients of Australia's needle and syringe programs. Australia and New Zealand Journal of Public Health 32: 34–7.
16. Spijkerman I et al. (1996) Human immunodeficiency virus and other risk factors for skin abscesses and endocarditis among injection drug users. Journal of Clinical Epidemiology 49: 1149–54.
17. Binswanger I et al. (2000) High prevalence of abscesses and cellulitis among community-recruited injection drug users in San Fransisco. Clinical Infectious Diseases 30: 579-81.
18. Salmon AM et al. (2009) Injecting-related injury and disease among clients of a supervised injecting facility. Drug and Alcohol Dependence 101: 132–6.
19. Pollini RA et al. (2010) High prevalence of abscesses and self-treatment among injection drug users in Tijuana, Mexico. International Journal of Infectious Diseases (in press).
20. CDC (2001) Soft tissue infections among injection drug users San Francisco, California, 1996–2000. MMWR: Morbidity and Mortality Weekly Report 50: 381–4.
21. Irish C et al. (2007) Skin and soft tissue infections and vascular disease among drug users, England. Emerging Infectious Diseases 13: 1510–11.
22. Health Protection Agency et al. (2008) Shooting Up: Infections among Injecting Drug Users in the United Kingdom 2007. London: Health Protection Agency.
23. Hope VD et al. (2010) The extent of injection site infection among injecting drug users in England, Wales & Northern Ireland: Findings from a national surveillance study. Epidemiology and Infection (in press).
24. Lloyd-Smith E et al. (2008) Risk factors for developing a cutaneous injection-related infection among injection drug users: A cohort study. BMC Public Health 8: 405.
25. Vlahov D et al. (1992) Bacterial infections and skin cleaning prior to infection among intravenous drug users. Public Health Reports 107: 595–8.
26. Kerr T et al. (2005) High rates of primary care and emergency department use among injection drug users in Vancouver. Journal of Public Health (Oxford) 27: 62–6.
27. Darke S et al. (2001) Physical injecting sites among injecting drug users in Sydney, Australia. Drug and Alcohol Dependence 62: 77–82.
28. Brown PD and Ebright JR (2002) Skin and soft tissue infections in injection drug users. Current Infectious Disease Reports 4: 415–19.
29. Brett MM et al. (2005) Soft tissue infections caused by spore-forming bacteria in injecting drug users in the United Kingdom. Epidemiology and Infection 133: 575–82.
30. Hankins C et al. (2000) Unintended subcutaneous and intramuscular injection by drug users. CMAJ 163: 1425–6.
31. Passaro DJ et al. (1998) Wound botulism associated with black tar heroin among injecting drug users. JAMA 279: 859–63.
32. Gontijo B et al. (2006) Skin manifestations of illicit drug use. Anais Brasileiros de Dermatologia 81: 307–17.
33. Raoult D et al. (2001) Infections in the homeless. Lancet Infectious Diseases 1: 77–84.
34. Rhodes T et al. (2006) Groin injection in the context of crack cocaine and homelessness: From risk boundary to acceptable risk? International Journal of Drug Policy 17: 164–70.
35. Wood E et al. (2003) Requiring help injecting as a risk factor for HIV infection in the Vancouver epidemic: Implications for HIV prevention. Canadian Journal of Public Health 94: 355–9.
36. MacRae R and Aalto E (2000) Gendered power dynamics and HIV risk in drug-using sexual relationships. AIDS Care 12: 505–15.
37. WHO, UNODC, UNAIDS (2009) Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users. Geneva: WHO: www.who.int/hiv/pub/idu/idu_target_setting_guide.pdf (last accessed 12 March 2010).
38. Palmateer N et al. (2009) Evidence for the Effectiveness of Harm Reduction Interventions in Preventing Hepatitis C Transmission among Injecting Drug Users: A Review of Reviews. Report for the Prevention Working Groups of the Advisory Council on the Misuse of Drugs and the Hepatitis C Action Plan for Scotland.
39. Langendam MW et al. (2000) Methadone maintenance and cessation of injecting drug use: Results from the Amsterdam Cohort Study. Addiction 95: 591–600.
40. Bridge J (2010) Route transition interventions: Potential public health gains from reducing or preventing injecting. International Journal of Drug Policy (in press).
41. Pizzey R and Hunt N (2008) Distributing foil from needle and syringe programmes (NSPs) to promote transitions from heroin injecting to chasing: An evaluation. Harm Reduction Journal 5: 24.
42. Exchange Supplies: www.exchangesupplies.org/needle_exchange_supplies/foil/foil_intro.html (last accessed 22 March 2010).
43. Palepu A et al. (2001) Hospital utilization and costs in a cohort of injection drug users. CMAJ 165: 415–20.
44. Harris HW and Young DM (2002) Care of injection drug users with soft tissue infections in San Francisco, California. Archives of Surgery 137: 1217–22.
45. Takahashi TA et al. (2007) Predictors of hospitalization for injection drug users seeking care for soft tissue infections. Journal of General Internal Medicine 22: 382–8.
46. Wallace JR et al. (1986) Social, economic, and surgical anatomy of a drug-related abscess. American Surgeon 52: 398–401.
47. Stein MD and Sobota M (2001) Injection drug use: Hospital care and charges. Drug and Alcohol Dependence 64: 117–20.
48. Sweeney R et al. (2009) The economic burden to the public health system of treating non-viral injecting-related injury and disease in Australia (a cost of illness analysis). Australia and New Zealand Journal of Public Health 33(4): 352–7.
49. Grau LE et al. (2002) Expanding harm reduction services through a wound and abscess clinic. American Journal of Public Health 92: 1915–17.
50. Cook C and Kanaef N (2008) Global State of Harm Reduction 2008: Mapping the Response to Drug-Related HIV and Hepatitis C Epidemics. London: IHRA.
51. AHRN Myanmar: www.ahrn.net/index.php?option=content&task=view&id=2617 (last accessed 12 March 2010).
52. AHRN (2006) AHRN Network Bulletin No. 70: www.ahrn.net/index.php?option=content&task=view&id=2446 (last accessed 12 March 2010).
53. NICE (2009) Needle and Syringe Programmes: Providing People who Inject Drugs with Injecting Equipment. NICE Public Health Guidance 18. London: Nice:: http://guidance.nice.org.uk/PH18 (last accessed 12 March 2010).

3.4: Speeding up the response: A global review of the harm reduction response to amphetamines

About the author:

Sophie Pinkham is Acting Deputy Director of Programs and Operations at AIDS Foundation East-West. As a Fulbright fellow from 2008 to 2010 she conducted ethnographic research on Ukraine's AIDS, harm reduction and women's rights movements and produced a documentary on women drug users in Ukraine. She worked at the Open Society Institute from 2005 to 2008. She holds a BA in English literature from Yale University. A native of New York, she is based in Kyiv.

The author would like to thank Rachel Anderson and Luciano Colonna for their invaluable comments and guidance on this chapter.

Introduction

Amphetamines, or 'amphetamine-related drugs', are stimulants with the temporary effect of increasing the activity of the central nervous system, producing effects similar to adrenaline. Although some amphetamines are prescribed, this chapter will explore the harms associated with the illicit use of certain amphetamines. Despite heavy media coverage of amphetamines and increased research attention in some countries, the harm reduction response remains underdeveloped when compared with the response to opiates and injecting-related harms. Programmes do exist and new guidance is being compiled, but there is a need for evaluation, further documentation of experiences and expansion of effective interventions. This chapter will discuss the emerging responses to amphetamines-related harms and consider the next steps for the international harm reduction community.

Definitions and effects

Amphetamine, methamphetamine, methcathinone and cathinone, the four drugs discussed in this chapter, stimulate the central nervous system and cause the rapid release of dopamine and other neurotransmitters. They can produce feelings of energy, confidence, alertness, well-being, talkativeness and increased sex drive. They increase blood pressure, heart rate and other metabolic functions, and decrease appetite.[1]

Methamphetamine has stronger subjective effects, or a more intense high, than amphetamine.[2] Cathinone is the active substance in fresh khat, a North African shrub whose leaves have been chewed for centuries for their mild stimulant effect. The differences between cathinone and methcathinone are similar to those between amphetamine and methamphetamine: methcathinone is stronger than cathinone and produces similar but more intense effects, including a sense of invincibility, energy and increased sexuality and talkativeness. Euphoric effects are often more pronounced than with amphetamine or methamphetamine, leading some to compare cathinone and methcathinone to cocaine. Negative effects are similar to those caused by amphetamine and methamphetamine. Cathinone or methcathinone can be addictive and cause problems similar to those produced by long-term or heavy use of amphetamine and methamphetamine.[3]

Although amphetamines are often grouped with ecstasy in the category 'amphetamine-type stimulants', this chapter will limit its scope to amphetamine, methamphetamine, cathinone and methcathinone. The chapter excludes ecstasy in part because of the dramatic differences in patterns of ecstasy use. People who use ecstasy are less likely to become dependent on it and are much less likely to inject or smoke it, reducing the frequency of harms associated with these routes of administration.

For simplicity, the plural term 'amphetamines' will be used to refer to the four amphetamine-like drugs discussed here. Individual drug names (e.g. the singular 'amphetamine') will be used to discuss issues specific to one drug, or when the research discussed refers to one drug rather than to the group.

Overview of amphetamine use around the world

During the 1990s the global use and production of amphetamines increased significantly, receiving mounting attention from law enforcement agencies, the media, politicians, medical and social service providers and researchers.

In the context of continued efforts to reduce cocaine and heroin production, amphetamines have a clear advantage in the marketplace. Rather than being grown in the open over an extended period of time in specific climates, amphetamines can be manufactured relatively cheaply and easily from other chemical 'precursors' that are licit and often easily available. Amphetamines are produced in clandestine laboratories that vary widely in size and sophistication. In some regions, it is common for drug users to produce their own amphetamines at home. Amphetamines have the potential to yield huge profits, and production is even harder to measure and prevent than that of opium or coca. If a laboratory is identified by police, a replacement can quickly be set up in another location. When law enforcement succeeds in limiting certain precursors, manufacturers can use different ones or synthesise their own. For example, if access to the precursor pseudoephedrine is restricted, it can be replaced by another, more easily available medication that can also be used to produce amphetamines.[4]

From the user's perspective, amphetamines are often cheaper and more easily available than opiates or cocaine. They are popular in part because of their perceived functionality: many people use them to facilitate work, study, sex or weight loss.

Prevalence and patterns of use

According to estimates from the United Nations Office on Drugs and Crime (UNODC), between 16 and 51 million adults used amphetamine-type substances in 2007; the wide range reflects the dearth of precise data on use.[5] Where available, prevalence estimates are based on household surveys, seizures and arrests by law enforcement agencies, treatment demand and other medical data, epidemiological research and anecdotal evidence. These methods are not, however, always reliable. Lab seizures and arrests reflect law enforcement priorities; treatment demand reflects accessibility and perceived effectiveness of treatment; household surveys tend to miss high-risk groups. Data collection methods vary dramatically from country to country, and some countries do not collect or analyse data at all. Internationally, large-scale epidemiological research is limited.

In its synthesis of international data on rates of drug use, UNODC uses the term 'prevalence' to mean use at least once a year, which can also be called 'annual prevalence'.[6] 'Regular use' is defined as use at least once within the last month.[6] Given the wide availability of licit and illicit amphetamines, their varied functions and forms and the large number of people able to use them occasionally without suffering severe drug-related harm, these definitions are problematic and provide a very limited understanding of the nature, severity and context of use. For example, people who snorted amphetamine at a party a single time are grouped with people who smoke methamphetamine in chronic binges, and students who take a pill once a month while writing a paper are grouped with people who inject multiple times a day.

'Heavy' use and 'binges', two terms used often in this chapter, are better indicators of problematic use of amphetamines and are much more closely correlated with severe harms. Heavy use is usually defined as several times a week or more over a sustained period of time, although studies may use varying definitions. A binge is characterised by periods of intensive use for a period of at least two days (often more), followed by a break.[7]

The Philippines, Australia, New Zealand, El Salvador, the United States, Estonia, Denmark and the United Kingdom report the highest prevalences of annual amphetamine use in their general populations.[1] Asia is home to almost two-thirds of the world's methamphetamine users, while Oceania has the highest regional prevalence of annual use.[8] After marked increases in the 1990s, use of amphetamines in the United States[9] and the European Union[10] seems to be stabilising or even decreasing. There appears to be little use of amphetamines in most countries of Latin America, where cocaine is more popular and more accessible.[1] Amphetamines use is low but appears to be increasing in the Middle East.[4] Almost no data is available from Africa, but methamphetamine now accounts for nearly half of drug treatment admissions in South Africa.[11]

When considering the use of methamphetamine, it is important to maintain a critical perspective on reports of increased use. In the United States, for example, methamphetamine has been the focus of exaggerated media claims about prevalence of use and effects on health and society. While it is true that there are a significant number of people who use methamphetamine in the US, rates of problematic use and treatment demand remain lower than those for cocaine or heroin and are a tiny fraction of the rates for alcohol or marijuana. Despite frequent statements in the media about the 'epidemic' of methamphetamine use, only 0.2% of Americans use methamphetamine once a month or more, and rates of use have not increased since 1999.[9] Treatment guidelines from Australia, a country with one of the world's highest prevalences of methamphetamine use, state that only 3% of methamphetamine users will use on a frequent, habitual basis.[7]

Forms and routes of administration

Amphetamines are produced in pill, powder, crystalline and liquid forms. They can be swallowed, snorted, smoked, injected or inserted anally. The crystalline form (often called crystal meth, ice or glass) is most often smoked. It is usually more pure than other forms as it is difficult to produce crystals with impure materials.[12]

The relative popularity and availability of different forms of amphetamines vary according to region. In Asia, the main markets for crystal methamphetamine (shabu) are in Japan, the Philippines and Malaysia, and use is increasingly widespread in China. In Southeast Asia, methamphetamine pills (yaba or yama) were long the most popular form of amphetamines, but crystal methamphetamine produced in illicit commercial laboratories is growing in popularity. Asian use of methamphetamine has been intimately linked with economic growth and the demands placed on workers by a rapidly developing economy.[13] In the European Union, amphetamine use is more prevalent than methamphetamine use. Relatively high levels of methamphetamine use are reported only in the Czech Republic, Estonia and the United Kingdom. Use of crystal methamphetamine as opposed to other amphetamines is reported to be increasing in Australia and New Zealand.[10]

Commercially produced illicit drugs were rarely available in the Soviet Union, and users prepared their own amphetamines (usually called vint, pervitin or belyi) from locally available precursors. After the fall of the Soviet Union, users in Eastern Europe and Central Asia did not, for the most part, transition to commercially produced amphetamines. Instead, homemade methamphetamine, methcathinone or cathinone mixtures synthesised from ephedrine, pseudoephedrine, and, more recently, phenylpropanolamine remain the primary amphetamines in the region.[14]

Although it can be prepared in just forty-five minutes, methamphetamine production requires the greatest amount of time, skill and equipment, and it elicits a more toxic reaction. In contrast, methcathinone can be prepared in about twenty minutes.[14] Cathinone can be prepared in just a few minutes without heat, but homemade preparations appear to have weak effects that last as little as a few minutes. Though sometimes available as powder or crystals, these drugs usually come in liquid form, with a high volume required to obtain the desired effects. Users sometimes begin by drinking the solution, but often move to injecting after a period of use. The variety of precursors and cooking methods involved means that users and even cooks often do not know exactly what substance they are preparing and using.[14]

Harms related to the use of amphetamines

Unwelcome side effects

Amphetamines can cause anxiety, insomnia and aggression.[15] The use of very high doses of methamphetamine can cause chest pain, hypertension, tachycardia and other cardiac arrhythmias[16] and increase the risk of stroke, seizures, cerebral haemorrhage and death.[17] High doses, particularly in the context of repeated binges, can cause temporary psychosis that includes mood swings, visual, auditory and sensory hallucinations, paranoia, delusions, obsessive thought patterns, impulsivity and the potential for aggression.[18]

Heavy or long-time users often experience 'speed bugs', the feeling that insects are crawling under their skin. They pick at the bugs and sometimes try to cut them out, causing large wounds that may become infected and can even be fatal.[19] Psychotic symptoms usually subside with reduction of use, although this is not always the case for those predisposed to psychosis.[20]

Amphetamines can induce or exacerbate depression and anxiety disorders and trigger existing mental illnesses such as schizophrenia.[21] A study of people with pre-existing psychotic disorders found that those using amphetamines or cocaine at baseline were eight times more likely to commit suicide.[22] The paranoia, psychosis, fatigue and intense depression associated with amphetamine binges may prevent users from approaching service sites.[23]

Long-term use of methamphetamine can cause painful or irregular menstruation.[24] This can have important implications, as women users may assume they cannot become pregnant and stop using contraception or they may become pregnant without realising it until relatively late.

As methcathinone is metabolised, breakdown products are exuded from the skin. This can give chronic users a very unpleasant body odour.[25]

Withdrawal

Withdrawal symptoms after long-term or heavy use of amphetamines can include fatigue, anxiety, irritability, depression, inability to concentrate, muscle aches, tremors, increased appetite and suicidality,[15] as well as insomnia, hypersomnia (excessive sleepiness), paranoia and aggression.[26] Methcathinone and cathinone withdrawal symptoms can also include a runny nose and nosebleeds, cravings for sweets, muscle spasms and joint pain.[25]

Withdrawal symptoms often subside after about a week, though the duration of typical withdrawal remains unclear. The length and severity of withdrawal varies depending on drug dose, purity and route of administration, as well as on the age and general health of the user.[26]

Neurotoxic effects and neurological damage

A growing body of evidence has associated chronic methamphetamine use with persistent changes in neurotransmitter systems, although the functional results of these changes in humans are not yet clear.[27] They appear to cause depression in some people and to have negative effects on memory, attention and other cognitive functions, although cessation of use may result in a return to more normal neurotransmitter function.[27] High doses of amphetamines can cause permanent damage to the nerve endings of serotonin and dopamine neurons. This may become apparent only later in life, when this damage is augmented by age-related dopamine and serotonin neuron loss and manifests in disorders such as Parkinson's Disease or depression.[27]

In recent years, methcathinone use has been associated with Parkinsonism in Russia, Ukraine, Estonia and Azerbaijan.[28] It is assumed that this is due to toxic effects of the potassium permanganate (manganese) used to synthesise methcathinone and cathinone. It is not yet clear whether these symptoms resolve with cessation of use; the symptoms of some people exposed to high levels of manganese in the workplace continued to progress after exposure ceased.[28]

Mortality and overdose

Mortality related to amphetamines is likely to be much lower than that related to opiates.[29] An Australian analysis of methamphetamine-associated deaths showed that only 17% were the direct result of methamphetamine toxicity alone, while combined drug toxicity was the cause of 51% of deaths. Opiates, benzodiazepines and antidepressants were the most common drugs present with methamphetamine. Levels of methamphetamine toxicity varied.[30] Opiates can cause respiratory depression that can lead to cardiac failure, whereas alcohol and methamphetamine increase blood pressure and thus the risk of cardiovascular crisis. Methamphetamine masks the effects of alcohol and opiates, allowing people to underestimate their intoxication and increasing the risk of accidents and overdose. Cocaine and methamphetamine taken together increase the risk of cardiotoxic effects from both drugs.[31] In the Australian study, underlying cardiovascular pathology was found in a substantial proportion of the deaths. Hyperthermia was also implicated in some deaths. It seems that mental illness is a significant factor

in methamphetamine-related deaths as 14% of total deaths and one-third of overdoses examined were determined to be suicides.[30]

Injecting

The basic risks associated with injecting amphetamines are largely the same as those of opiate injecting, including HIV, hepatitis, endocarditis, abscesses, sepsis and collapsed veins. Injecting patterns, however, appear to differ somewhat. Whereas opiate-dependent people tend to inject a few times a day every day, provided that drugs are available, amphetamines users are more likely to have periodic binges of days or even weeks during which they inject many times a day. It should be noted, however, that this is not universally true: a US study found that daily methamphetamine injectors had an average of two injections per day.[32] Another US study found that methamphetamine users visited syringe exchanges less frequently and took larger numbers of syringes on a single visit, reducing opportunities to interact with them and offer additional services.[33] Some studies have shown that women and men who have sex with men (MSM) who inject methamphetamine are more likely to engage in high-risk sexual behaviours. That said, it is difficult to make generalisations, as studies have found substantial variations in patterns of use and risk behaviours among people who inject amphetamines.[1]

Smoking and snorting

As compared with heavy opiate users, heavy users of amphetamines are more likely to smoke rather than inject, especially if they are using crystal methamphetamine. The dehydration caused by amphetamines use can cause users' lips to crack and bleed, making them more likely to contract and transmit infections via shared smoking paraphernalia. Smoking on foil or in a pipe can cause burns to the fingers and face, and using contaminated containers (e.g. paint cans) or inappropriate materials (e.g. plastic containers) can lead to inhalation of toxic fumes.[34] Straws used for snorting amphetamines can become contaminated with blood and thus transmit blood-borne viruses, notably hepatitis C.

