

C H A P T E R

22

*HIV Risk
Reduction in
Injection
Drug Users*

ANDREW L. BALL
NICK CROFTS



HIV Risk Reduction in Injection Drug Users

INTRODUCTION

There are an estimated 6 to 10 million injection drug users (IDUs) worldwide, and as many as 3.3 million of them are infected with HIV. Approximately 5 percent to 11 percent of AIDS cases globally are related to injection drug use (IDU). Sharing contaminated equipment and drug preparations are highly efficient means for transmitting HIV.

This chapter describes the methods used for assessing HIV/AIDS epidemics among IDUs, interventions available for preventing such epidemics and evidence for the effectiveness of these programs. It examines the feasibility and application of various projects in resource-constrained settings and their limitations. Finally, it offers guidance for policy makers on selecting priority interventions for communities where IDU is a significant factor in the spread of HIV.

MAGNITUDE OF THE PROBLEM

There have been explosive HIV epidemics among IDUs in a wide range of cities in the past 20 years; in some, HIV prevalence among IDUs has escalated from less than 5 percent to more than 40 percent in a 12-month period. The hepatitis C virus (HCV) has been an IDU infection far longer than has HIV, and where HIV prevalence has reached 40 percent or more, it is proving difficult to bring HCV epidemics under control.

Adolescents comprise an especially vulnerable population. This age group not only has the highest HIV incidence rates, it is also the age when drug use is often initiated.

STRATEGIES FOR HIV PREVENTION AMONG IDUS

There is evidence that effective interventions exist that can prevent HIV transmission at both individual and population levels. This part of the chapter is divided into three sections:

- Assessing for intervention
- Interventions to reduce individual risk behaviors
- Public health interventions to reduce the HIV risk environment

ASSESSING FOR INTERVENTION

The rapid spread of HIV associated with IDU demands assessment methods that are affordable, rapid, will result in immediate action, are easy to use and can monitor further developments. Rapid assessment and response (RAR) methods have been used widely in both developed and developing countries for planning HIV prevention strategies among drug-using populations. Utilization of behavioral surveillance surveys (BSS) also recognizes the importance of monitoring and tracking HIV risk behaviors as well as actual cases and HIV/AIDS spread.

INTERVENTIONS TO REDUCE INDIVIDUAL RISK BEHAVIORS

Different drug-using behaviors pose different risks for HIV transmission. At an individual level, interventions aim to change behavior to reduce HIV risks, with the ultimate goal of risk elimination. Specific interventions are:

- HIV information, education and communication (IEC) programs
- Risk-reduction counseling
- Voluntary counseling and HIV testing (VCT)
- Disinfection programs
- Needle-syringe programs
- Agonist pharmacotherapy programs
- HIV treatment and care

Each of these approaches is described in terms of its objectives, models of delivery, feasibility in resource-constrained settings, effectiveness and benefits, risks and limitations.

PUBLIC HEALTH INTERVENTIONS TO REDUCE THE RISK ENVIRONMENT

Although the strategies outlined above may reduce individual HIV risks, no single one can prevent or stop HIV epidemics among drug-using populations. Principles for preventing or stopping such epidemics are provided.

A public health response aims to bring all these principles together and support their implementation by:

- Promoting a “healthy public” policy and legislation
- Creating a safe and supportive environment for IDUs to adopt healthier behaviors
- Mobilizing IDUs and their communities to take action to reduce risks

- Making health and social services more responsive to the needs of IDUs
- Ensuring that members of the community have the necessary knowledge, skills and capacity to respond to the problem

LESSONS LEARNED AND RECOMMENDATIONS

A number of lessons learned and recommendations are provided, supporting the notion that specific actions can prevent, slow or even reverse HIV epidemics among IDUs in both developed and developing countries.

FUTURE CHALLENGES

The major challenge is in scaling-up HIV prevention programs to a reach and penetration that matches the scale of the IDU population, often when this is itself growing explosively. Countries or regions where this has been achieved are few; barriers to effective scaling-up are many.

CASE STUDIES

THE LIFESAVING AND LIFEGIVING SOCIETY (LALS), KATHMANDU, NEPAL

The LALS program initially distributed sterile needles and syringes purchased privately, then expanded to carry out a range of functions from primary health care and counseling to syringe exchange and condom distribution. LALS' experience illustrates both the effectiveness of these programs for their clients and the need to expand and reach the majority of IDUs in a country or region.