Sexual risk

Much of the discussion of amphetamines-related harm has focused on sexual risk-taking associated with methamphetamine use, especially among MSM. Studies, the majority of them from North America, Australia or Western Europe, have found conflicting evidence about a causal link between methamphetamine use and HIV. Though some have documented increased sexual risk behaviour among amphetamines users, it is difficult to untangle the relationship between amphetamines and sex.[1] Many people intentionally use the disinhibiting effects of amphetamines to facilitate sex, including high-risk sex. Amphetamines use is prevalent in many settings in which high-risk sex is already occurring, and people inclined to take the risk of drug use may also be inclined to engage in high-risk sex.[1] On the other hand, the confidence and impulsivity produced by amphetamines may make users more likely to forgo condoms or engage in other risk behaviours.

There is good reason to believe that amphetamines can increase the likelihood of infection during sex: they dry mucous membranes, decrease sensitivity of the genital and rectal areas and delay orgasm, increasing the risk of torn membranes vulnerable to infection.[35]

Risks for people living with HIV

Research suggests that amphetamines use by people living with HIV is associated with increases in viral replication and viral load, even among people receiving antiretroviral therapy [ART]. It may also alter the metabolism of HIV medications and negatively affect HIV-related dementia.[27] The effects of methamphetamine may be stronger for people taking some protease inhibitors, especially ritonavir, which could increase the risk of overdose.[36] Frequent use of amphetamines has been linked to increased risk of lymphoma in people living with HIV.[37]

Amphetamines and pregnancy

Use of amphetamines during pregnancy does not appear to cause congenital defects. It has been associated with elevated risks of heart defects[38] and cleft lip and palate[39] in studies in which the subjects used multiple drugs, confounding results. Use of amphetamines in pregnancy has also been correlated with low birth weight, premature birth, post-partum haemorrhage and retained placenta.[40] Large-scale studies of the effects of prenatal exposure to methamphetamine are in their early stages.

As with better-studied drugs such as cocaine and heroin, it is important to remember the complex of factors that affect the course of a pregnancy, and to be wary of blaming the drug itself for all negative outcomes. For example, poor nutrition, irregular sleep patterns, tobacco use, alcohol use and lack of access to prenatal care have a greater effect on pregnancy outcome than cocaine use in itself.[41] Heavy use of amphetamines often leads to poor nutrition, lack of sleep, increased tobacco use and difficulty planning ahead and keeping appointments, meaning that pregnant users are at risk for many of the factors that contribute to a high-risk pregnancy. Harm reduction measures to deal with this set of risks, along with drug treatment, are likely to be effective in improving pregnancy outcomes.

Production and environmental harms

Illicit synthesis of amphetamines can be dangerous for cooks and the people around them. Chemical processes involved in the production of amphetamines require and produce flammable, carcinogenic, poisonous and caustic substances.[42] [14] Some of these can cause explosions if managed improperly. These risks are greater if cooks have poor knowledge of chemical processes or if their judgement is impaired by drug use or other factors. Chemicals can spread into surrounding areas and contaminate soil and water. Proper clean up of methamphetamine labs is expensive, time-consuming and at times dangerous.[42]

Harm reduction for people who use amphetamines

Harm reduction for people who use amphetamines follows the same fundamental principles as harm reduction for opiate users: meet users where they are, give them the information, means and opportunities for positive change and organise programmes around their needs rather than imposing external demands. Many aspects of harm reduction programmes for people who use amphetamines are identical to those of programmes for opiate users. These include provision of safer injecting supplies and accurate information; mobile services and outreach workers to access users unwilling or unable to come to a harm reduction site; engagement of active and former drug users as staff members, volunteers and advisors; and referrals and assistance in accessing other needed services.

Some harm reduction programmes, designed for and accustomed to work with opiate users, are daunted by the idea of working with amphetamines users. There are indeed some differences in basic needs. For example, in many settings users are more likely to smoke amphetamines than opiates, and the psychological problems associated with heavy use can make them seem more 'difficult' than opiate users as clients. Use of amphetamines may lead to paranoia, confusion, impulsiveness and memory and attention lapses that make it challenging to counsel users. Finally, there is almost no access to pharmacological treatment for dependence on amphetamines. This can be disconcerting to providers accustomed to being able to offer treatments as straightforward and effective as methadone and buprenorphine.

Fortunately, experience from various countries has shown that harm reduction programmes can respond effectively to harms associated with the use of amphetamines. Table 3.4.1, developed using several existing resources, [23 34 43 44 45 46] presents key aspects of harm reduction interventions for people who use amphetamines. These approaches are useful not only for harm reduction service providers, but also for users, friends and family, and primary and emergency health care providers and law enforcement personnel in contact with people who use amphetamines. There may be a role for harm reduction service providers in training others to respond appropriately to amphetamines-related harms.

Table 3.4.1: Responding to harms associated with the use of amphetamines

Area	Behaviour	Harm	Harm Reduction Strategy
Hydration, nutrition and hygiene	• Forgetting to eat and drink • Eating only junk food • Not sleeping	• Malnutrition and dehydration • Increased risk of anxiety, paranoia and psychosis • Decreased high, need for higher dose to achieve the same effects • Intensified 'crash'	• Provide water, juice and healthy food where possible, especially for homeless, marginally housed and impoverished users • Stress the need to sleep or at least rest in a darkened room, eat healthy food (especially fruits and vegetables) and drink water regularly. Point out that these are not abstract health concerns, but have immediate positive effects on the experience of day-to-day use
	• Forgetting to drink water and brush teeth • Eating sugary foods • Grinding teeth	• Dry mucous membranes more vulnerable to infection • Dental problems	• Stress the importance of hydration and dental hygiene • Distribute toothbrushes and toothpaste
Moderating patterns of use	• Binges (heavy use over a period of days or weeks)	• Increased risk of amphetamines-induced psychosis, as well as paranoia, anxiety and other health problems	• Encourage users to plan for breaks in advance. Develop methods to help them keep track of how long and how much they have been using, take a break at the limit they have set for themselves, eat well before using and stay hydrated while using. When introducing and implementing these new plans it can be helpful for the user to have a 'harm-reduction buddy', someone they trust who can support their efforts
	• Heavy use	• Withdrawal and 'crashes'	• Stress that depression, fatigue, moodiness and aches are a natural part of withdrawal and will pass with time • Inform users that focusing on pleasant, distracting activities; keeping close to supportive people; and maintaining a healthy diet and routine will help them to manage withdrawal and crashes • After the crash is over, help users develop their own strategies to reduce crashes, using the same tactics effective for episodes of paranoia and psychosis

Reducing harms related to modes of use	• Sharing injecting equipment • Sharing mouthpieces, including jagged ones • Smoking with toxic materials • Using pipes that can easily cause burns	• Risk of blood-borne diseases, lung damage, toxicity, cuts and burns	• Distribute sterile injecting equipment and information on safer injecting • Distribute glass stems with gauze or individual pipe tips • Teach users how to make safer pipes • Distribute lip balm and burn salve
	• Transition to smoking and injecting or to more potent forms (e.g. crystal meth)	• Dependence develops more quickly and is more severe among users who inject and who use more potent forms • Increased risk of blood-borne viruses	• Inform users who swallow or snort about the risks of injecting and smoking and about safer injecting and smoking techniques • Encourage users not to transition to a more intense route • Give users who inject or smoke appropriate information about safer methods and encourage them to transition to snorting or swallowing if possible • Inform users that smoking from a pipe produces a faster and more intense high than smoking on foil and inhaling smoke through a tube or smoking from a joint, and that switching to one of these methods is another harm reduction strategy
	• Injecting many times in one sitting	• Increased risk of vein and tissue damage, missed shots, infection and other injection-related harms	• Use a butterfly needle scheme, eliminating the need to enter the vein repeatedly and repeat the risk of associated harms. Distribute appropriate supplies and teach participants how to use them
Managing paranoia, delusions and anxiety	• Picking at 'speed bugs'	• Open wounds that can become infected	• Use measures described above to deal with delusions • It may be helpful to create non-invasive 'treatments' for the bugs to calm the user during acute episodes
	• Exhibiting signs of paranoia, delusions and/or acute anxiety	• Risk of harm to self or others	• Be calm and reassuring • Take user to a quiet, calming place and try to turn their attention to something else • Take users seriously and do not tell them that they are delusional as this can upset them more. Validate their experience while avoiding acknowledging that it is real (if you are certain that it is not) • Help users recognise the ways in which paranoia and anxiety are associated with patterns of drug use and with harms such as violence or arrest • Do not sit behind a desk, take notes or have the client face doors or windows • Apply cool compresses to the neck, underarms, backs of the knees and forehead to help lower body temperature • Provide plenty of hydrating fluids (nothing caffeinated or sugary) • If available, small doses of benzodiazepines can be helpful, as can 50–100 ml of diphenhydramine (Benadryl/Dimedrol) • When user is not high, discuss strategies to reduce the occurrence of anxiety, paranoia and psychosis, including diet, hydration, sleep, breaks, moderation of dose, routes of administration and setting • Users who are acutely psychotic or aggressive, appear to be a danger to themselves or others, or are experiencing symptoms of acute toxicity need medical attention. For psychological symptoms this includes benzodiazepines and, in acute cases, anti-psychotics. If vital signs are significantly elevated, an IV line, cardiac monitoring and emergency care may be needed. If appropriate, it is important to check for breathing and use rescue breathing if needed • Harm reduction providers should not risk their own safety if a situation appears to be dangerous
Managing harms of associated activities and 'functional' use	• Sexual risk	• HIV and STIs	• Provide free access to condoms, lubricant and information about STIs and HIV • Emphasise the special importance of using plenty of lubricant during long, dry or rough sex • Provide low-threshold access to HIV and STI testing and treatment, as well as to contraception and pregnancy testing and counselling • Understand and acknowledge the role that amphetamines play in the sexual lives of users. Rather than perceiving amphetamines as the sole source of risk, understand that many people use them to facilitate sexual activity. Discuss pleasure and functionality along with risk to allow more sophisticated strategies of risk reduction • Develop a sexual harm reduction plan in advance, discussing realistic ways to reduce sex-related harms in the context of users' lives • Talk not only about HIV and STIs, but also about sexual and physical violence, transactional and commercial sex, abusive relationships, housing and other issues intimately related to sexual risk behaviours. Addressing the context of sexual risk and developing a plan to make behaviours less dangerous is often the best way to support users in reducing risk
	• Using amphetamines to control weight	• Dependence, excessive weight loss, other harms associated with use	• Recognise that some people, especially women, use amphetamines to lose or control weight and fear gaining weight if they stop using • Discuss this fear with users and help them to develop a plan to prevent or manage weight gain, while exploring the issues underlying poor body image
	• Use of amphetamines for work or study	• Dependence, other harms associated with use	• Remind users that while amphetamines can initially help sustain attention and endurance for long periods of time, heavy use eventually makes it very difficult to complete a task, focus or behave appropriately in work or study settings • Organise separate support groups to respond more accurately to the needs of people who use amphetamines for different reasons. Truck drivers who use methamphetamine while working, for example, are likely to have very different concerns than teenagers who use it at raves or sex workers who use it to endure harsh working conditions

Drug dependence treatment

Because there is as yet no widely accepted medication-assisted treatment for amphetamines dependence and because the psychological side effects of heavy amphetamines use can make traditional drug treatment counselling methods impractical, it is sometimes believed that dependence on amphetamines cannot be treated. This is not true, though there remains a shortage of evidence-based treatment specific to amphetamines.

Evidence supports the effectiveness of behavioural interventions, particularly cognitive behavioural therapy and contingency management, and guidelines have been developed in Australia and the United States.[47] One model that has demonstrated success is the Matrix Model, which integrates cognitive-behavioural therapy, family education, social support and individual counselling in a non-confrontational, non-judgmental style reinforced by peers.[48] While some believe that the long-term psychological effects of heavy amphetamines use mean that users require long-term treatment,[49] others have found significant increases in abstinence following a session of motivational interviewing and behavioural therapy lasting only two to four hours.[50]

The stepped care approach is a way of adjusting interventions to the needs and motivation levels of individual clients. This approach begins with provision of the least intensive intervention and offers the possibility of scaling up into longer and more intensive ones. It has the added benefit of maximising resources by avoiding unnecessarily intensive interventions and thus increasing the number of people who can be provided with services.[2]

Pharmacotherapy for dependence on amphetamines is still in trial phases. In England, an experimental substitution treatment programme that prescribed a set dose of 30 mg/day of dexamphetamine sulphate found that half the subjects stopped injecting and the remainder reduced injection significantly; 85% had not used or shared injecting equipment after entering treatment.[51] Modafinil, buproprion and methylphenidate are also under investigation, but the results are not yet conclusive.[52]

Next steps for reducing harms related to amphetamines use

The first priority for the international harm reduction community should be to support the development, evaluation and expansion of harm reduction interventions specific to amphetamines. Though the evidence base for these interventions is not yet as substantial as that for harm reduction interventions among opiate users, the positive experience of programmes in several countries suggests their value. Research on these interventions should be prioritised, but in the meantime it is important to expand the range of services available to amphetamines users and to work to reduce the spread of HIV and other harms in this group. Harm reduction providers in many countries have expressed their need for training on work with amphetamines users, and efforts should be made to make such trainings available as soon as possible. The experience and knowledge of service providers in countries such as the United States or Australia can be used to develop expertise in regions such as Eastern Europe, Southeast Asia or South Africa.

Next, treatment for amphetamines users needs to be demystified. There is significant research on treatment modalities and some guidelines already exist. Interventions specific to amphetamines should be implemented and evaluated in other regions, and international guidelines for treatment should be developed and promoted.

Service providers, researchers and policy-makers also need to consider the role of drug policy in harms related to amphetamines. On a macro level, it is clear that efforts to suppress one drug often lead only to the 'substitution' of another that is more easily or cheaply available.[53] For example, efforts to suppress opium production in Asia led to a boom in production of amphetamines.[54] Vigorous and even violent prohibition efforts succeeded only in replacing one drug with another that is equally or more harmful. This experience indicates the need to re-examine global drug policy.

On a more local level, experience in countries as varied as Australia and Ukraine suggests that attempts to control precursors of amphetamines can lead to increased harms associated with their use. Decreased availability of cold medicines has been linked to increased pharmacy break-ins in Australia[55] and to a shift in Ukraine to more neurotoxic preparations made using less tightly regulated precursors.[56]

Prohibition can push production, trafficking and use towards more potent, easily concealable and transportable forms of drugs.[13] More potent forms and more direct methods of administration – for example, injecting crystal meth instead of taking amphetamine pills – are more likely to cause dependence and other harms, including HIV infection. Moreover, punitive policies and law enforcement practices can push drug users to use quickly and wherever they can (e.g. in an alley), inhibiting their ability to practice harm reduction.[53] Policy-makers and advocates need to consider the consequences of prohibition and explore other methods of reducing problem drug use, notably drug treatment, harm reduction and evidence-based drug education targeted at high-risk groups. Further research on the relationship between drug policy, drug use patterns and associated harms would be useful in supporting more effective public-health-oriented drug policies.

Finally, service providers need to take into account the role of production methods in harms related to amphetamines. Especially in situations in which users produce drugs themselves, a change in production methods could reduce neurotoxic effects, environmental hazards and perhaps other harms. Region-specific research into drug production methods could give providers and users a better understanding of exactly what drug they are synthesising and its specific dangers. It would be useful to explore the possibility of developing harm reduction interventions related to production, as well as the legal, political or ethical questions that such interventions might raise.

References

1. Reference Group to the United Nations on HIV and Injecting Drug Use (2008) *The Global Epidemiology of Meth/Amphetamine Injection: A Review of the Evidence on Use and Associations with HIV and Other Harm*. Sydney, NSW: National Drug and Alcohol Research Centre, University of New South Wales.
2. Lee N et al. (2007) *Clinical Treatment Guidelines for Alcohol and Drug Clinicians*. No. 14: Methamphetamine Dependence and Treatment. Fitzroy, VIC: Turning Point Alcohol and Drug Centre Inc., p. 1.
3. Gahlinger P (2004) *Illegal Drugs*. New York: Plume, pp. 236–7.
4. United Nations Office on Drugs and Crime (UNODC) (2008) *Amphetamines and Ecstasy: 2008 Global ATS Assessment*. New York: United Nations.
5. UNODC (2009) *World Drug Report*. New York: United Nations, p. 115.
6. UNODC (2006) *World Drug Report*. New York: United Nations, p. 8.
7. Lee et al. (2007)op. cit. p. 4.
8. UNODC (2005) *World Drug Report*. New York: United Nations.
9. King R (2006) *The Next Big Thing? Methamphetamine in the United States*. Washington, DC: The Sentencing Project.
10. European Monitoring Centre for Drugs and Drug Addiction (2010) *Annual Report 2009: The State of the Drugs Problem in Europe*. Luxembourg: Publications Office of the European Union.
11. Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit. p. 49.
12. Global Methamphetamine Conference: www.globalmethconference.com/methamphetamine/index.php (last accessed 22 December 2009).
13. Kramer T, Jelsma M, Blickman T (2009) *Withdrawal Symptoms in the Golden Triangle: A Drugs Market in Disarray*. Amsterdam: Transnational Institute.
14. Grund JP et al. (2009) Stimulant use in Central and Eastern Europe: How recent social history shaped current drug consumption patterns, in *Interventions for Amphetamine Misuse*, ed. Pates R and Riley D. Chichester: Wiley-Blackwell/Addiction Press, pp. 179–80.
15. Barr A et al. (2006) The need for speed: An update on methamphetamine addiction. *Journal of Psychiatry and Neuroscience* 31(5): 301–13, p. 303.
16. Kaye S et al. (2008) Methamphetamine-related fatalities in Australia: Demographics, circumstances, toxicology and major organ pathology. *Addiction* 103: 1353–60, p. 1353.
17. Lee et al. (2007) op. cit. p. 7.
18. Jenner J et al. (2004) *Management of Patients with Psychostimulant Use Problems – Guidelines for General Practitioners*. Canberra, ACT: Australian Government Department of Health and Ageing.
19. Gahlinger (2004) op. cit. p. 220.
20. Dawe and McKetin (2004) cited in Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit.
21. Lee et al. (2007) op. cit.
22. Gonzalez-Pinto et al. (2007) cited in Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit.
23. Kingston S (2004) Harm Reduction for Methamphetamine Users. *The Body*. www.thebody.com/content/art2121.html?ts=pf (last accessed 22 December 2009).
24. Lee et al. (2007) op. cit. p. 3.
25. Gahlinger (2004) op. cit. p. 237.
26. Lee et al. (2007) op. cit. p. 6.
27. Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit. p. 19.
28. De Bie R et al. (2007) Manganese-induced Parkinsonism associated with methcathinone (ephedrone) abuse. *Archives of Neurology* 64(6): 886–9.
29. Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit. p. 23.
30. Kaye et al. (2008) op. cit. p. 1356.
31. Pennay A and Lee N (2008) Prevention and early intervention of methamphetamine-related harm. *Prevention Research Quarterly*, Drug Info Clearinghouse, p. 3.
32. Molitor F et al. (1999) Methamphetamine use and sexual and injection risk behaviors among out-of-treatment injection drug users. *American Journal of Drug and Alcohol Abuse* 25(3): 475–93.
33. Zule et al. (1999) cited in Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit.
34. Southwell M and Miller T. Personal communication with the Gold Standard Team on the Stimulant Harm Reduction Intervention.
35. Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit. p. 16.
36. Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit. p. 20.
37. Chao C et al. (2009) Recreational amphetamine use and risk of HIV-related non-Hodgkin lymphoma. *Cancer Causes and Control* (20)5: 509–16.
38. Bateman DN et al. (2004) A case control study to examine the pharmacological factors underlying ventricular septal defects in the North of England. *European Journal of Clinical Pharmacology* 60(9): 635–41.
39. Thomas DB (1995) Cleft palate, mortality and morbidity in infants of substance abusing mothers. *Journal of Paediatrics and Child Health* 31: 457–60.
40. Little BB, Snell LM, Gilstrap LC (1988) Methamphetamine abuse during pregnancy: Outcome and fetal effects. *Obstetrics and Gynecology* 72: 541–4.
41. Frank D et al. (2001) Growth, development, and behavior in early childhood following prenatal cocaine exposure: A systematic review. *JAMA* 285(12): 1613–25.
42. Gahlinger (2004) op. cit. p. 213.
43. American Dental Association. Methamphetamine Use (Meth Mouth): www.ada.org/prof/resources/topics/methmouth.asp (last accessed 22 December 2009).
44. Anderson R (2009) *Notes: Methamphetamine, Women, and Harm Reduction*. Vilnius: Eurasian Harm Reduction Network, pp. 4–5.
45. Western Australian Substance Users Association (2007) *The Ups and Downs of Using Meth. Staying Safe and Healthy: A Resource for Users by Users*. Mt Lawley, WA: Government of Western Australia Drug and Alcohol Office.
46. Lee et al. (2007) op. cit. p. 5.
47. Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit. p. 53.
48. Rawson et al. (2004) cited in King (2006) op. cit.
49. Rawson R, Anglin MD, Ling W (2002) Will the methamphetamine problem go away? *Journal of Addictive Diseases* 21(1): 5–19.
50. Pennay and Lee (2008) op. cit. p. 6.
51. Fleming PM and Roberts D (n.d.) Is the prescription of amphetamine justified as a harm reduction measure? www.drugtext.org/library/articles/flem01.htm (last accessed 22 December 2009).
52. Lee et al. (2007) op. cit. p. 11.
53. Roberts M, Trace M, Klein A (2004) *Law Enforcement and Supply Reduction*. London: The Beckley Foundation Drug Policy Programme, p. 6.
54. Kramer et al. (2009) op. cit. p. 52.
55. O'Brien et al. (2007) cited in Reference Group to the United Nations on HIV and Injecting Drug Use (2008) op. cit.
56. Case P, Chintalova-Dallas R, Lazzarini Z (2008) *Multi-disciplinary Studies of Emerging Drugs: The Case of Boltushka in Odessa, Ukraine*. Yale AIDS Colloquium Series. New Haven, CT: Yale School of Public Health.

3.5: Out of sight, out of mind? Harm reduction in prisons and other places of detention

About the authors:

Ralf Jürgens is a consultant working on issues related to health and human rights, including prisons, and a co-founder and former Executive Director of the Canadian HIV/AIDS Legal Network. Rick Lines is an expert in human rights, health and prisons and Deputy Director of IHRA. Catherine Cook is Senior Analyst in the Public Health, Research and Policy team at IHRA.

The authors would like to acknowledge the contribution of Annette Verster and Andrew Ball to a review of the evidence on HIV in prisons previously published by the WHO.

[B]y entering prisons, prisoners are condemned to imprisonment for their crimes; they should not be condemned to HIV and AIDS. There is no doubt that governments have a moral and legal responsibility to prevent the spread of HIV among prisoners and prison staff and to care for those infected. They also have a responsibility to prevent the spread of HIV among communities. Prisoners are the community. They come from the community, they return to it. Protection of prisoners is protection of our communities.
United Nations Commission on Human Rights (1996)[1]

Introduction

The rates of HIV prevalence among prisoners and detainees[a] are significantly higher than those in the general population in many countries. Hepatitis C virus (HCV) prevalence rates are even higher than those of HIV. Since the early 1990s a number of countries have introduced HIV prevention programmes in prisons. However, many of them are small in scale and restricted to a few prisons and even fewer pre-trial detention facilities. Most also exclude necessary evidence-based interventions, in particular needle and syringe programmes (NSPs) and opioid substitution therapy (OST). Even where countries have adopted harm reduction in their responses to drug-related harms outside prisons, they often fail to do so in prisons and other places of detention. To date, only ten countries have NSPs operating in at least one prison and less than forty countries have some form of OST in at least one prison. There is therefore an urgent need to introduce comprehensive programmes and to scale them up rapidly.

a Different jurisdictions use different terms to denote places for detaining people who are awaiting trial, who have been convicted or who are subject to other conditions of security and to describe the various groups of people who are detained. Here, the term 'prison' is used for all places of detention and the term 'prisoner' describes all who are held in such places, including males and females detained in criminal justice and prison facilities during the investigation of a crime, while awaiting trial, after conviction and before sentencing, and after sentencing. Although the term does not formally cover persons detained for reasons relating to immigration or refugee status, those detained without charge and those sentenced to compulsory 'treatment' and 'rehabilitation' centres as they exist in some countries, most of the considerations in this paper apply to them as well.

Prevalence of HIV and HCV in prisons

HIV surveillance has been the most common form of HIV research in prisons, although this has largely been restricted to high-income countries. Data from low- and middle-income countries are more limited, tend to be varied and unsystematic and, in many cases, are not recent enough to provide an accurate picture of the current situation in prisons.[2] Even in high-income countries, the precise number of prisoners living with HIV is difficult to estimate. Rates of HIV infection reported from studies undertaken in a single prison or region may not accurately reflect HIV prevalence in all prisons or regions within a country.

More thorough and systematic research is needed to provide an accurate picture of the current situation of HIV in prisons. Nevertheless, existing reviews show that HIV infection is a serious problem that requires immediate action. In many prison systems, rates of infection are several times higher than in the community outside prisons and this is primarily attributed to injecting drug use prior to incarceration.[3] In other systems, elevated HIV prevalence rates reflect the high HIV prevalence rates in the general population.[4] Everywhere, the prison population consists of individuals facing greater risk factors for contracting HIV (and HCV and TB) than the general population outside prisons. Such characteristics include injecting drug use, poverty, alcohol abuse and living in medically underserved and minority communities.[5]

Studies have shown HIV prevalence ranging from zero in a young male offenders' institution in Scotland[6] and among prisoners in Iowa, United States,[7] to 33.6% in an adult prison in Catalonia, Spain,[8] to over 50% in a female correctional facility in New York

City.[9] As early as 1988 about half of the prisoners in Madrid[10] and 20% of prisoners in New York City tested HIV positive.[11] The highest HIV prevalence reported among a national prison population was in South Africa, where estimates put the figure at 41.4%.[2] Conversely, some countries report zero prevalence; most of these are in North Africa or the Middle East.[2]

HCV prevalence rates in prisons are even higher than HIV rates. A 2004 review of all published studies of HCV in prisons estimated that 30% to 40% of all prisoners in the US were infected with HCV.[3] While WHO estimates that about 3% of the world's population has been infected with HCV,[12] estimates of the prevalence of HCV in prisons range from 4.8% in an Indian jail[13] to 92% in two prisons in northern Spain.[14]

Within prison populations, certain groups have higher levels of infection. In particular, the prevalence of HIV and HCV infection among women tends to be higher than among men.[4]

Drug use in prisons

Many prisoners have a history of drug use before they enter prison.[15] In 1999, 68% of all new prison admissions in the US tested positive for an illegal drug in urine screening[16] and similar findings have been reported across Europe,[17] North America and Australia.[18] In other parts of the world, the situation is less clear because of the lack of systematic research,[19 20] but in many countries histories of drug use among prisoners are common. In fact, a large percentage of prison populations around the world have been sentenced for drug-related offences. These may be crimes related to drug production, possession, trafficking or use or crimes committed to acquire resources to purchase drugs. Many prison systems have seen increases in their population (and consequent overcrowding) attributable in large measure to a policy of actively pursuing and imprisoning those dealing with and consuming illegal substances.[21]

For people who inject drugs, imprisonment is a common event; studies from a large number of countries report that between 56% and 90% of people who inject drugs are imprisoned at some stage.[22 23 24] Multiple prison sentences are more common for prisoners who inject drugs than for other prisoners.[25] The percentage of prisoners with a history of injecting drug use varies from prison to prison; studies have found, for example, that it was 11% in England,[26] but 64% in Australia.[27 28]

Some people who use drugs prior to imprisonment discontinue their drug use while in prison. However, many carry on using, often with reduced frequency and amounts,[29] but sometimes maintaining the same level of use.[30 31] Prison is also a place where drug use is initiated, often as a means to release tension and to cope with being in an overcrowded and often violent environment.[32 33]
Injecting drug use in prison is of particular concern given the potential for transmission of HIV and HCV. Those who inject drugs in prisons often share needles and syringes and other injecting equipment, which is a very efficient way of transmitting both viruses.[34] A large number of studies from countries around the world report high levels of injecting drug use, including among female prisoners.[35 36]

Although more research has been carried out on injecting drug use in prisons in high-income countries, studies from low- and middle-income countries have found similar results. In Iran, for example, about 10% of prisoners are believed to inject drugs while incarcerated, with 95% reported to share needles.[37] Injecting drug use has also been documented in prisons in Eastern Europe and Central Asia,[38 39 40 41 42] Latin America[43] and Sub-Saharan Africa.[44 45]

HIV and HCV transmission resulting from drug use in prisons

A large number of studies from countries in many regions of the world have reported HIV and/or HCV seroconversion within prisons, or have shown a history of imprisonment to be associated with prevalent and incident HIV and/or HCV infection among people who inject drugs.[46]

HIV infection has been significantly associated with a history of imprisonment in Europe (including among female prisoners) and also in the Russian Federation, Canada, Brazil, Iran and Thailand. Using non-sterile injecting equipment in prison was found to be the most important independent determinant of HIV infection in a number of studies.[4] The strongest evidence of extensive HIV transmission through injecting drug use in prison has emerged from documented outbreaks in Australia, Lithuania, the Russian Federation and Scotland.[28 32 47 48 49]

HCV infection by sharing of injecting equipment in prison has been reported in Australia and Germany.[50 51 52]

Harm reduction in prisons: Implementation, evidence and guidance

There are evidence-based interventions that can be put in place to reduce drug-related harms within prison populations and a wealth of international guidance on implementation. In fact, it could be argued that it is even more important that these programmes reach prisoners and detainees, given their increased vulnerability to HIV and HCV infection, than people outside prison. Prison health programmes have the potential to reach vulnerable people with a broad range of services that they may not be likely to access outside prison.

Table 3.5.1: Countries and territories with NSP or OST in at least one prison[b]

Country/territory	Needle exchange in prisons	Opioid substitution therapy in prisons
ASIA		
India	x	✓
Indonesia	x	✓
Malaysia	x	✓
EASTERN EUROPE and CENTRAL ASIA		
Albania	x	✓
Armenia	✓	x
Belarus	✓	x
Croatia	x	✓
Czech Republic	x	✓
Georgia	x	✓
Hungary	x	✓
Kyrgyzstan	✓	x
Macedonia FYR	x	✓
Moldova	✓	✓
Montenegro	x	✓
Poland	x	✓
Romania	✓	✓
Serbia	x	✓
Slovenia	x	✓
MIDDLE EAST and NORTH AFRICA		
Iran	✓	✓
NORTH AMERICA		
Canada	x	✓
United States	x	✓
(Puerto Rico)	x	✓
OCEANIA		
Australia	x	✓
New Zealand	x	✓
SUB-SAHARAN AFRICA		
Mauritius	x	✓
WESTERN EUROPE		
Austria	x	✓
Belgium	x	✓
Denmark	x	✓
Finland	x	✓
France	x	✓
Germany	✓	✓
Ireland	x	✓
Italy	x	✓
Luxembourg	✓	✓
Malta	x	✓
Netherlands	x	✓
Norway	x	✓
Portugal	x	✓
Spain	✓	✓
Sweden	x	✓
Switzerland	✓	✓
United Kingdom	x	✓

b Inclusion in this table does not indicate scope, quality or coverage of intervention. In Georgia, methadone is currently provided for *detoxification* over a maximum period of three months and not for long-term maintenance; however, expansion to a maintenance programme is being considered.

Needle and syringe programmes (NSPs)

The first prison NSP was established in Switzerland in 1992. Since then NSPs have been introduced in over sixty prisons in ten countries in Europe, Central Asia and Iran (see Table 3.5.1). In some countries, only a few prisons have NSPs, however, in Kyrgyzstan and Spain, NSPs have been rapidly scaled up and operate in a large number of prisons.[c]

Germany remains the only country in which prison NSPs have been closed. NSPs had been successfully introduced in seven prisons by the end of 2000 and other prisons were considering implementing them. However, six of the programmes have since closed as a result of political decisions by newly elected conservative state governments, made without consultation with prison staff. Since the programmes closed, prisoners have gone back to hiding and sharing injecting equipment, thus increasing the likelihood of transmission of HIV and HCV.[53] Staff have been among the most vocal critics of the decision to close down the programmes and have lobbied the governments to reinstate the programmes.[4]

In most countries with prison NSPs, implementation has not required changes to laws or regulations.[d] Across the eleven countries, various models for the distribution of sterile injecting equipment have been used, including anonymous syringe dispensing machines, hand-to-hand distribution by prison health staff and/or non-governmental organisation (NGO) workers and distribution by prisoners trained as peer outreach workers.[54]

Systematic evaluations of the effects of NSPs on HIV-related risk behaviours and of their overall effectiveness in prisons have been undertaken in ten projects These evaluations and other reports demonstrate that NSPs are feasible in a wide range of prison settings, including men's and women's prisons and prisons of all security levels and sizes. Providing sterile needles and syringes is readily accepted by people who inject in prisons and contributes to a significant reduction of syringe sharing over time. It also appears to be effective in reducing resulting HIV infections.[47] At the same time, there is no evidence to suggest that prison-based NSPs have serious, unintended negative consequences. In particular, they do not lead to increased drug use or injecting, and syringes are not used as weapons.[55] Evaluations have found that NSPs in prisons facilitate referral of people who use drugs to drug dependence treatment programmes.[56 57]

Studies have shown that important factors in the success of prison NSPs include easy and confidential access to the service, providing the right type of syringes and building trust with the prisoners accessing the programme.[47] For example, in Moldova, a small number of prisoners accessed the NSP when it was located within the health care section of the prison, however, once prisoners could obtain sterile injecting equipment from fellow prisoners, trained to provide harm reduction services, the amount of equipment distributed increased significantly.[58]

Ultimately, since most prisoners leave prison at some point to return to their community, implementing NSPs in prisons will benefit not only prisoners and prison staff, but also society in general. Therefore, experts and UN agencies recommend that NSPs should be introduced in prisons and other places of detention. Following an exhaustive review of the international evidence, WHO, UNODC and UNAIDS recommend that prison authorities in countries experiencing or threatened by an epidemic of HIV infections among injecting drug users should introduce and scale up NSPs urgently.[59]

c A prison NSP has been introduced in a Portuguese prison but is currently not operating
d In some former Soviet Union countries, regulations and later legislative changes were undertaken to allow for prison NSPs.

Bleach programmes

Programmes providing bleach or other disinfectants for sterilising needles and syringes to reduce HIV transmission among people who inject drugs in the community were first introduced in San Francisco in 1986.[24] Such programmes have particularly received support in situations where opposition to NSPs in the community or in prisons has been strongest. By 1991 sixteen of fifty-two prison systems surveyed had made bleach or other disinfectants available to prisoners, including in Africa and Central America.[60] Today, bleach or other disinfectants are available in many prison systems, including in Australia, Canada, Indonesia, Iran and some systems in Eastern Europe and Central Asia.[4 55]

Evaluations of bleach programmes in prisons have shown that distribution of bleach or other disinfectants is feasible and does not compromise security. However, WHO concludes that the 'evidence supporting the effectiveness of bleach in decontamination of injecting equipment and other forms of disinfection is weak'.[56] While the efficacy of bleach as a disinfectant for inactivating HIV has been shown in laboratory studies, field studies cast 'considerable doubt on the likelihood that these measures could ever be effective in operational conditions'.[56] Moreover, studies did not find a significant effect of bleach on HCV seroconversion.[61 62] For these reasons, bleach programmes are regarded as a second-line strategy to NSPs. WHO, UNODC and UNAIDS recommend that bleach programmes be made available in prisons where 'authorities continue to oppose the introduction of NSPs despite evidence of their effectiveness, and to complement NSPs'.[60]

Opioid substitution therapy and other drug dependence treatments

The first experimental OST programme in prison, offering methadone pre-release to prisoners in New York City, was initiated in 1968.[63] The early literature noted that, in addition to Rikers Island in New York,[64] over the next twenty years such programmes either existed or had existed at some point at a prison in California (Contra Costa Country), in Rotterdam in the Netherlands, at Wolds Remand Prison in the United Kingdom[65] and in Denmark and Sweden.[66]

In Australia, a pilot pre-release methadone programme started in New South Wales in 1986 and was later expanded so that the pre-release programme became just one component of a larger prison methadone maintenance therapy (MMT) programme.[67] Initially, the programme focused on 'breaking the cycle of criminal activity associated with drug use'.[67] However, as early as 1987, it became the first prison MMT programme to move towards a HIV prevention strategy and to include the reduction of injecting heroin use and HIV and hepatitis B transmission among its objectives.[67]

Since the early 1990s, and mostly in response to raising HIV rates among people who inject drugs in the community and in prison, there has been a marked increase in the number of prison systems providing OST to prisoners. Today, prison systems in nearly forty countries offer OST to prisoners, including most systems in Canada and Australia, some systems in the US, most of the systems in the 15 'old' European Union (EU) member states,[68] Iran and Indonesia (see Table 3.5.1).[4] In Spain, according to 2009 data, 12% of all prisoners received MMT.[69] In most other prison systems, coverage is much lower.