HY VONG CAFÉ—CAFÉ HOPE, HO CHI MINH CITY, VIETNAM

Hy Vong ("Hope") Café in Ho Chi Minh City (HCMC) is Vietnam's first needle-exchange café, having grown from the first needle-exchange program in Vietnam. Besides the needle exchange, the cafe provides condoms, information, tea or coffee, facilities for showering or washing clothes and a small STD clinic.

RAPID PROGRAM—MÉDECINS SANS FRONTIÈRES, RUSSIA

This project provides training and support for HIV/AIDS prevention among IDUs in the Russian Federation (RF). It focuses on the use of the World Health Organization's *Rapid Assessment and Response Guide on IDU* and the *European Peer Support Manual*.

table of contents C H A **22** P T E R

5 2 1	I N T R O D U C T I O N
5 2 3	M A G N I T U D E O F T H E P R O B L E M
5 2 3	Adolescents
5 2 3	Hepatitis C (HCV)
5 2 4	S T R A T E G I E S F O R H I V P R E V E N T I O N A M O N G I D U S
5 2 4	Assessing for Intervention
5 2 4	Interventions to Reduce Individual Risk Behaviors
5 3 6	Public Health Interventions to Reduce the Risk Environment
5 4 0	L E S S O N S L E A R N E D A N D R E C O M M E N D A T I O N S
5 4 1	F U T U R E C H A L L E N G E S
5 4 1	C A S E S T U D I E S
5 4 1	The Lifesaving and Lifegiving Society (LALS), Kathmandu, Nepal
5 4 2	Hy Vong Café - Café Hope, Ho Chi Minh City, Vietnam
5 4 2	RAPID Program—Médecins sans Frontières, Russia
5 4 3	R E L E V A N T C H A P T E R S
5 4 3	R E F E R E N C E S
5 4 5	R E C O M M E N D E D R E A D I N G

Sharing contaminated injection equipment and drug preparations is a highly efficient means for transmitting HIV: As many as 3.3 million of the world's estimated 6 to 10 million IDUs are infected with HIV. Approximately 5 percent to 11 percent of AIDS cases globally are related to injection drug use (IDU).

Injection drug use has mirrored the explosive growth of the HIV epidemic. In 1992, 80 countries and territories reported IDU.

I N T R O D U C T I O N

Two years later, 134 countries and territories had documented IDU. Among them, 114 reported HIV infection associated with IDU, compared with only 52 in 1992. IDU is currently a major mode of HIV transmission in Eastern Europe and the Newly Independent States, Central Asia, East Asia, parts of South and Southeast Asia, North Africa, the Middle East, Southern Europe, North America and parts of South America. IDUs can also play a critical role in the spread of HIV into the general population through heterosexual transmission with sexual partners and through mother-to-child transmission (MTCT) from IDU mothers.

There is evidence from some developed countries—such as the United States—that IDU is decreasing and IDUs are becoming older. This can be attributed to increased drug purity (allowing for non-injected routes of administration) and increasing concern among drug users of the HIV risk. But evidence from many developing and transitional countries shows IDU there is increasing, and the average age of drug users is decreasing. In both developing and developed countries, IDU tends to be

more concentrated in marginalized and minority populations, particularly in urban areas. Nevertheless, it is seen across all social classes and non-urban settings. Prevention efforts must recognize the context (or risk environment) within which IDU occurs.

Despite the rapidly spreading dual epidemics of IDU and HIV, effective interventions can prevent, stop and even reverse epidemics among IDUs. This chapter describes the nature and extent of HIV/AIDS epidemics among IDUs, methods used for assessing such epidemics and associated risk behaviors and environments and interventions available for preventing such epidemics, with evidence of their effectiveness. The chapter discusses both public health interventions and those targeting individual behavior change; it examines the feasibility, application and limitations of each in resource-constrained settings. Finally, these pages offer guidance for policy makers on selecting priority interventions for those communities where IDU is a significant factor in the spread of HIV.

MAGNITUDE OF THE PROBLEM

HIV infection among IDUs can spread rapidly. Explosive epidemics have been witnessed in a wide range of cities in the past 20 years, starting with New York in 1979, followed by such cities as Edinburgh, Bangkok, Ho Chi Minh City, Odessa and, most recently, Moscow. In some cities, HIV prevalence has escalated from less than 5 percent to more than 40 percent in a 12-month period. At the same time, the epidemic has been prevented or controlled in many cities, such as Sydney and London. These cities tend to have four features in common:

- Comprehensive and multisectoral HIV prevention efforts, which were started early (often before HIV prevalence among IDUs reached five percent).
- Outreach services that provide broad coverage of interventions and establish trusting relationships between outreach workers and IDUs.
- Ready legal access to sterile injection equipment.
- Good access to drug dependence treatment services, particularly opioid agonist pharmacotherapy (such as methadone and buprenorphine).