OST programmes are also provided in some of the states that joined the EU more recently (including Hungary, Malta, Slovenia and Poland), although they often remain small and benefit only a small number of prisoners in need.[69] A few systems in Eastern Europe and Central Asia have also started OST programmes (such as Moldova and Albania) or are planning to do so soon.[59]

Reflecting the situation in the community, most prison systems make OST available in the form of MMT. Buprenorphine maintenance treatment is available in only a small number of systems, including in Australia[70] and some European countries.[71 72]

Generally, drug-free treatment approaches continue to dominate interventions in prisons in most countries.[73] OST remains controversial in many prison systems, even in countries where it is accepted as an effective intervention for opioid dependence outside prisons. Often prison administrators are not receptive to providing OST, due to philosophical opposition to this type of treatment and concerns about whether the provision of such therapy will lead to diversion of medication, violence and/or security breaches.[74]

A recent comprehensive review showed that OST, in particular with MMT, is feasible in a wide range of prison settings.[75] As is the case with OST programmes outside prisons, those inside prisons are effective in reducing the frequency of injecting drug use and associated sharing of injecting equipment, if a sufficient dosage is provided (more than 60 mg per day) and treatment is available for longer periods of time (more than six months) or for the duration of incarceration.[60 76]

A four-year follow-up study to a randomised controlled trial of MMT versus waiting list control in prison examined the longer term impact of MMT on mortality, reincarceration and HCV and HIV seroconversion. Retention in treatment was associated with reduced HCV infection, while short MMT episodes (less than five months) were significantly associated with greater risk of HCV.[77]

In addition, evaluations of prison-based MMT found other benefits for the health of prisoners participating in the programmes and for prison systems and the community. For example, reincarceration is less likely among prisoners who receive adequate OST, and OST has been shown to have a positive effect on institutional behaviour by reducing drug-seeking behaviour and thus improving prison safety.[76] While prison administrations initially raised concerns about security, violent behaviour and diversion of methadone, these problems have not emerged or have been addressed successfully where OST programmes have been implemented.[47]

WHO, UNODC and UNAIDS recommend that 'prison authorities in countries in which OST is available in the community should introduce OST programmes urgently and expand implementation to scale as soon as possible'.[76]

While OST has become increasingly available in many prison systems at least in part because of its potential to reduce injecting drug use and the resulting risk of spread of infection, other forms of drug dependence treatment have not usually been introduced in prison with HIV prevention as one of their objectives. Consequently, there is little data on their effectiveness as an HIV prevention strategy.[76] Nevertheless, good quality, appropriate and accessible treatment has the potential of improving prison security, as well as the health and social functioning of prisoners, and may reduce reoffending. Studies have demonstrated the importance of providing ongoing treatment and support and of meeting the individual needs of prisoners, including female prisoners, younger prisoners and prisoners from ethnic minorities.[76] Given that many prisoners have severe problems related to the use of illegal drugs, it is unethical not to provide people in prison with access to a wide range of drug treatment options.[77]

WHO, UNODC and UNAIDS recommend that, in addition to OST, prison authorities provide a range of drug dependence treatment options for prisoners with problematic drug use, in particular for substances such as amphetamine-type stimulants. Given the lack of data, they recommend that evaluations of their effectiveness in terms of reducing drug injecting and needle sharing should be undertaken.[76 78]

While drug-free or abstinence-based treatment should be considered as a necessary component element of comprehensive prison drug services, such programmes alone are insufficient to address the multiple health risks posed by injecting drug use and HIV transmission in prisons.

The interventions detailed above are not the only ones that contribute to addressing HIV and HCV in prisons. International guidelines recommend they be implemented in conjunction with the following necessary elements of a comprehensive programme: HIV/AIDS education; voluntary and confidential HIV testing and counselling; condom provision; prevention of rape, sexual violence and coercion; and HIV care, support and treatment, including antiretroviral therapy (ART).[4]

Effect of efforts to reduce drug supply in prisons

A broad range of search and seizure techniques and procedures are used by prison systems in an attempt to reduce the availability of drugs in prisons. These supply reduction measures include random cell searches, staff and visitor entry/exit screening and searches, drug detection dogs and other drug detection technologies, perimeter security measures and urinalysis programmes (often referred to as 'mandatory drug testing programmes' or MDT).[79]

Many prison systems, particularly in high-income countries, place considerable and growing emphasis on these measures to reduce the supply of drugs. In particular, urinalysis has been adopted as policy in several prison systems to reduce the use of and demand for drugs in prison. Urinalysis, combined with self-report surveys of prisoners, is also used to obtain an estimate of the extent of drug use[80] as well as to target programmes and treatment services.[81]

Despite substantial investments in drug supply reduction measures, there is no evidence that they lead to reduced HIV risk. Indeed, mandatory drug testing programmes may increase prisoners' risk of HIV infection. Implementing such programmes appears to contribute to reducing the demand for, and use of, cannabis in prisons, but has little effect on the use of opiates. In fact, there is some evidence that a small number of people switch to injectable drugs to avoid detection of cannabis use through drug testing. Given that smoking cannabis presents no risk of HIV transmission while injecting opiates presents a significant risk

of HIV and other health risks, the evidence that some prisoners switch from cannabis use to use of more harmful drugs by injecting is cause for concern.[76]

WHO, UNODC and UNAIDS recommend that 'improving the documentation and evaluation of supply reduction measures should be a priority for prison systems making substantial investments in such measures'. They further recommend that 'prison systems with MDT programmes should reconsider whether to include urinalysis testing for cannabis. At a minimum, they should make clear distinctions in punitive terms between those testing positive to cannabis and opiates.'[76]

Taking action for prisoners: Conclusions and next steps

The importance of implementing HIV interventions, including NSPs and OST, in prisons was recognised early in the HIV/AIDS epidemic. After its first consultation on prevention and control of HIV in prisons in 1987,[82] WHO responded to growing evidence of HIV infection in prisons worldwide by issuing guidelines on HIV infection and AIDS in prisons in 1993. With regard to health care and prevention of HIV, the guidelines emphasise that 'all prisoners have the right to receive health care, including preventive measures, equivalent to that available in the community without discrimination, in particular with respect to their legal status or nationality'.[79]

Indeed, prisoners retain all rights that are not taken away as a fact of incarceration.[83 e] Loss of liberty alone is the punishment, not the deprivation of fundamental human rights. Failure to provide access to evidence-based HIV and HCV prevention measures (in particular NSP and OST) to people in prison is a violation of prisoners' rights to the highest attainable standard of physical and mental health under international law, and is inconsistent with numerous international instruments dealing with the health of prisoners and with HIV/AIDS.[84]

This situation was recognised in the 2006 framework for an effective national response to HIV/AIDS in prisons, jointly published by UNODC, WHO and UNAIDS. The document emphasises that governments and the international community have much to do to meet their 'obligations on human rights, prison conditions, and public health' and states that preventing 'the transmission of HIV in prisons is an integral part of reducing the spread of infection in the broader society'.[85] It stresses that public health can no longer afford to ignore prison health. HIV interventions are feasible and effective in prisons and implementation of these interventions in prisons is an important component of national HIV/AIDS programmes that can no longer be neglected.

Ensuring that prisoners are included in national scale-up efforts

Very little information exists about what is being done to ensure that prison systems are an integral part of national efforts to scale up access to comprehensive HIV prevention, treatment, care and support, and there are no published studies or even guidelines on this to date. Sustainable HIV prison programmes, integrated into countries' general HIV programmes or at least linked to them, are needed.

At the *international level*, initiatives to support scale-up efforts should include a component specific to prisons and pre-trial detention and ensure that:

- Prison systems (and pre-trial detention facilities) are included in technical assistance missions
- Data about access to HIV prevention, treatment, care and support and coverage in prisons are collected and published
- Best practice models are developed and disseminated
- The public health and human rights implications of inadequate efforts in prisons are brought to the attention of policy makers.

At the *country level*:

- Prison departments (and departments responsible for pre-trial detention facilities) should have a place within the national HIV coordinating committees and the country coordinating mechanisms that develop and submit grant proposals to the Global Fund to Fight AIDS, Tuberculosis and Malaria
- Prison issues should be part of the agreed HIV/AIDS action framework and monitoring and evaluation system
- Prison departments (and departments responsible for pre-trial detention facilities) should be involved in all aspects of scale-up of prevention and treatment, care and support, from funding applications (to ensure that funds are specifically earmarked for prisons) to development, implementation, monitoring and evaluation of roll-out plans
- The ministries responsible for health, the prison system and pre-trial detention facilities should collaborate closely, recognising that prison health is public health. Alternatively, governments could assign responsibility for health care in prisons and pre-trial detention facilities to the same ministries, departments and agencies that provide health care to people in the community.

Finally, at the *regional and local levels*, prisons and pre-trial detention facilities should:

- Form partnerships with health clinics, hospitals, universities and NGOs, including organisations of people living with HIV, to provide services for prisoners
- Develop integrated, rather than parallel, care and treatment programmes.

e This can be expressed as 'limited exceptionalism'. Significantly, a number of domestic courts have recognised this principle.

Undertaking broader prison reform

Addressing HIV and HCV in prisons effectively cannot be separated from wider questions of human rights and prison reform. Prison conditions, the way in which prisons are managed and national policy all impact on HIV and HCV transmission in prisons.

Overcrowding, violence, inadequate natural lighting and/or ventilation and lack of protection from extreme climatic conditions are common in many prisons in many regions of the world. When these conditions are combined with insufficient means for personal hygiene, poor nutrition, limited access to clean drinking water and inadequate health services, the vulnerability of prisoners to HIV infection and other infectious diseases is increased, as is related morbidity and mortality. Sub-standard conditions can also complicate or undermine the implementation of effective responses to health issues by prison staff. Therefore, action to prevent the spread of infections in prisons and to provide health services to prisoners living with HIV and HCV is integral to – and enhanced by – broader efforts to improve prison conditions. Efforts to stop the transmission of HIV in prisons must start by making HIV prevention measures available, but should also include reforms aimed at addressing these underlying conditions.

Action to reduce the size of prison populations and prison overcrowding should accompany – and be seen as an integral component of – a comprehensive strategy to prevent HIV and HCV transmission in prisons, to improve prison health care and to improve prison conditions. According to UN agencies, this should include legislative and policy reforms aimed at reducing the criminalisation of non-violent drug offences and significantly reducing the use of incarceration for non-violent users of illicit drugs. Developing alternatives to prison and non-custodial diversions for people convicted of offences related to drug use would significantly reduce the number of people who use drugs who are sent to prison, the overall prison population and levels of prison overcrowding.[86]

Action to reduce the excessive use of pre-trial detention – the arrest and incarceration of people who have not yet been convicted of any crime – is also essential. Pre-trial detainees account for over one-third of all the people in prisons around the world. They are frequently held in overcrowded, substandard conditions without medical treatment or any measures for infection control. Incarceration exposes detainees to a range of health risks, including interruption of critically important medications to treat HIV, TB or drug dependence and exposure to new infections. As in prisons, drug use and sex occur in pre-trial detention centres, while tools to promote protection such as condoms, drug dependence treatment and sterile syringes are largely unavailable – even in jurisdictions where these measures are available in prisons. The health risks associated with pre-trial detention affect not only those detained but also societies at large, as people move between pre-trial detention and the community.[86]

International standards clearly state that pre-trial detention should be an 'exceptional' measure that is used sparingly. For health, human rights and prison reform advocates, it is imperative to advocate for programmes that provide safe alternatives to pre-trial detention for persons accused of low-level crimes, for effective disease prevention and treatment for those who must remain in pre-trial detention and for better conditions while in pre-trial detention.

Finally, 'in the medium and longer-term, transferring control of prison health to public health authorities could also have a positive impact'.[87] This recommendation recognises that health care in prisons can be delivered more effectively by public health authorities than by prison management, as long as sufficient resources are provided and freedom of action of the new prison health authorities is guaranteed.

References

1. UNAIDS (1996) *HIV/AIDS in Prisons. Statement by the Joint United Nations Programme on HIV/AIDS (UNAIDS)*. Geneva: Switzerland.
2. Dolan J et al. (2007) HIV in prison in low-income and middle-income countries. *Lancet Infectious Diseases* 7: 32–43.
3. Macalino GE et al. (2004) Hepatitis C infection and incarcerated populations. *International Journal of Drug Policy* 15: 103–14.
4. WHO, UNODC, UNAIDS (2007) *Interventions to Address HIV in Prisons: Comprehensive Review*. Evidence for Action Technical Paper. Geneva: WHO.
5. Reindollar RW (1999) Hepatitis C and the correctional population. *American Journal of Medicine* 107(6B): 100S–103S.
6. Bird A et al. (1993) Study of infection with HIV and related risk factors in young offenders' institution. *British Medical Journal* 307: 228–31.
7. Glass G et al. (1988) Seroprevalence of HIV antibody among individuals entering the Iowa prison system. *American Journal of Public Health* 78(4): 447–9.
8. Martin V et al. (1990) Seroepidemiology of HIV-1 infection in a Catalonian penitentiary. *AIDS* 4: 1023–6.
9. Vlahov D et al. (1991) Prevalence of antibody to HIV-1 among entrants to US correctional facilities. *Journal of the American Medical Association* 265: 1129–32.
10. Estebanez P et al. (1988) Prevalence and risk factors for HIV infection among inmates. Paper presented at the IVth International Conference on AIDS, Stockholm, June. Abstract 4202.
11. Truman B et al. (1988) HIV seroprevalence and risk factors among prison inmates entering New York State Prisons. Paper presented at the IVth International Conference on AIDS, Stockholm, June. Abstract no 4207.
12. Dartmouth Medical School (2010) Hepatitis C – an epidemic for everyone: www.epidemic.org/theFacts/theEpidemic/worldPrevalence/ (last accessed 28 February 2010).
13. Singh S et al. (1999) High prevalence of sexually transmitted and blood-borne infections amongst the inmates of a district jail in Northern India. *International Journal of STD & AIDS* 10(7): 475–8.
14. Pallas JR et al. (1999) Risk factors for monoinfections and coinfections with HIV, hepatitis B and hepatitis C viruses in northern Spanish prisoners. *Epidemiology and Infection* 123: 95–102.
15. Calzavara LM et al. (2003) Prior opiate injection and incarceration history predict injection drug use among inmates. *Addiction* 98: 1257–65.
16. Hiller ML et al. (1999) Prison-based substance abuse treatment, residential aftercare and recidivism. *Addiction* 94(6): 833–42.
17. European Monitoring Centre on Drugs and Drug Addiction (EMCDDA) (2005) *The State of the Drugs Problem in Europe. Annual Report 2005*. Luxembourg: Office for Official Publications of the European Community.
18. Shewan D et al. (2005) Injecting in Prisons, in *Injecting. Illicit Drugs*, ed. Pates R et al. Oxford: Blackwell.
19. Dunn J et al. (2000) HIV, drug use, crime, and the penal system: Competing priorities in a developing country. The case of Brazil, in *Drug Use and Prisons: An International Perspective*, ed. Shewan D and Davies JB. Chur: Harwood.
20. Ohaeri JU (2000) Drug use and HIV/AIDS in Sub-Saharan African prisons. In Shewan and Davies op. cit.
21. Stöver H et al. (2001) *An Overview Study: Assistance to Drug Users in European Union Prisons*. Lisbon: EMCDDA.
22. Ball A et al. (1995) *Multi-Centre Study on Drug Injecting and Risk of HIV Infection: A Report Prepared on behalf of the International Collaborative Group for World Health Organization Programme on Substance Abuse*. Geneva: WHO.
23. Normand J et al. (eds) (1995) *Preventing HIV Transmission: The Role of Sterile Needles and Bleach*. Washington, DC: National Academy Press.
24. Beyrer C et al. (2003) Drug use, increasing incarceration rates, and prison-associated HIV risks in Thailand. *AIDS and Behavior* 7(2): 153–61.
25. Gore SM et al. (1995) Drug injection and HIV prevalence in inmates of Glenochil Prison. *British Medical Journal* 310: 293–6.
26. Maden A et al. (1993) A survey of pre-arrest drug use in sentenced prisoners. *British Journal of Addiction* 87: 27–33.
27. Dolan K et al. (1999) HIV risk behavior and prevention in prison: A bleach program for inmates in NSW. *Drug and Alcohol Review* 18: 139–43.
28. Dolan K and Wodak A (1999) HIV transmission in a prison system in an Australian state. *Medical Journal of Australia* 171(1): 14–17.
29. Shewan D et al. (1994) Behavioural change amongst drug injectors in Scottish prisons. *Social Science and Medicine* 39(11): 1585–6.
30. Plourde C and Brochu S (2002) Drugs in prison: A break in the pathway. *Substance Use and Misuse* 37: 47–63.
31. Swann R and James P (1998) The effect of the prison environment upon inmate drug taking behaviour. *Howard Journal of Criminal Justice* 37: 252–65.
32. Taylor A et al. (1995) Outbreak of HIV infection in a Scottish prison. *British Medical Journal* 310(6975): 289–92.
33. Hughes RA and Huby M (2000) Life in prison: Perspectives of drug injectors. *Deviant Behavior* 21(5): 451–79.
34. Monitoring the AIDS Pandemic (MAP) (2005) *Drug injection and HIV/AIDS in Asia*. MAP Report: www.mapnetwork.org/docs/MAP_IDU%20Book%2024Jun05_en.pdf (last accessed 16 February 2010).
35. DiCenso A et al. (2003) *Unlocking Our Futures: A National Study on Women, Prisons, HIV, and Hepatitis C*. Toronto: PASAN.
36. Elwood Martin R et al. (2005) Drug use and risk of bloodborne infections: A survey of female prisoners in British Columbia. *Canadian Journal of Public Health* 96(2): 97–101.
37. Rowhani-Rahbar A et al. (2004) Prevalence of common blood-borne infections among imprisoned injection drug users in Mashhad, North-East Iran. *Archives of Iranian Medicine* 7(3): 190–94.
38. Frost L and Tchertkov V (2002) Prisoner risk taking in the Russian Federation. *AIDS Education and Prevention* 14(Suppl. B): 7–23.
39. Drobniewski FA et al. (2005) Tuberculosis, HIV seroprevalence and intravenous drug abuse in prisoners. *European Respiratory Journal* 26(2): 298–304.
40. Zhivago S (2005) HIV/AIDS epidemic situation in penitentiary system of Ukraine. Presentation at 'HIV/AIDS in Prisons in Ukraine – From Evidence to Action: Prevention and Care, Treatment, and Support', Kiev, 1 to 2 November.
41. Weilandt C et al. (2005) *Anonymous Survey on Infectious Diseases and Related Risk Behaviour among Armenian Prisoners and on Knowledge, Attitudes and Behaviour of Armenian Prison Staff Towards Infectious Diseases and Drugs*. Bonn: WIAD, ENDIPP, ICRC.
42. Godinho J (2005) Reversing the Tide: Priorities for HIV/AIDS Prevention in Central Asia. Washington, DC: The World Bank.
43. Cravioto P et al. (2003) Patterns of heroin consumption in a jail on the northern Mexican border: Barriers to treatment access. *Salud Publica de Mexico* 45: 181–90.
44. Rapid Situation Assessment Mauritius (2005) Unpublished paper (on file with authors).
45. Adjei AA et al. (2006) Prevalence of human immunodeficiency virus, hepatitis B virus, hepatitis C virus and syphilis among prison inmates and officers at Nsawam and Accra, Ghana. *Journal of Medical Microbiology* 55: 593–7.
46. Jürgens R et al. (2009) Interventions to reduce HIV transmission related to injecting drug use in prison. *Lancet Infectious Diseases* 9: 57–66.
47. Taylor A and Goldberg D (1996) Outbreak of HIV infection in a Scottish prison: Why did it happen? *Canadian HIV/AIDS Policy & Law Newsletter* 2(3): 13–14.
48. MacDonald M (2005) *A Study of Health Care Provision, Existing Drug Services and Strategies Operating in Prisons in Ten Countries from Central and Eastern Europe*. Helsinki: Heuni.
49. Bobrik A et al. (2005) Prison health in Russia: The larger picture. *Journal of Public Health Policy* 26: 30–59.
50. Haber PS et al. (1999) Transmission of hepatitis C within Australian prisons. *Medical Journal of Australia* 171: 31–3.
51. O'Sullivan B et al. (2003) Hepatitis C transmission and HIV post-exposure prophylaxis after needle- and syringe-sharing in Australian prisons. *Medical Journal of Australia* 178(11): 546–9.
52. Keppler K and Stöver H (1999) Transmission of infectious diseases during imprisonment. Results of a study and introduction of a model project for infection prevention in Lower Saxony. *Gesundheitswesen* 61(4): 207–13. Summarised in English in *Canadian HIV/AIDS Policy & Law Newsletter* (1999) 2(2): 18–19.
53. Lines R et al. (2004) *Prison Needle Exchange: A Review of International Evidence and Experience*. Montreal: Canadian HIV/AIDS Legal Network.
54. Lines R et al. (2006) *Prison Needle Exchange: A Review of International Evidence and Experience*. 2nd edition. Montreal: Canadian HIV/AIDS Legal Network.
55. WHO (2004) *Effectiveness of Sterile Needle and Syringe Programming in Reducing HIV/AIDS among Injecting Drug Users*. Evidence for Action Technical Paper. Geneva: WHO.
56. Menoyo C et al. (2000) Needle exchange in prisons in Spain. *Canadian HIV/AIDS Policy & Law Review* 5(4): 20–21.
57. Stöver H (2000) Evaluation of needle exchange pilot project shows positive results. *Canadian HIV/AIDS Policy & Law Newsletter* 5(2/3): 60–64.
58. Hoover J and Jürgens R (2009) *Harm Reduction in Prison: The Moldova Model*. New York: Open Society Institute.
59. WHO, UNODC, UNAIDS (2007) *Interventions to Address HIV in Prisons: Needle and Syringe Programmes and Decontamination Strategies*. Evidence for Action Technical Paper. Geneva: WHO.
60. Harding TW and Schaller G (1992) *HIV/AIDS and Prisons: Updating and Policy Review. A Survey Covering 55 Prison Systems in 31 Countries*. Geneva: WHO Global Programme on AIDS.
61. Kapadia F et al. (2002) Does bleach disinfection of syringes protect against hepatitis C infection among young adult injection drug users? *Epidemiology* 13(6): 738–41.
62. Hagan H et al. (2001) Sharing of drug preparation equipment as a risk factor for hepatitis C infection among young adult injection drug users? *American Journal of Public Health,* 91 (1): 42-46.
63. Dole VP et al. (1969) Methadone treatment of randomly selected criminal addicts. *New England Journal of Medicine* 280(25): 1372–5.
64. Joseph H et al. (1989) Heroin addicts in jail. New York tries methadone treatment program. *Corrections Today* 5: 124–31.
65. Daines N et al. (1992) Results of the study tour undertaken in May–June 1992 to the United States, Canada, The Netherlands and England to research correctional facilities in connection with the Metropolitan Remand Centre Project. Sydney: NSW Department of Corrective Services, unpublished report.
66. Gorta A (1992) *Monitoring the NSW Prison Methadone Program: A Review of Research 1986–1991*. Publication No. 25. Sydney: Research and Statistics Division, NSW Department of Corrective Services, with reference to Lynes D (1989) Methadone maintenance in prison: A realistic programme. *Journal of Prisoners on Prisons* 1: 9–15.
67. Hall W et al. (1993) Methadone maintenance treatment in prisons: The New South Wales experience. *Drug and Alcohol Review* 12: 193–203.
68. EMCDDA (2009) *The State of the Drugs Problem in Europe. Annual Report 2009*. Luxembourg: Office for Official Publications of the European Community.
69. Correspondence received from Enrique Acin, Jefe de Area de Salud Pública, Coordinación de Sanidad Penitenciaria, dated 1 March 2010 (on file with authors).
70. Black E et al. (2004) *Supply, Demand and Harm Reduction Strategies in Australian Prisons: Implementation, Cost and Evaluation. A Report Prepared for the Australian National Council on Drugs*. Sydney: Australian National Council on Drugs.
71. Stöver H et al. (2004) *Substitution Treatment in European Prisons. A Study of Policies and Practices of Substitution in Prisons in 18 European Countries*. London: The European Network of Drug Services in Prison.
72. Stöver H et al. (2006) Substitution treatment in European prisons: A study of policies and practices in 18 European countries. *International Journal of Prisoner Health* 2(1): 3–12.
73. Zurhold H et al. (2004) *Female Drug Users in European Prisons: Best Practice for Relapse Prevention and Reintegration.* Hamburg: Centre for Interdisciplinary Addiction Research, University of Hamburg.
74. Magura S et al. (1993) The effectiveness of in-jail methadone maintenance. *Journal of Drug Issues* 23(1): 75–99.
75. WHO, UNODC, UNAIDS (2007) *Interventions to Address HIV in Prisons: Drug Dependence Treatments*. Evidence for Action Technical Paper. Geneva: WHO.
76. Dolan K et al. (2005) Four-year follow-up of imprisoned male heroin users and methadone treatment: Mortality, re-incarceration and hepatitis C infection. *Addictions* 100(6): 820–28.
77. Brooke D et al. (1998) Substance misusers remanded to prison: A treatment opportunity? *Addiction* 93(12): 1851–6.
78. WHO (1993) *WHO Guidelines on HIV Infection and AIDS in Prisons*. Geneva: WHO (WHO/GPA/DIR/93.3).
79. Weekes J et al. (2004) *Substance Abuse in Corrections. FAQs*. Ottawa: Canadian Centre on Substance Abuse.
Hughes RA (2003) Illicit drug and injecting equipment markets inside English prisons: A qualitative study. *Journal of Offender Rehabilitation* 37(3/4): 47–64.
80. Her Majesty's Government (1995) *Tackling Drug Use Together: A Strategy for England 1995–1998.* London: HMSO.
81. MacPherson P (2004) *Use of Random Urinalysis to Deter Drug Use in Prison: A Review of the Issues.* No. R-149. Ottawa: Addictions Research Branch, Correctional Service of Canada.
82. WHO (1987) *Statement from the Consultation on Prevention and Control of AIDS in Prisons, Global Programme on AIDS*. Geneva: WHO.
83. Basic Principles for the Treatment of Prisoners, UN GA Res. 45/111, annex, 45 UN GAOR Supp. (No. 49A) at 200, UN Doc. A/45/49 (1990): Principle 5.
84. Jürgens R and Betteridge G (2005) Prisoners who inject drugs: Public health and human rights imperatives. *Health & Human Rights* 8(2): 47–74.
85. UNODC, WHO, UNAIDS (2006) *HIV/AIDS Prevention, Care, Treatment and Support in Prison Settings. A Framework for an Effective National Response*. New York: UN.
86. Schoenteich M (2008) The scale and consequences of pretrial detention around the world. *Justice Initiatives*, Spring.
87. WHO, UNODC, UNAIDS (2007*) Interventions to Address HIV in Prisons: HIV Care, Treatment and Support*. Evidence for Action Technical Paper. Geneva: WHO.

3.6: Underestimated and overlooked: A global review of drug overdose and overdose prevention

About the authors:

Dr Phillip Coffin is an Internist and Infectious Disease Fellow at the University of Washington, whose research focuses on infectious and other major causes of morbidity and mortality among drug users. Dr Susan Sherman is an Associate Professor at the Johns Hopkins Bloomberg School of Public Health, Department of Epidemiology, and her work has a particular emphasis on issues related to urban health, HIV transmission and drug use. Matt Curtis is a consultant whose work focuses on advocacy and services development to promote the health and rights of people who use drugs. He has worked in Eastern Europe and Central Asia for over ten years and is particularly involved in overdose prevention, community organising, and programme evaluation.

The authors would like to thank Shona Schonning for her input and Andrew McAuley, Romina Gaston and Paul Dietze for reviewing the chapter.

Introduction

There is a global epidemic of morbidity and mortality caused by drug overdose, primarily related to opioids. Where data are available, overdose is commonly the leading cause of death among drug users.[1] Overdose is a leading cause of death among all youth in some countries, and the leading cause of accidental death among all adults in some regions.[2]

A growing body of evidence demonstrates that targeted overdose programming can reduce overdose death rates. While the scale at which overdose programming is implemented is still limited, pilot programmes show that barriers to implementation can be overcome.

What is an overdose?

Overdose happens when a person takes more of a drug or combination of drugs than the body can handle. As a consequence, the central nervous system is not able to properly control basic life functions. The person may pass out, stop breathing, have heart failure or experience seizures. Overdose can be fatal, although in a majority of cases it is not. Non-fatal overdose, which can be associated with several health harms, is also a cause for concern.

This chapter examines the epidemiology of opioid overdose, describes the different elements of overdose prevention programmes and outlines barriers to implementation.

An overview of overdose epidemiology

Information on overdose mortality is collected through national reporting systems in some high-income countries. These rates are often expressed as the number of deaths per 100,000 in the adult population, thereby allowing comparison over time and between countries. Nevertheless, the different methods of ascertaining death and collecting data make international comparisons difficult. Definitions of overdose also vary, as do the individuals and agencies reporting the data and coding for cause of death or toxicology. Overdoses may not come to medical attention in many countries and it is presumed that data on overdose mortality in general suffer from considerable under-reporting.

Overdose mortality rates are also derived from research where cohorts of people who inject drugs are followed over time. These studies calculate annual death rates and the causes of death. Death rates are often expressed as deaths per 100 or 1,000 life years in order to allow comparison between studies and with death rates in non-drug-using populations. The latter comparison assesses 'excess mortality' (i.e. deaths attributed to drug use).

The United Kingdom and Australia have demonstrated epidemiologic coordination and reliable data collection on overdose. In the United States, national data are estimates, although several cities have recently made advances in data collection and selected national agencies are increasingly involved in data analysis efforts. Most other countries have limited national data on overdose, requiring alternative data sources and, frequently, expert opinion to estimate overdose.

Overdose data are limited by poor efforts to ascertain causes of death, concern from both witnesses and health care providers about police involvement, limited access to toxicological resources and inadequate collation of data across municipalities and countries. In Russia, overdose death data are available only for registered drug users, who represent approximately 20% of the drug-using population.[1] In some states in Eastern Europe and Central Asia, emergency departments and medical examiner's offices frequently do not record overdose as the cause of admission or death. This is due to a combination of lack of reimbursement for services, legal implications for patients and families and the social stigma of drug use.[1]

A few surveys have begun to characterise overdose in, for example, Iran, Viet Nam, Thailand and China. While overdose data from African states remains elusive, heroin and other injection drug use appears to have become increasingly prevalent in the region in recent years (see Chapter 2.9).

Fatal overdose

Annual mortality rates among people who inject drugs are between thirteen and seventeen times greater than among their non-drug-using peers.[3] The leading cause of death among people who inject drugs in most countries is overdose.[1 4 5 6 7 8 9 10] Over half of deaths among heroin injectors are attributed to overdose,[11] far exceeding deaths due to HIV/AIDS or other diseases.[7] These trends hold true in the European Union[12] and the United States,[13 14] where drug overdose exceeds motor vehicle accidents as the primary cause of accidental death in sixteen US states.[2] Overdose remains a leading cause of death among Australian drug users.[15] It is the second leading known cause of death among drug users in Russia, at the highest rate documented in any country, and is a leading cause of death among drug users in most other Eastern European and Central Asian states for which any data are available.[1]

There is evidence to suggest that overdose death has been increasing in many countries over the past decade. For example, drug overdose deaths among adults in the US have risen from 4.0 per 100,000 population in 1999 to 8.8 per 100,000 (26,389 deaths) in 2006.[16]

A review of overdose in several Eastern European and Central Asian states found 17 overdose deaths (among medical examiner cases) in Latvia in 2007; 35 deaths (1.7% of autopsies) in Bucharest, Romania in 2006; 21 deaths (12.7% of ambulance calls for overdose) in Khorog, Tajikistan in 2006; and 57 deaths (9.4% of ambulance calls) in Bishkek, Kyrgyzstan in 2006.[1] Nonetheless, drug overdose is considered by expert opinion to be the leading cause of death among drug users in the last three countries.[1]

In Asia, one study in northern Thailand found a drug overdose death rate of 8.97 per 1,000 person-years among HIV-negative drug users between 1999 and 2002,[17] In Xichang City, China, another study found a heroin overdose death rate of 4.7 per 100 person-years among 379 people who injected drugs from 2002 to 2003.[10]

Little is known about the epidemiology of stimulant overdose, although data are slowly emerging.[18 19]

Drug overdose death rates are high among people living with HIV/AIDS and account for a substantial proportion of deaths among this population in countries with injection-driven HIV epidemics. Figure 3.6.1 displays non-HIV causes of deaths among all those living with HIV/AIDS in New York City.[20] In 2007 overdose was responsible for 21% of all deaths among people living with HIV/AIDS in Russia and was the second leading cause of death among people living with HIV/AIDS (after tuberculosis).[21]

Figure 3.6.1: Non-HIV causes of death among all people living with HIV/AIDS, New York City 1999–2004

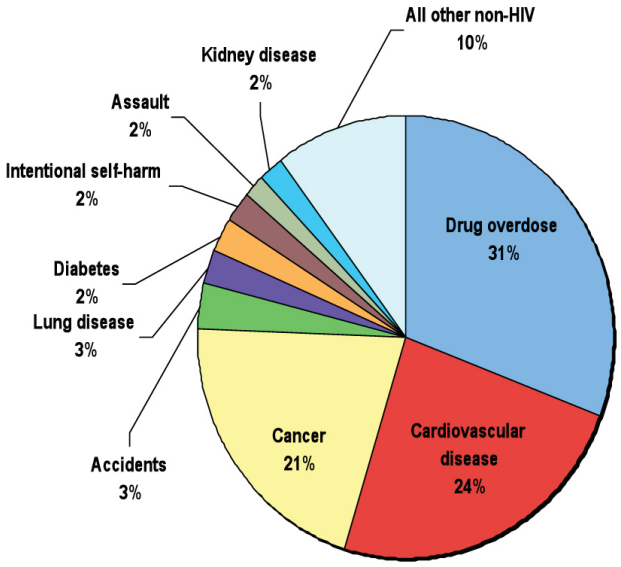


Table 3.6.1: Overdose mortality in selected countries/regions

Country/ Region	Number of drug overdose deaths	Rate per 100,000 person-years	Definition	Population	Year	Source
Russia	9,354	6.6	Opioid overdose	Registered drug users (14% to 20% of total drug user pop) / national population	2006	Koshkina, Petrozavodsk, Russia, 2008
US	18,304	6.2	Opioid overdose	National population over the age of 18	2004	MMWR 2007 56: 93–6
EU	7,557	4.4	Drug-related deaths (60% to 100% are opioid overdose)	National population aged 15 to 39	2005	EMCDDA Statistical Bulletin 2007
Australia	354	3.1	Opioid overdose	National population aged 15 to 54	2004	Opioid Overdose Deaths in Australia 2004

Non-fatal overdose

In addition to the burden of overdose mortality, people who inject drugs experience a high prevalence of non-fatal overdose. Studies found that the proportion of people who inject heroin reporting at least one non-fatal overdose in their lifetime was 59% in sixteen Russian cities;[22] 48% in San Francisco;[23] 41% in Baltimore;[24] 42% in New York City;[25] 68% in Sydney;[26] 38% in London;[27] 30% in Bangkok;[28] and 83% in Bac Ninh, North Viet Nam.[29] Rates of non-fatal overdose within the previous twelve months range from 10% to 20%, with 12% of heroin users in Xichang City, China reporting at least one such overdose.[30] Non-fatal opioid overdose has been associated with numerous negative health outcomes, including pulmonary oedema, pneumonia, cardiac arrhythmia and cognitive impairment in between 5% and 10% of cases.[31 32]

Risk factors for overdose

Following a relative hiatus in research during the 1980s, overdose has been increasingly studied over the last two decades. Investigations were initially most prominent in Australia in the mid-1990s, with researchers describing drug overdose in ways that have proven fairly consistent with reports from elsewhere.[15 26] Based on reviews of medical examiner data, ambulance and emergency centre records and drug user surveys, overdose is believed to be primarily due to opioids, mostly injected, with death occurring most often among older users, although younger users may have more frequent non-fatal overdose events.[33]

The most notable risk factors for overdose among drug users are a prior overdose,[34 35 36] a recent period of abstinence (e.g. substance abuse treatment, incarceration, self-imposed abstinence)[27 30 37 38 39 40] and concomitant use of other drugs including depressants (alcohol, benzodiazepines and barbiturates)[41] as well as stimulants.[42] HIV-positive status is associated with a two or three times increased risk of overdose death. Although the reason for this is unclear, it may be due to the presence of an HIV-related condition such as liver, pulmonary or systemic dysfunction.[43 44 45] While drug potency and impurities may contribute to overdose, variations in purity appear to account for only about one-quarter of variations in overdose mortality.[46]

Who can overdose?

There are estimates of what constitutes a 'lethal dose' of a particular substance, but these can only really help to determine what might cause overdose for someone using it for the first time and without mixing it with other substances. For most people who use drugs, it can be difficult to predict how much of a certain drug, or combination of drugs, will lead to an overdose. Individual characteristics such as a person's weight, health, tolerance for a drug at a particular time, drug potency, route of administration and speed of use all play a role in determining how much a person's body can handle.

About two-thirds of people who inject drugs will experience an overdose at some time. Based on experience and estimates from developed countries, approximately one-half of overdoses will receive medical attention, while the other half will be managed by bystanders, with roughly 4% resulting in death.[33] If medical attention is received within a couple of hours of the overdose, most people will survive.[40] However, drug users may be reluctant to call for help due to fear of police attendance or perceived mistreatment by medical personnel.[22 40 47] People who overdose and bystanders have in rare cases faced legal consequences. If reported by the media these cases can perpetuate fear and deter people from seeking assistance for overdose.[48]

Regional variations

While the characteristics of overdose epidemiology are fairly well researched in many high-income countries, information is confined to anecdotal reports or small-scale surveys in much of the rest of the world. Factors that may influence overdose epidemiology in different settings include the types of drugs used and patterns of use, social support networks of drug users and the availability and accessibility of health care for people who use drugs. Further understanding of these factors and their influence on overdose risk in different settings would help to inform the planning and evaluation of overdose prevention programmes in community contexts.

In Eastern Europe and Central Asia, for example, there is wide variation in the availability of heroin versus other injectable opioids. Ukraine has a largely seasonal market for shirka, an injectable opioid produced from locally grown poppy, which may contribute to overdose as users' cycle in and out of opioid use. Drug users in this and other regions also frequently live at home and have close family relationships and so may benefit from overdose prevention programmes targeted at educating and distributing naloxone to family members.[1] Opium remains the dominant cause of overdose in Tehran, Iran[49] and is a major drug of choice in China[10] although overdose rates are unknown. The predominance of cocaine in Latin America and of amphetamine-type stimulants in much of Asia and parts of Eastern Europe is likely to have a significant effect on overdose incidence and mortality. It is also likely that limited availability of ambulances, delayed arrival of medical services and lack of availability of naloxone for use by medical personnel in many countries affects the morbidity and mortality of overdose.[1]

An overview of overdose prevention programming

Overdose was not traditionally considered preventable. Over the past fifteen to twenty years, however, researchers and service providers have developed several strategies to reduce overdose incidence and mortality. Driven by experience and research findings, overdose prevention programmes generally include education and awareness building, efforts to create supportive public policy environments, first responder training and increasing the availability of naloxone, both as take-home doses for opioid users and for medical personnel in severely under-resourced settings.

Although not designed as overdose prevention programmes per se, opioid substitution (methadone and buprenorphine) maintenance services are strongly associated with reduced overdose.[50 51 52] For example, there was a 79% reduction in opioid overdose over the four years following introduction of buprenorphine maintenance in France in 1995.[53] Similarly, safer injection facilities in eight countries have overseen millions of injections and experienced no overdose deaths.[54 55] As overdose risk is higher among those who inject, efforts to encourage transition to other routes of administration[56 57] might prove useful in reducing overdose.

Since the late 1990s there has been an increase in overdose prevention programmes in many countries, particularly programmes targeting heroin and other opioid users. The majority of these programmes are run by non-governmental organisations, although government public health agencies have become increasingly involved in several EU countries. Current overdose prevention education aims to alter individual behaviours that increase risk of fatal overdose and to increase the likelihood that people who inject drugs recognise and properly respond to witnessed overdoses.[58]

What is an overdose prevention programme?

An overdose prevention programme is any cooperative effort designed to give people who use drugs the skills and materials necessary to prevent overdose from occurring and to respond effectively to those that do occur. A programme may involve harm reduction, medical, criminal justice or any other professionals engaging with drug users, and necessarily involves people who use drugs as leaders. Programmes are usually, but not always, integrated with an array of other drug or HIV services. They operate on any scale and in any setting where there is an opportunity for reducing the experience of overdose or its impact.

Major elements of an overdose prevention programme may include:

Community needs assessment: Most programmes develop a needs assessment to understand the unique characteristics of overdose in that locality. This often involves surveys and focus groups with people who use drugs and a review of relevant scientific literature. Some programmes seek partnerships with political leaders, law enforcement personnel and/or emergency medical providers to create greater buy-in, improve the care that drug users receive and reduce the involvement of police when emergency assistance is requested.

Education: Most programmes provide face-to-face education and informational materials with the aim of reducing overdose frequency by educating people who use drugs about the risk factors for overdose in their region. Modifiable risk factors include advice about how to use drugs after a recent period of abstinence, such as incarceration, hospitalisation, detoxification or self-imposed abstinence, as well as problems with the concomitant use of other drugs with opioids, such as cocaine, benzodiazepines or alcohol.[1] Other major risk factors include previous overdose, older age and health status. Using alone, while not known as a risk factor for overdose, almost certainly increases the risk of fatality in the case of overdose and is a major issue for drug users who are socially isolated.[59] Educating people who use drugs on the risks of injecting versus other routes of administration such as smoking may also be useful in overdose prevention programmes.[60]

Training: Training people who may be present during an overdose (e.g. family or friends of drug users, or people working in places where overdose might occur) to identify and respond correctly to overdose is the most common approach employed in prevention programmes. Training is offered in a variety of settings and sessions may range in length from five minutes to three hours depending on the circumstances. Most programmes offer training for people who use drugs (as well as non-using friends or family) in identifying overdose based on breathing and response to stimuli, and teach participants how to respond to overdose with rescue breathing, a simple intervention that addresses the primary cause of opioid overdose death – respiratory depression. Cardiopulmonary resuscitation (CPR) training can be important to managing stimulant or polydrug overdoses. Research has demonstrated that people who use drugs can learn first response and rescue breathing techniques and can remember what to do when asked at a later date,[61] [62] [63] and that bystander-administered CPR improves outcomes for heroin overdose victims.[64] If a programme distributes naloxone, training on its proper use must also be provided. It is also important to dispel incorrect beliefs and myths around overdose prevention and to identify what does not work.

Naloxone distribution: Naloxone distribution is the centrepiece of many programmes, mainly because of its capacity to overcome barriers to seeking medical care for overdose (fear of arrest, inadequate or disrespectful care etc.). Existing programmes have adopted a very wide range of distribution schemes, in part due to local regulations or other policies. However, the basic goal is to maximise the probability that naloxone will be in the hands of a trained responder who is present at the time of an overdose.

Policy advocacy: Advocacy goals often include legislative reform, improved collaboration with police and emergency medical providers and greater overdose awareness among professional and research bodies. Laws covering 'good Samaritan'-type actions can be enacted that protect witnesses from prosecution when calling for help with an overdose and that protect individuals from liability for administering naloxone to others in the case of a suspected overdose. For example, police orders have been issued in Australia and elsewhere to restrict the role of police accompanying paramedics to an overdose incident and avoid arrests.[40] Advocacy has also been undertaken to encourage government agencies to take responsibility for oversight of national policy on overdose.

Monitoring and evaluation: While small or under-resourced programmes may avoid creating more work through data collection, most programmes routinely document basic demographic and overdose history data from their participants, as well as information on training, naloxone distribution and reports of overdose response from participants. As data on overdose is generally lacking, prevention programmes are often an important source of basic information that can inform research on viable intervention strategies and other aspects of overdose.

A recently launched website – www.take-homenaloxone.com – provides information on existing naloxone programmes worldwide.

While overdose education is not new to harm reduction, the major innovation of recent programmes has been to put naloxone in the hands of opioid users and their friends and family in order to maximise the potential that the medication is available immediately at the scene of an overdose. Naloxone is uniquely effective at reversing opioid overdose, with response times of one to three minutes, no contraindications except for allergy and no well-established side effects distinct from the medical consequences of overdose itself. The effects of naloxone last for between thirty minutes and one hour, long enough for adequate metabolism of most short-acting opioids (including heroin) so that significant respiratory depression is unlikely to reoccur.

Naloxone can be administered intravenously, intramuscularly or subcutaneously with similar response times (due in part to the time required to find a vein).[65] Intranasal administration, through the use of atomisers, has emerged as a novel approach that avoids the distribution and use of needles and, according to several studies, is between 80% and 100% as effective as injected naloxone.[66 67 68 69]

What is naloxone?
Naloxone, also known as Narcan and other brand names, is a medication used to reverse the effects of opioids, most importantly the respiratory depression that causes death from overdose. Naloxone is a pure opioid antagonist, meaning it 'kicks out' opioids from receptors in the body. It is safe, with no significant side effects and no potential for misuse. Naloxone is usually effective one to three minutes after intravenous, subcutaneous, intramuscular or intranasal administration. It is mainly available in a 0.4 mg/ml liquid formulation, with 1–2 ml considered a standard effective dose when injected, or slightly higher when administered intranasally.

The first large-scale effort at naloxone distribution began in 1997 through the Chicago Recovery Alliance, with similar programmes established around the same time in Berlin. Programmes were later set up in a number of other US cities and in the UK, Canada, Russia, Ukraine, Tajikistan, Afghanistan and elsewhere. Most recently, programmes have been launched in Georgia and Kazakhstan. More sporadic or semi-underground naloxone distribution has occurred in Cambodia, China, Thailand and other countries. Naloxone has been available over the counter at pharmacies in Italy since the 1980s. In Chicago, which is still home to one of the largest programmes, by May 2009 the programme had distributed over 11,000 naloxone kits and received reports from participants of more than 1,000 successful overdose reversals.[70] Newer and smaller programmes are also finding ways to scale up. In Russia, five pilot overdose prevention programmes trained more than 1,500 people who inject drugs in overdose prevention and response and distributed more than 6,000 doses of naloxone in 2009.[71]

Overdose prevention programming has been taken up in a much wider range of settings, including primary care medical clinics, HIV and homeless services, opioid substitution therapy programmes and prisons and jails. In the US, evidence to suggest that prescription opioid overdose death rates have risen to similar levels as heroin overdose prompted the launch of programmes, including Project Lazarus in North Carolina and at least one arm of the US military, to develop education protocols to provide naloxone to patients receiving opioid prescriptions.

Though growing, the overall level of funding for overdose prevention programmes remains small. Early programmes were often initiated with private contributions. Today, funding for programmes is largely from government public health agencies in higher income countries, and from private and multilateral donor agencies in lower income countries. The Global Fund to Fight AIDS, Tuberculosis and Malaria, the largest single donor agency for HIV/AIDS programmes, has indirectly supported overdose prevention programming (including naloxone purchase) in Russia and Ukraine, where overdose is a significant health issue for people living with HIV/AIDS.

Interest in the evaluation of overdose prevention programmes has increased with the number of programmes, but research is still in the early stages. Although several qualitative studies[58 72] and small pilot evaluations suggest the effectiveness of naloxone distribution, there are no definitive studies demonstrating effectiveness and no formal cost-benefit analyses. Importantly, no study has shown a statistically significant association between overdose prevention programmes (including naloxone distribution) and population-level reductions in overdose mortality.

Obstacles include weak or inconsistent data collection, which means that there are often no reliable baseline data and that officially reported data on overdose may not be comparable from one location to another or over time. Research funding has been scarce, such that most studies have been relatively small-scale collaborations between overdose programmes and researchers, or limited to documenting basic overdose history data and self-reported overdose reversals by programme participants. Moreover, experimental study designs with control groups not receiving naloxone raise substantial ethical questions. Finally, overdose death is a 'statistically rare event' that varies over time for reasons that are not yet clear. Therefore, large studies are required to investigate an impact on mortality rates. Case-control studies may prove more feasible.

Nonetheless, existing data are promising. Ample data demonstrate the acceptability of naloxone distribution for service providers and drug users.[73 74 75 76 77 78] Programmes in the US and the UK have been shown to be effective at teaching people who use drugs how to prevent and manage overdose.[79 80 81 82] Ecological data suggest a reduced level of overdose fatality in some locations during a period of naloxone distribution.[83 84] Programmes in the US and UK, which routinely record the number of naloxone kits distributed and the number of clients reporting use of naloxone to save a life, generally report that between 10% and 20% of kits result in a 'save', almost all of which were considered appropriate uses by programme staff.[1] New research efforts include the N-ALIVE study in the UK, which is evaluating naloxone dispensing to prisoners.[85]

In the absence of more compelling evidence of effectiveness, many people, including some within the harm reduction movement, remain sceptical and caution against the wider roll-out of overdose prevention programmes, particularly with regard to resource issues related to the expense of naloxone. Others feel that better data are not necessary to support naloxone

distribution programmes. Many providers and advocates have lost clients and friends to overdose and believe – much as syringe exchange advocates did in the 1980s – that research may lag behind service.

Barriers to overdose prevention services

Several important policy and logistical barriers have slowed the wider adoption of overdose prevention programmes around the world. Major barriers include poor commitment from public health agencies to reduce overdose-related mortality, lack of investment in systematic data collection on overdose mortality, poor health care systems and, in particular, emergency health care provision, poor availability of naloxone, the prioritisation of law enforcement over public health and more broadly a lack of public support for drug user health initiatives.

Government commitment: Few governments have established drug overdose to be within the remit of a specific agency. As a result, overdose prevention programming is often overlooked. In low- and middle-income countries, where available, programmes form small components of HIV programmes and are often funded by international donors.

Data collection: Overdose data are inadequate in most countries and almost non-existent in many others. Greater investment in the systematic collection of data on overdose mortality and the characteristics of overdose is necessary to provide a clearer picture of its impact on people who use drugs, particularly in low- and middle-income countries. This information is also important to inform overdose prevention programmes that are tailored to the particular communities they serve.

Emergency health care services: While emergency health care and hospital-based overdose care are available in many countries, several factors can impede access for people who use drugs, including distance, inadequate number of ambulances and limited access to naloxone for medical providers.[1] Naloxone may not be carried in ambulances, or may be restricted to specialised ambulances, in major city centres. Medical services are often state-funded, although in some countries patients give 'tips' for service or have to pay for fuel costs. While police may or may not be involved in emergency medical services, fear of police involvement is a major deterrent to calling for emergency assistance in all countries that have been studied. Some countries, such as Kyrgyzstan and Romania, require witnesses to drug use to contact police.[1]

Naloxone availability: Although naloxone is on the World Health Organization Model List of Essential Medicines, in some countries it is not registered as a medication at all or is available in extremely limited fashion. Even in countries where naloxone is available, some emergency medical services do not carry the drug. Overdose programming in Tajikistan has included providing naloxone to emergency health care and hospital staff, leading to an impressive reduction in mortality among those overdoses attended to by medical professionals in Khorog.[1]

In some locations, several issues have combined to increase the cost of naloxone. In the US, for example, Hospira became the only manufacturer of the naloxone solution in 2007 and naloxone prices for harm reduction agencies roughly doubled over the following year. Hospira, as well as most European manufacturers, also relies on a single source, a German corporation called Mallinckrodt, for naloxone powder base. Quotas on the availability of noroxymorphone, naloxone's opioid precursor, may also keep prices unnecessarily high. Elsewhere, there is also local naloxone production, notably in countries with indigenous legal opium manufacture (e.g. India and Ukraine). While the US Food and Drug Administration approved injectable formulations of naloxone in 1971, no device has been approved for intranasal administration in the country, which limits insurance reimbursement opportunities.

Law and policy: Overdose is rarely addressed in policy documents and prevention of overdose is frequently not a priority for policy makers. Laws and policies related to overdose often appear contradictory in that overdose bystanders or medical providers may be legally obligated to report overdose to police, while people who use drugs are simultaneously promised access to medical services. Naloxone distribution for use by non-medical people is probably legal in the US,[74] has been legal in the UK since 2005 and is either legal or likely to be tolerated in many other countries. Nonetheless, health care providers not accustomed to harm reduction approaches may desire formal support for overdose prevention practices.[78] Several US states, including California, Connecticut, New York, New Mexico, Massachusetts and Washington, are at the forefront of developing and harmonising laws and policy to support overdose prevention. This includes laws that protect witnesses who call emergency services, laws that explicitly authorise use by non-medical people of naloxone for opioid overdose and laws and policies establishing funding streams for overdose prevention research and programming.[84]

Conclusion

Drug overdose is a major and longstanding source of morbidity and mortality throughout much of the world. The situation has worsened in many countries over the past twenty years. Although governments have long ignored the subject, service providers and researchers have determined overdose to be largely preventable and have identified several approaches to achieve reductions in medical complications and death. Community-based programmes have emerged to reduce overdose and are often incorporated into other low-threshold drug services and primarily based on the distribution of naloxone. An increasing number of studies are attempting to evaluate the effectiveness of these interventions. Policy changes to improve overdose management and access to emergency medical care have proved possible in several locations and should be a priority in many others. Although current investment in overdose prevention and management remains grossly inadequate to address the number of lives being lost, a vibrant field of intervention and research has emerged that promises to reduce the losses suffered worldwide by people who use drugs and their friends and families.

References

1. Coffin P (2008) *Overdose: A Major Cause of Preventable Death in Central and Eastern Europe and in Central Asia Recommendations and Overview of the Situation in Latvia, Kyrgyzstan, Romania, Russia and Tajikistan*. Vilnius, Lithuania: Eurasian Harm Reduction Network.
2. Warner M et al. (2009) *Increase in Fatal Poisonings Involving Opioid Analgesics in the United States, 1999–2006*. Bethesda, MD: US Department of Health and Human Services.
3. Hickman M et al. (2003) Drug-related mortality and fatal overdose risk: Pilot cohort study of heroin users recruited from specialist drug treatment sites in London. *Journal of Urban Health* 80: 274–87.
4. Perucci CA et al. (1991) Mortality of intravenous drug users in Rome: A cohort study. *American Journal of Public Health* 81: 1307–10.
5. Oppenheimer E et al. (1994) Death and survival in a cohort of heroin addicts from London clinics: A 22-year follow-up study. *Addiction* 89: 1299–1308.
6. van Ameijden EJ et al. (1999) Pre-AIDS mortality and morbidity among injection drug users in Amsterdam and Baltimore: An ecological comparison. *Substance Use and Misuse* 34: 845–65.
7. Tyndall MW et al. (2001) Impact of HIV infection on mortality in a cohort of injection drug users. *Journal of Acquired Immune Deficiency Syndrome* 28: 351–7.
8. Smyth B et al. (2007) Years of potential life lost among heroin addicts 33 years after treatment. *Preventive Medicine* 44: 369–74.
9. Gossop M et al. (2002) A prospective study of mortality among drug misusers during a 4-year period after seeking treatment. *Addiction* 97: 39–47.
10. Zhang L et al. (2005) [A 1-year prospective cohort study on mortality of injecting drug users]. *Zhonghua Liu Xing Bing Xue Za Zhi* 26: 190–3.
11. Sporer KA (1999) Acute heroin overdose. *Annals of Internal Medicine* 130: 584–90.
12. EMCDDA (2007) *The State of the Drugs Problem in Europe: Annual Report 2007*. Luxembourg: European Monitoring Center for Drugs and Drug Addiction.
13. Latkin CA et al. (2004) Social network correlates of self-reported non-fatal overdose. *Drug and Alcohol Dependence* 73: 61–7.
14. Galea S and Coffin PO (2003) Drug overdose: New insights, innovative surveillance, and promising interventions. *Journal of Urban Health* 80: 186–8.
15. Darke SG et al. (1997) Heroin-related deaths in south-western Sydney. *Medical Journal of Australia* 167: 107.
16. Centers for Disease Control and Prevention (2010) Announcements: Release of Issue Brief: Unintentional Drug Poisoning in the United States. *MMWR: Morbidity and Mortality Weekly Report* 59(10): 300.
17. Quan VM et al. (2007) Predictors of mortality among injecting and non-injecting HIV-negative drug users in northern Thailand. *Addiction* 102(3): 441–6.
18. Fairbairn N et al. (2008) Crystal methamphetamine use associated with non-fatal overdose among a cohort of injection drug users in Vancouver. *Public Health* 122: 70–78.
19. Kaye S and Darke S (2004) Non-fatal cocaine overdose among injecting and non-injecting cocaine users in Sydney, Australia. *Addiction* 99: 1315–22.
20. Sackoff JE et al. (2006) Causes of death among persons with AIDS in the era of highly active antiretroviral therapy: New York City. *Annals of Internal Medicine* 145: 397–406.
21. Ermak TN et al. (2009) Causes of death among people living with HIV in Russia. Paper presented at All-Russian Congress on Infectious Disease in Moscow, Russian Federation, 30 March to 1 April.
22. Sergeev B et al. (2003) Prevalence and circumstances of opiate overdose among injection drug users in the Russian Federation. *Journal of Urban Health* 80: 212–19.
23. Seal KH et al. (2001) Predictors and prevention of nonfatal overdose among street-recruited injection heroin users in the San Francisco Bay Area, 1998–1999. *American Journal of Public Health* 91: 1842–6.
24. Tobin KE and Latkin CA (2003) The relationship between depressive symptoms and nonfatal overdose among a sample of drug users in Baltimore, Maryland. *Journal of Urban Health* 80: 220–29.
25. Coffin PO et al. (2007) Identifying injection drug users at risk of nonfatal overdose. *Academic Emergency Medicine* 14: 616–23.
26. Darke S et al. (1996) Overdose among heroin users in Sydney, Australia: I. Prevalence and correlates of non-fatal overdose. *Addiction* 91: 405–11.
27. Powis B et al. (1999) Self-reported overdose among injecting drug users in London: Extent and nature of the problem. *Addiction* 94: 471–8.
28. Milloy MJ et al. (2009) Overdose experiences among injection drug users in Bangkok, Thailand. Paper presented at 20th International Conference on the Reduction of Drug-Related Harm in Bangkok, Thailand, 20 to 23 April.
29. Bergenstrom A et al. (2008) A cross-sectional study on prevalence of non-fatal drug overdose and associated risk characteristics among out-of-treatment injecting drug users in North Vietnam. *Substance Use and Misuse* 43: 73–84.
30. Yin L et al. (2007) Nonfatal overdose among heroin users in southwestern China. *American Journal of Drug and Alcohol Abuse* 33: 505–16.
31. Sterrett C et al. (2003) Patterns of presentation in heroin overdose resulting in pulmonary edema. *American Journal of Emergency Medicine* 21: 32–4.
32. Warner-Smith M et al. (2002) Morbidity associated with non-fatal heroin overdose. *Addiction* 97: 963–7.
33. Darke S et al. (2003) The ratio of non-fatal to fatal heroin overdose. *Addiction* 98: 1169–71.
34. Stoove MA et al. (2009) Overdose deaths following previous non-fatal heroin overdose: Record linkage of ambulance attendance and death registry data. *Drug and Alcohol Review* 28: 347–52.
35. Sherman SG et al. (2006) Prevalence and correlates of opiate overdose among young injection drug users in a large U.S. city. *Drug and Alcohol Dependence* 88: 182–7.
36. Fathelrahman AI et al. (2006) Factors associated with adult poisoning in northern Malaysia: A case-control study. *Human and Experimental Toxicology* 25: 167–73.
37. Farrell M and Marsden J (2008) Acute risk of drug-related death among newly released prisoners in England and Wales. *Addiction* 103: 251–5.
38. Darke S et al. (2002) Hair morphine concentrations of fatal heroin overdose cases and living heroin users. *Addiction* 97: 977–84.
39. Seaman SR et al. (1998) Mortality from overdose among injecting drug users recently released from prison: Database linkage study. *BMJ: British Medical Journal* 316: 426–8.
40. McGregor C et al. (1998) Experience of non-fatal overdose among heroin users in Adelaide, Australia: Circumstances and risk perceptions. *Addiction* 93: 701–11.
41. Zador D et al. (1996) Heroin-related deaths in New South Wales, 1992: Toxicological findings and circumstances. *Medical Journal of Australia* 164: 204–7.
42. Coffin PO et al. (2003) Opiates, cocaine and alcohol combinations in accidental drug overdose deaths in New York City, 1990–98. *Addiction* 98: 739–47.
43. Wang C et al. (2005) The effect of HIV infection on overdose mortality. *Aids* 19: 935–42.
44. Tardiff K et al. (1997) HIV infection among victims of accidental fatal drug overdoses in New York City. *Addiction* 92: 1017–22.
45. van Haastrecht HJ et al. (1994) Death from suicide and overdose among drug injectors after disclosure of first HIV test result. *Aids* 8: 1721–5.
46. Darke S et al. (1999) Fluctuations in heroin purity and the incidence of fatal heroin overdose. *Drug and Alcohol Dependence* 54: 155–61.
47. Tracy M et al. (2005) Circumstances of witnessed drug overdose in New York City: Implications for intervention. *Drug and Alcohol Dependence* 79: 181–90.
48. Sorensen JL et al. (1992) Mass media as drug users' key information source on overdoses. *American Journal of Public Health* 82: 1294–5.
49. Karbakhsh M and Salehian Zandi N (2007) Acute opiate overdose in Tehran: The forgotten role of opium. *Addictive Behaviors* 32: 1835–42.
50. Niveau G et al. (2002) Methadone maintenance treatment, criminality and overdose-related deaths. An ecological study, 1983–1999. *European Journal of Public Health* 12: 224–7.
51. van Ameijden EJ et al. (1999) Dose-effect relationship between overdose mortality and prescribed methadone dosage in low-threshold maintenance programs. *Addictive Behaviors* 24: 559–63.
52. Caplehorn JR et al. (1996) Methadone maintenance and addicts' risk of fatal heroin overdose. *Substance Use and Misuse* 31: 177–96.
53. Auriacombe M et al. (2004) French field experience with buprenorphine. *American Journal of Addiction* 13(Suppl. 1): S17–28.
54. Milloy MJ et al. (2008) Non-fatal overdose among a cohort of active injection drug users recruited from a supervised injection facility. *American Journal of Drug and Alcohol Abuse* 34: 499–509.
55. Kerr T et al. (2005) Safer injection facility use and syringe sharing in injection drug users. *Lancet* 366: 316–18.
56. Pizzey R and Hunt N (2008) Distributing foil from needle and syringe programmes (NSPs) to promote transitions from heroin injecting to chasing: An evaluation. *Harm Reduction Journal* 5: 24.
57. Exchange Supplies: www.exchangesupplies.org/needle_exchange_supplies/foil/foil_intro.html (last accessed 22 March 2010).
58. Sherman SG et al. (2008) A qualitative study of overdose responses among Chicago IDUs. *Harm Reduction Journal* 5: 2.
59. Davidson PJ et al. (2003) Fatal heroin-related overdose in San Francisco, 1997–2000: A case for targeted intervention. *Journal of Urban Health* 80: 261–73.
60. Bridge J (2010) Route transition interventions: Potential public health gains from reducing or preventing injecting. *International Journal of Drug Policy* (in press).
61. Piper TM et al. (2007) Overdose prevention for injection drug users: Lessons learned from naloxone training and distribution programs in New York City. *Harm Reduction Journal* 4: 3.
62. Galea S et al. (2006) Provision of naloxone to injection drug users as an overdose prevention strategy: Early evidence from a pilot study in New York City. *Addictive Behaviors* 31: 907–12.
63. Seal KH et al. (2005) Naloxone distribution and cardiopulmonary resuscitation training for injection drug users to prevent heroin overdose death: A pilot intervention study. *Journal of Urban Health* 82: 303–11.
64. Dietze P et al. (2002) Bystander resuscitation attempts at heroin overdose: Does it improve outcomes? Drug and Alcohol Dependece 67: 213–18.
65. Wanger K et al. (1998) Intravenous vs subcutaneous naloxone for out-of-hospital management of presumed opioid overdose. Academic Emergency Medicine 5: 293–9.
66. Dowling J et al. (2008) Population pharmacokinetics of intravenous, intramuscular, and intranasal naloxone in human volunteers. Therapeutic Drug Monitoring 30: 490–6.
67. Kerr D et al. (2008) Intranasal naloxone for the treatment of suspected heroin overdose. Addiction 103: 379–86.
68. Doe-Simkins M et al. (2009) Saved by the nose: Bystander-administered intranasal naloxone hydrochloride for opioid overdose. American Journal of Public Health 99: 788–91.
69. Robertson TM et al. (2009) Intranasal naloxone is a viable alternative to intravenous naloxone for prehospital narcotic overdose. Prehospital Emergency Care 13: 512–15.
70. Szalavitz M (2009) Do DIY anti-overdose kits help? Time: www.time.com/time/health/article/0,8599,1901794,00.html (last accessed 29 March 2009).
71. Ataiants J (2010) Personal Communication, Open Society Institute.
72. Sherman SG et al. (2009) "The life they save may be mine": Diffusion of overdose prevention information from a city sponsored programme. International Journal of Drug Policy 20: 137–42.
73. Beletsky L et al. (2007) Physicians' knowledge of and willingness to prescribe naloxone to reverse accidental opiate overdose: Challenges and opportunities. Journal of Urban Health 84: 126–36.
74. Worthington N et al. (2006) Opiate users' knowledge about overdose prevention and naloxone in New York City: A focus group study. Harm Reduction Journal 5: 19.
75. Lagu T et al. (2006) Overdoses among friends: Drug users are willing to administer naloxone to others. Journal of Substance Abuse Treatment 30: 129–33.
76. Seal KH et al. (2003) Attitudes about prescribing take-home naloxone to injection drug users for the management of heroin overdose: A survey of street-recruited injectors in the San Francisco Bay Area. Journal of Urban Health 80: 291–301.
77. Coffin PO et al. (2003) Preliminary evidence of health care provider support for naloxone prescription as overdose fatality prevention strategy in New York City. Journal of Urban Health 80: 288–90.
78. Kerr D et al. (2008) Attitudes of Australian heroin users to peer distribution of naloxone for heroin overdose: Perspectives on intranasal administration. Journal of Urban Health 85: 352–60.
79. Green TC et al. (2008) Distinguishing signs of opioid overdose and indication for naloxone: An evaluation of six overdose training and naloxone distribution programs in the United States. Addiction 103: 979–89.
80. Kerr D et al. (2009) Improved response by peers after witnessed heroin overdose in Melbourne. Drug and Alcohol Review 28: 327–30.
81. McAuley A et al. (2009) Responsible management and use of a personal take-home naloxone supply: A pilot project. Drugs: Education, Prevention, and Policy, DOI: 10.1080/09687630802530712.
82. Strang J et al. (2008) Overdose training and take-home naloxone for opiate users: Prospective cohort study of impact on knowledge and attitudes and subsequent management of overdoses. Addiction 103: 1648–57.
83. Sporer KA and Kral AH (2007) Prescription naloxone: A novel approach to heroin overdose prevention. Annals of Emergency Medicine 49: 172–7.
84. Maxwell S et al. (2006) Prescribing naloxone to actively injecting heroin users: A program to reduce heroin overdose deaths. Journal of Addictive Diseases 25: 89–96.
85. ISRCTN Register (n.d.) NALoxone InVEstigation (N-ALIVE) Pilot Randomized Controlled Trial (RCT): www.controlled-trials.com/ISRCTN34044390 (last accessed 18 March 2010).

3.7: Bridging the gap: An analysis of global spend and resourcing need for harm reduction

About the authors:

Gerry Stimson is a public health social scientist and Executive Director of the International Harm Reduction Association (IHRA).
Rick Lines is an expert in human rights, health and prisons and Deputy Director of IHRA.

The authors would like to thank Susie McLean for her input on this chapter as well as the co-authors and reviewers of Three Cents a Day Is Not Enough. Resourcing HIV-Related Harm Reduction on a Global Basis published by IHRA in April 2010, in which the analysis presented in this chapter is covered in more detail.

Introduction

Twenty-five years into the response to HIV among people who inject drugs, considerable progress has been made. The techniques to prevent the spread of HIV infection among people who inject drugs are well known and well tested and HIV-related harm reduction has been shown to work in a wide range of settings.

The international community has endorsed the HIV-related harm reduction package. The effectiveness of the comprehensive package of HIV prevention – including opioid substitution therapy (OST), outreach, needle and syringe programmes (NSPs), education and sexual risk interventions for people who inject drugs – has been well established and evaluated in high, middle and low income countries.[1] Numerous reviews, including an extensive assessment by the US Institute of Medicine,[2] have concluded that the scientific literature is clear that OST, access to needles and syringes and outreach are effective at decreasing drug-related risk behaviours.

The international community has also endorsed universal access to prevention, treatment and care for all people affected by HIV/AIDS, including people who inject drugs,[3] and there have been major increases in the allocation of resources to fight HIV.[4]

However, notwithstanding this progress, people who inject drugs in the majority of countries do not get access to the prevention tools and services that they need and to which they are entitled.[5] Despite the international commitment to universal access, resourcing for harm reduction remains entirely inadequate to meet the needs of people who inject drugs worldwide. IHRA considers that $160 million[a] is a plausible estimate of the money spent on HIV-related harm reduction in low and middle income countries in 2007.[6] Amounting to less than three US cents per day per injector in these countries, this response is clearly insufficient. It also means that the biggest investors in harm reduction are people who inject drugs. The expenditure on harm reduction supplies (e.g. needles and syringes) and on drug treatment mainly comes from drug users' out-of-pocket expenses rather than from harm reduction services.

This chapter examines expenditure on harm reduction, how far this expenditure falls short of need and the implications of the shortfall for the international community, for national governments, for donors and for the future shape of harm reduction.

a All $ figures are US dollars.

A low-cost, high-impact intervention

- 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, considerably less than anti-retroviral treatment, which costs approximately $2,000 per life year saved.[7]
- 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.'[8]
- NSPs directly averted an estimated 32,050 new HIV infections and 96,667 new hepatitis C infections in Australia between 2000 and 2009. For every dollar invested in needle and syringe exchange, more than four were returned in health care savings.[9]

The cost of harm reduction

There has been insufficient research done on the costs of harm reduction interventions across an adequate range of countries. Although in theory the information needed should be relatively easy to access from programme budgets, in practice there are a number of difficulties in calculating costs.

Take the example of NSPs. It is difficult to assess their costs because of the range of delivery systems: pharmacies, vending machines, outreach and specialist exchange programmes, each with its own specific associated cost. Also, most needle and syringe exchanges provide a mix of services: they often deliver information materials and voluntary HIV counselling and testing, and may also offer social support, legal advice and referral to treatment. As well as the costs of the needles and syringes, there are the costs of set-up, staffing, premises, overheads and ensuring local political and community support.

Likewise, OST can take place in a range of settings from specialist units through to primary care, each with staff at different levels of cost and each offering various services in addition to methadone treatment. While these services are usually delivered through government health systems in high income countries, civil society organisations are often the primary providers of harm reduction in low and middle income countries.

Despite these inherent difficulties, some costings are provided in the resource needs estimates developed by UNAIDS,[10] the Commission on AIDS in Asia[7] and the UN Regional Task Force on Injecting Drug Use and HIV/AIDS for Asia and the Pacific.[11] These suggest that the cost of delivering NSPs for each injector reached in drop-in and outreach programmes ranges between $51 and $235 per year (see Figure 3.7.1). The annual costs for OST range from $132 to $1,811 (see Figure 3.7.2). Higher costs reflect higher labour costs and treatments using buprenorphine, which is comparatively expensive.

Based on these figures, it is reasonable to estimate that the cost per injector per year in low income countries is approximately $100 for NSPs and $500 for OST. These figures are not normative and not intended to be used for budget planning purposes.

Figure 3.7.1: Examples of unit costs for NSPs[12]

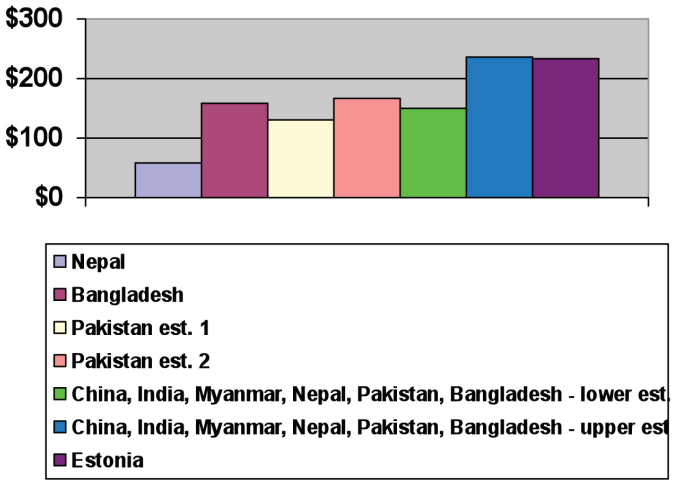
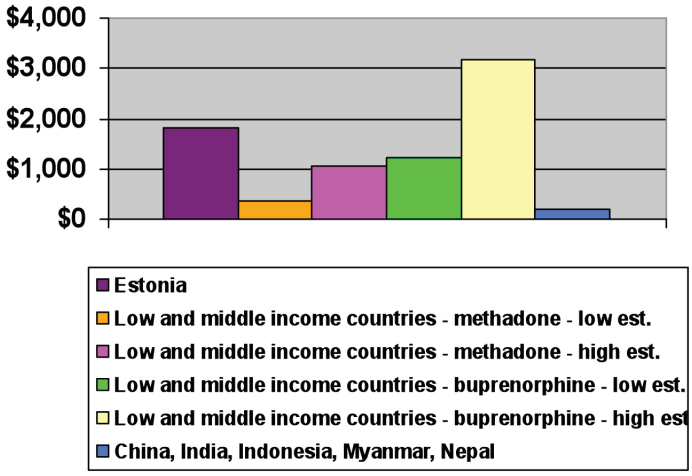


Figure 3.7.2: Examples of unit costs for OST[12]



Estimating the total resources needed for harm reduction

UNAIDS makes estimates of the total global and country resources needed for HIV prevention based on the size of the target population, the unit cost of each intervention and the level of coverage required (see Figure 3.7.3).

Figure 3.7.3: Calculating resource needs estimats

Population size	x	Coverage %	x	Unit cost of intervention

This equation is easy to understand and has simple inputs. More sophisticated resource models can be developed, but given the generally low expenditure on harm reduction that is reported, the simple resource needs model is adequate for present purposes.

The size of the target population can be estimated using a variety of research methods. Most countries lack good knowledge of the size of the target population and therefore the best estimates for the numbers of people injecting drugs are reported by the Reference Group to the United Nations on HIV and Injecting Drug Use.[13]

There has been considerable debate about the level of coverage required for effective HIV prevention. The original idea of '60%' coverage came from vaccine programmes, which do not require 100% coverage in order to provide a good level of population immunity. Public health specialists have argued, based on epidemic modelling studies, that less than 100% coverage is needed in order to prevent epidemics. Expert consensus, although arguably based on limited evidence and analysis, is that NSPs need to cover 60% of the population and OST programmes need to cover 40% of the population. These are the figures used in UNAIDS resource needs estimates.[14]

This then poses the problem of how to measure coverage. Coverage is the proportion of a population needing a service that has access to that service. The WHO, UNAIDS and UNODC target-setting guide defines coverage of NSPs as the number of people who inject drugs who have had access to a programme at least once a month or more in the past twelve months.[15] Other measures might, for example, be the percentage of injections that are covered by using a sterile syringe.

It is clear that, for many reasons including logistics, access and appropriateness of interventions, 100% coverage will not be reached. However, it is important to recognise that the way in which 'universal access' is interpreted by UNAIDS falls far short of the 2006 declaration of commitment on HIV/AIDS. The implications of this declaration are that *all people who inject drugs should have access to HIV prevention, treatment and care.*[3] Given the fundamental commitment of the UNAIDS programme to human rights, all vulnerable people have the right to have access to HIV interventions. A 'right to health' approach therefore expects that every member of the target population should have access to essential medicines and to harm reduction services.

Refinements to resource needs estimates[16]

Resource needs estimation models could also take into consideration:

- Economies of scale: The cost of going to scale may not be a simple replication of the costs of small projects on which the unit costs are often derived. Scaling up and bulk purchasing can lead to cost savings.
- Combined delivery: There can be savings where two or more services are provided in the same place, hence reducing overhead costs.
- Interaction effects within harm reduction services: There can be interactions between different interventions, where, for example, the successful delivery of needles and syringes significantly reduces health burden and hence other health care costs.
- Interaction effects within health and community delivery systems: Where, for example, investment in primary care reduces the need for outreach and community services, or vice versa; or where investment in OST strengthens other aspects of primary care by enhancing staff competency.
- Cost-effective allocation: The simple model assumes no priorities between interventions. However, some will be more cost-effective than others and may need to be put in place first. In resource-constrained settings, priority might be given to establishing low cost/high effectiveness interventions.

Estimates of the resources needed

Applying the resource needs model to all populations, the UN estimates that the total global resources needed for HIV/AIDS between 2009 and 2013 would be almost $200 billion to achieve universal access, and $140 billon for slower scale-up to achieve universal access by 2015.[10]

For people who inject drugs, UNAIDS uses the 60% target for NSPs and 40% target for OST. Based on this, UNAIDS estimates that the resources needed for needle exchange and OST are $2.13 billion in 2009 and $3.29 billion in 2010. These figures exclude the resources required for anti-retroviral treatment, care and support. The UNAIDS estimates are equivalent to an average per injector of $170 in 2009 and $256 in 2010.

Estimating global spending on harm reduction

There is no simple, accurate source of information on how much is being spent on harm reduction. Despite the establishment of mechanisms for global resource tracking, harm reduction is relatively invisible in national and international budgets. This may be indicative of the lack of attention to the issue of resourcing for harm reduction by advocates, national governments and international agencies.

The UNAIDS Resource Tracking, Resource Needs and Costing Team collects information from donors and national governments and aims to track money from source to spend. Although the National AIDS Spending Assessment (NASA) specifies detailed budget

lines, including harm reduction, these often remain unused in the reports and it is generally not possible to analyse resource allocation within a country according to specific prevention activities.

More detailed information about harm reduction expenditure has to be gained directly from donors, such as the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), bilateral national donors and large philanthropic donors, as well as from implementing agencies. As there is no existing database of harm reduction donors or harm reduction programmes, it is only possible to come to informed estimates through the use of personal contacts within donor countries and agencies and by cross-checking with implementing agencies in receipt of funds, a process that inevitably fails to identify some donors.

IHRA's main sources of information included personal contacts, project reports, financial reports and the websites of multilateral agencies and country and philanthropic donors. The data were of variable availability and quality and attempts were made, where possible, to cross-check information and to compare estimates with those of others and against country-level estimates. All estimates were referred to donors for checking.

In collecting information on global resourcing, 'HIV-related harm reduction' was defined as comprising the comprehensive package of interventions including needle exchange, OST, outreach, voluntary testing and counselling, access to primary health care and prevention of sexual transmission. As the objective was to identify spending on frontline HIV prevention – in other words how much of the money was actually going to HIV prevention services for people who inject drugs – attempts were made to exclude spending on antiretroviral treatment, research and capacity building. In practice, however, it is often impossible to disentangle expenditure in this manner.

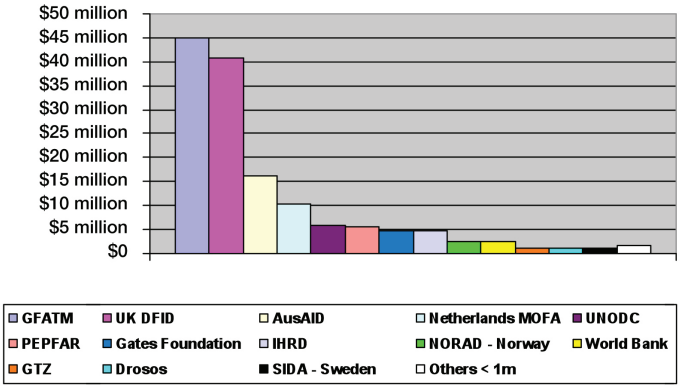
Problems in gaining information on expenditure

- Donors not making budgeted information available in the public domain.
- Countries not keeping central records of international spending.
- Lack of functional budgets, i.e. budget lines specifying HIV prevention activities.
- Harm reduction expenditure subsumed under broader budgets, such as HIV/AIDS or development.
- Donors moving from earmarked funding to global budget support.
- Different definitions of HIV prevention and harm reduction.
- Where HIV expenditures are identified, a lack of disaggregation of prevention resources to different populations.
- Lack of disaggregated expenditure according to capacity building, care, treatment, support and impact mitigation, as well as direct services.
- Lack of clarity between financial commitments and actual disbursements.
- Differences in accounting years.
- Potential double counting, where resources are reported both by donor agencies and sub-recipients.
- Lack of reporting of 'out-of-pocket' expenditure on harm reduction by people who inject drugs.

The funds that IHRA identified are shown in Figure 3.7.4. There is room for error in these estimates. In many cases, budgets were unclear, necessitating judgments about, for example, the proportion spent in each year and the allocation of expenditures specifically for HIV-related harm reduction within larger budgets. As a result the figures probably underestimate domestic expenditure (i.e. expenditure from national governments). However, many of the budgets were likely to have lower harm reduction components than those in these estimates.

While the assumptions used in estimating expenditure are open to challenge, this only points to the need for better data collection globally and it is fair to assume that errors resulting in over- or under- estimation will cancel out each other. Specific sums reported may be contested, but it is unlikely that any major sources of funding have been overlooked.

Figure 3.7.4: Estimated expenditure on harm reduction interventions, 2007[12]



Estimated total expenditure

It is cautiously estimated that approximately $160 million was invested in HIV-related harm reduction in low and middle income countries in 2007, of which $136 million (90%) was from international donors.

There is little evidence to suggest that this sum has increased since 2007. In some countries, expenditure on harm reduction might have decreased as many projects initiated within the last decade are coming to an end. The estimate of $160 million is plausible when compared with the spend in countries where harm reduction budgets were able to be identified, most of which were countries with higher than usual investment.

The $160 million estimated expenditure equates to $12.80 per injector per year in low and middle income countries, or three US cents per day. This figure is calculated by dividing the global spending by the estimated 12 million people who inject in low and middle income countries. $12.80 per injector compares with an estimated per capita spend of $25 per person in Ukraine, $13.50 in the Russian Federation, $62.50 in Vietnam and $141.60 in Taiwan.[6]

This estimate of $160 million exaggerates the actual amount of funding for frontline services and interventions. Given the early state of implementation of harm reduction in many countries, much of the resourcing goes into capacity building and advocacy.

Many large programmes funded by bilateral donors target both general populations and vulnerable sub-populations. Even where harm reduction is identified, the total budgets reported often do not include a breakdown of what is spent on each activity, for example on OST or NSPs. In a few cases, spending on particular activities could be identified. For example, it is estimated that approximately one-third of the funding from the German GTZ and the Dutch Ministry of Foreign Affairs goes on direct health services; the equivalent proportion is approximately 30 to 60% for AusAID.[6]

Given the lack of resource tracking for harm reduction, there remains room for error in these estimates. For the reasons identified above, these figures probably overestimate the amount spent. But even if they underestimate global spending by a factor of two or three (which is unlikely) it does not change the conclusion that the amount of money invested in harm reduction is extremely low.

Figure 3.7.5: Estimated total harm reduction expenditure, 2007

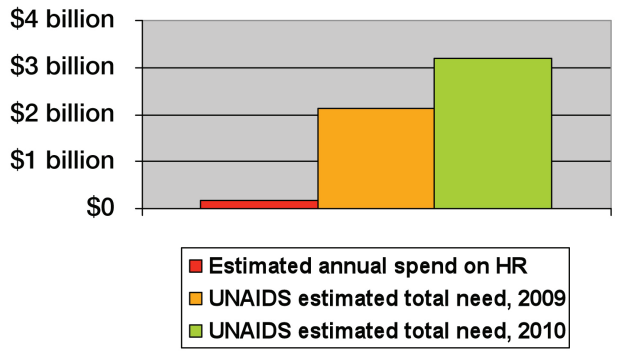
Global total for low and middle income countries	Annual total per injector	Daily total per injector
$160 million	$12.80	3 cents

On the basis of expert advice from HIV researchers, three cents a day is less than the amount many drug users themselves will be spending on needle and syringes and other harm reduction commodities including drug treatment.

The gap between spending and need

While there are challenges in accurately determining spending levels, the huge gap between the estimated need and the estimated spend overshadows any measurement errors (see Figure 3.7.6). The $160 million spent on harm reduction in 2007 was a mere 7% of the $2.13 billion estimated by UNAIDS as necessary in 2009 to address HIV prevention among people who inject drugs. And it was only 5% of the $3.2 billion UNAIDS estimates to be needed in 2010.

Figure 3.7.6: The harm reduction resource gap



The annual spend of $12.80 per injector is low in comparison with the indicative unit costs of providing needles and syringes (approximately $100 per person per year) or methadone (approximately $500 per person per year). It is much less than the UNAIDS resource needs calculations, which indicate that approximately $170 and $256 per injector per year should be spent in 2009 and 2010 respectively.

Comparing the current estimated spend with the estimated need, the resources required for HIV prevention for people who inject drugs are between fourteen and twenty times greater than the resources currently allocated.

What can be done?

There are many things that can be done.

The many obstacles to scaling up HIV-related harm reduction for people who inject drugs have been well documented in the *Global State of Harm Reduction* and elsewhere. HIV prevention for injecting drug users is unpopular. Implementing harm reduction, both establishing it to begin with and then delivering it with good coverage, requires many obstacles to be overcome. These obstacles frequently go hand in hand with a lack of investment. Often the demand for harm reduction services does not exist at a high level within countries and is insufficiently vocalised by civil society organisations.

Obstacles to harm reduction

- Ignorance of governments and public health officials.
- Antipathy to drug users by governments and professional elites.
- Massive over-investment in criminal justice approaches to drugs and drug users at the expense of health investment.
- Legal barriers to harm reduction interventions in many countries, which prevent NGOs from operating, make needle and syringe exchange illegal or forbid the prescribing of methadone or other opioid substitution therapies.
- The marginal and undervalued place in society of people who use drugs and, by association, those who choose to work with them.

Funding for harm reduction must be made proportionate to need or to funds going into HIV prevention. Based on evidence of the lack of coverage and the concomitant resources, a conservative guideline for donors is that around ***20% of total global funds allocated for HIV prevention for low and middle income countries should go into harm reduction.***

The limited number of donors who fund harm reduction is a notable barrier. The main international donors for harm reduction – the United Kingdom, Australia and the Netherlands – between them accounted for $67.4 million in 2007 (42% of the donor funding identified). This amount is greater than that provided by the Global Fund. Clearly there is an urgent need for more wealthy countries to fund harm reduction. In this regard, the potential for the US President's Emergency Plan for AIDS Relief (PEPFAR) to openly and directly fund specific harm reduction interventions now that US policy against needle and syringe exchange has been removed is a welcome development.

Recommendations

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 NGOs.
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.

There needs to be a significant increase in allocations to harm reduction within country budgets. National governments have typically been unwilling or unable to provide their own resources, although there are notable exceptions. Malaysia, for example, where approximately 70% of HIV infections between 1997 and 2005 were related to unsafe injecting, committed $150 million in 2005 for harm reduction programmes including OST and NSPs.[17]

Taiwan introduced a harm reduction programme in 2005, including OST and NSPs, and in 2007 doubled the national HIV/AIDS prevention budget to $8.5 million.[18] By July 2006 every city and province was distributing free needles to drug injectors. The number of syringes distributed increased to four million in 2007. OST was scaled up into a national programme in 2009.

Domestic allocations to harm reduction need to be tracked – even if they are only of symbolic significance – as they indicate political will and commitment to harm reduction.

Another barrier of note is that few philanthropic donors fund harm reduction or are able to identify harm reduction expenditure within their budgets. The Bill and Melinda Gates Foundation funds only two major projects that include harm reduction: the Avahan Project in India and the China HIV Prevention Programme. $4.8 million was identified as being spent on harm reduction in these projects in 2007. This amounts to 0.001% of the annual Gates Foundation budget for 2008/9 and 1.96% of the total HIV grants for 2006 to 2009.

There is clearly room for current donors – both national governments and philanthropic organisations – to invest more of their budgets in harm reduction, and also for more donors to begin funding. However, achieving this will require a concerted advocacy effort, most likely led by current donors.

There is also the need to address the apparent under-performance of the Global Fund, which spent an estimated $45 million on harm reduction in 2007 and an estimated $180 million over the period from 2004 to 2008. These figures compare poorly with Global Fund spending on HIV/AIDS of $1 billion in 2007, $1.6 billion in 2008 and $2.8 billion in 2009.[19] [20]

The difficulty is that the Global Fund responds to country-level demands. How then should the international community, which resources the Global Fund, deal with the problem of countries that ignore drug users in their bids or underplay the significance of HIV/AIDS and drug use? There are a number of things that can be done to draw attention to drug use issues, such as requiring all applications to be firmly based on epidemiological and resource needs, according to an agreed methodology, so as to ensure that the needs of the most-at-risk groups are properly reflected in bids.

The Global Fund is committed to the involvement of civil society organisations in the response to HIV/AIDS. However, many civil society organisations find it difficult to engage with Global Fund bids through the national country coordinating mechanism. The Global Fund can do much more to publicise the issue of the under-resourcing of harm reduction through its work with civil society organisations and Global Fund grant writers. The demand for harm reduction expenditure has to be encouraged.

The need for advocacy for harm reduction

The current resource gap is so huge that resource mobilisation is unlikely to occur unless there is strong advocacy for harm reduction resources at national, regional and global levels. Unfortunately, harm reduction frontline organisations and harm reduction advocacy organisations are themselves seriously underfunded.

Only a handful of NGOs are funded for advocacy at the international or regional levels. In this respect, the recent consultation by the Global Fund on a community system strengthening framework is a welcome development.[21] [22] For harm reduction NGOs, this means not only the provision of direct services to drug users, but also the possibility of funding to strengthen community organisations and to create a conducive legal and policy framework for effective harm reduction delivery.

Much support will be needed to enable harm reduction and drug user groups involved in advocacy to access these funds and negotiate their place in national Global Fund financed programmes. Harm reduction organisations are currently small and in a vicious circle as they lack the capacity to bid for the funds that would eventually increase their capacity.

There are other barriers preventing the development of effective regional and international advocacy for harm reduction. Many donors are often unenthusiastic about funding advocacy and prefer to direct their resources to frontline services. In addition, funding restrictions on national and philanthropic donors frequently prevent monies going to international or regional organisations. Large donors also often lack provision for handling the relatively small amounts of money required by small organisations.

There is an urgent and time-limited need to fund harm reduction advocacy so that the demand for harm reduction funding can be enhanced. An emergency Community Fund for Harm Reduction would provide resources to help organisations build their capacity, strengthen their voices and bid for harm reduction resources. Building harm reduction capacity and strengthening advocacy is also a means for increasing political commitment.

Many donors are shifting from earmarked funding to general budget support. In other words, they are becoming less interested in funding monies earmarked for specific diseases, such as HIV/AIDS, and more interested in funding health services and strengthening general budget support to poor countries. This encourages country ownership and allows countries to set their demands. However, the downside is that if a country is not interested in specific diseases or population groups, they are cut out of bids for funding at the national level.

A shift to general budget support, and the Global Fund's emphasis on responding to demand, clearly means that advocates have to be funded to ensure that marginalised groups get their share of funds.

The difficulty in obtaining high-quality information on harm reduction and expenditure from otherwise well-intentioned donors is perhaps symptomatic of the lack of attention given to this area. Significant improvements can be made to the NASA as there are serious discrepancies between country-level data and information about actual budgets.

Donors' difficulties in providing accurate information suggest that there is a need for a specialist global resource-monitoring system to track harm reduction expenditure. This would not require a huge amount of resources. It is a specialist activity that may be difficult to subsume within UNAIDS. Indeed, although it is the role of UNAIDS to monitor global spending and to encourage donors and countries to better report spending according to agreed criteria and functional budget lines, this activity should not be left to UN agencies alone.

There is a clear role for civil society to be involved in the process of resource tracking, to establish databases on the harm reduction programmes that are funded and to use this information to advocate for more resources. Such a framework would increase donor accountability and is potentially of value to donors themselves in improving coordination and avoiding duplication. It might also go some way to avoiding the funding gaps that so often arise between funding rounds.

Linked to this, there is a need for better estimates of resource needs so as to advocate for and allocate resources more efficiently on the basis of need, rather than on donor idiosyncrasies. Current resource needs estimation tends to be too global (as in the case of UNAIDS) or only patchily available at the national level (as in the work of the Commission on AIDS in Asia). A more transparent discussion about the interventions included in resource needs models, better information on unit costs and more data for more countries are required.

Given the huge gap in funding, it is not unreasonable to question whether needs will ever be fully met. It is difficult to imagine that donors will be sufficiently animated to increase their funding tenfold or twentyfold to bridge the current gap. Serious discussion within the public health and harm reduction community is therefore required about the best way to deliver harm reduction services.

Currently, given the current low scale of harm reduction activity, a scale-up to high levels of coverage tends to be done by the multiplication of specialist NGO-led micro projects, for example moving from a few needle and syringe exchanges to many. Furthermore, the specialist nature of these services means that harm reduction projects are mainly delivered by civil society and community organisations.

There is, however, a need to explore different ways of delivering harm reduction services. For example, needle and syringe access can be increased by changing legislation about access and sale of needles and syringes in pharmacies. In this manner, not all countries need go through the route of specialist needle and syringe exchanges, but might instead jump straight to wider scale distribution through pharmacies or ordinary shops.

Another model of service delivery involves integrating harm reduction into general health and social welfare systems, whereby it becomes part of the responsibility of ordinary health and welfare systems to address harm reduction issues and to have harm reduction activities. This in part reflects the emphasis of some donors in shifting from donor-driven earmarked financing towards general budget support.

Australia and European countries with well-established harm reduction programmes have already taken significant steps towards integrating harm reduction into primary care and other community-led services. However, there are risks in this approach. The jump to integration, or to general budget funding, might backfire and exclude the very type of civil society organisations and input that are needed in the response to HIV/AIDS.

Currently there is no centre of excellence within the UN system or within academic institutions with the global analytic capacity to explore how harm reduction should be delivered. As the end of the third decade of harm reduction approaches, greater capacity to critically explore new models of harm reduction service delivery is certainly required. The comprehensive package alone may no longer deliver what is needed.

References

1. Ball A et al. (eds) (2005) World Health Organization – Evidence for action for HIV prevention, treatment and care among injecting drug users. *International Journal of Drug Policy* 16, supp. 1.
2. Institute of Medicine (2006) *Preventing HIV Infection among Injecting Drug Users in High Risk Countries: An Assessment of the Evidence*. Washington, DC: The National Academies Press.
3. UN General Assembly (2006) Political declaration on HIV/AIDS. UN Doc. No. A/RES/60/262, para. 22.
4. UNAIDS (2009) *What Countries Need: Investments Needed for 2010 Targets*. Geneva: UNAIDS, p. 12.
5. Mathers B et al. (2010) HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and country level coverage. Lancet, 375(9719): 1014–28.
6. Stimson GV et al. (2010) *Three Cents a Day Is Not Enough. Resourcing HIV-Related Harm Reduction on a Global Basis*. London: IHRA.
7. Commission on AIDS in Asia (2008) *Redefining AIDS in Asia: Crafting an Effective Response*. New Delhi: Oxford University Press.
8. National Institute on Drug Abuse, NIDA International Program, Methadone Research Web Guide: http://international.drugabuse.gov/collaboration/guide_methadone/partb_question15.html (last accessed 18 March 2010).
9. Australian Government, Department of Health and Ageing (2009) *Return on Investment 2: Evaluating the Cost-Effectiveness of Needle and Syringe Programs in Australia*. Canberra, ACT: Department of Health and Ageing.
10. UNAIDS (2007) *Financial Resources Required to Achieve Universal Access to HIV Prevention, Treatment, Care and Support*. Geneva: UNAIDS.
11. United Nations Regional Task Force (UNRTF) on Injecting Drug Use and HIV/AIDS in Asia and the Pacific (2009) *Estimation of Resource Needs and Availability for HIV Prevention and Care Among People Who Inject Drugs in Asia: Report*. Bangkok: UNRTF.
12. For further information on these figures, see Stimson GV et al. (2010) op. cit.
13. Mathers B et al. (2008) Global epidemiology of injecting drug use and HIV among people who inject drugs: A systematic review. *Lancet* 372(9651): 1733–45.
14. Verster AD et al. (2007) *Financial Resources Required to Achieve Universal Access to HIV Prevention, Treatment, Care and Support: Methodological Annex* – IX. Geneva: UNAIDS.
15. WHO (2009) *WHO, UNODC, UNAIDS Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users*. Geneva: WHO.
16. Shepard DS et al. (2007) *Critical Review of Costing Models to Estimate Resource Needs to Address Global HIV/AIDS*. Geneva: UNAIDS.
17. UNGASS Country Progress Report: Malaysia (2008): http://data.unaids.org/pub/Report/2008/malaysia_2008_country_progress_report_en.pdf (last accessed 18 March 2010).
18. Information provided by Centers for Disease Control, Taiwan and Asian Harm Reduction Network. Information also taken from Taiwan Centers for Disease Control (2009) *Annual Report 2009*. Taiwan: CDC, Department of Health; Chen Y-MA and Kuo SH-S (2007) 'HIV-1 in Taiwan'. Lancet 369(9562): 623–5.
19. The Global Fund to Fight AIDS, Tuberculosis and Malaria (2009) *Scaling Up for Impact: Results Report*. Geneva: The Global Fund: 31.
20. The Global Fund total grant disbursement in the period from 1 January to 31 December of the reported year. Source: Global Fund Online Grant Portfolio: www.theglobalfund.org/programs/search/?search=3&lang=en (last accessed 14 January 2010).
21. Global Fund to Fight AIDS, Tuberculosis and Malaria (2008) Fact Sheet: Community Systems Strengthening. Geneva: The Global Fund.
22. Global Fund to Fight AIDS, Tuberculosis and Malaria (2010) Draft Community Systems Strengthening Framework: www.aidsalliance.org/includes/document/CSS_framework.pdf (last accessed 18 March 2010).