ADOLESCENTS

In the past 15 years, we have learned much about IDU and associated HIV infection. But most studies focus on adult populations, with very limited information available on younger IDUs. Adolescence is a critical period; it is the age group with the highest HIV incidence rate and drug use is often begun then. Young IDUs tend to think and behave in ways that differ from their older counterparts and are treated differently within their communities. Specific interventions targeting adolescents should be considered (see Table 1).

HEPATITIS C (HCV)

The hepatitis C virus (HCV) has been an IDU infection far longer than has HIV—since the early 1970s at least, but probably longer. It is also more “infectious” than HIV: in general, smaller amounts of blood can transmit the virus from one IDU to another. HCV prevalence in most populations of IDUs around the world reached 50 percent or more well before the introduction of harm-reduction meas-

Table 1

DIFFERENCES BETWEEN YOUNG AND OLDER DRUG INJECTORS

Young injectors are more likely than older injectors to:

- Be less knowledgeable about HIV/AIDS and drug use.
- Be less inclined to identify themselves as being a drug user/drug injector.
- Deny they are at risk of HIV through both drug injection and sexual intercourse.
- Initiate their injecting through casual experimentation with wider drug use.
- Be intermittent (rather than regular) drug users and use (experiment with) a broader range of drugs.
- Be novices, with limited experience of injecting and contact with other injectors.
- Have a less developed network of drug-using peers.
- Inject in risky environments.
- Be females (although in most communities adolescent boys still outnumber adolescent girls).
- Have a less significant drug dependence and to be less damaged from their drug use.
- Have more frequent sex and more sexual partners.
- Have unclear sexual identities and more likely experiment with different sexual practices, including same-sex relationships.
- Be less aware of where and how to access prevention and treatment services, and more reluctant to use such services.
- Have less access to existing services, including restrictions because of their age.
- Be uninfected with HIV and hepatitis B and C.

ures for HIV. While there is evidence of HCV transmission through shared injection equipment other than needles and syringes (such as water, filters, cookers, spoons, etc.), shared reuse of contaminated needles and syringes is responsible for the majority of HCV transmissions between IDUs (and in other settings such as immunization). Bringing HCV epidemics under control in high HIV prevalence areas is proving difficult; these situations require far greater levels and consistency of safer behavior than do low-prevalence situations. But there is mounting evidence that programs for HIV prevention are slowly decreasing HCV incidence among the same populations.¹

STRATEGIES FOR HIV PREVENTION AMONG IDUS

The same interventions can prevent HIV transmission at both individual and population levels. This part of the chapter describes them in three sections:

- Assessing for intervention
- Interventions to reduce individual risk behaviors
- Public health interventions to reduce the HIV risk environment

ASSESSING FOR INTERVENTION

IDU patterns and associated HIV-risk behaviors are dynamic, varying between countries, populations and time. Such patterns are determined by a broad range of individual (knowledge, attitudes and behavior) and contextual (social, economic, cultural and political) factors that together establish the conditions for HIV spread. Because the mix varies among different populations and areas, prevention efforts must be tailored and responsive to each specific setting. The local situation must be understood and considered to ensure the most cost-effective, culturally acceptable and feasible interventions. The rapid spread of HIV associated with IDU demands assessment methods that are affordable, rapid, will result in immediate action, are easy to use and can be used to monitor further developments.

Rapid assessment and response (RAR) methods have been used widely in both developed and developing countries to plan prevention strategies among drug-using populations. These methods tend to have a number of features in common, including quick affordable assessment techniques, multiple indications and data sources and levels—individual, situational, social, etc. They involve the community in the assessment process, and complement other social science and epidemiological methods. The World Health Organization's *Rapid Assessment and Response Guide on IDU* is an example of a methodology that has been developed specifically to link situation assessment with development and implementation of appropriate and timely interventions.²

Despite their usefulness, rapid assessment methods have limitations. Developing a thorough understanding of the specific drug-using behaviors and their meanings or mapping drug-user networks may demand conventional social science research methods with a timeframe much longer than a few months. Likewise, large-scale surveys may be necessary to gather quantitative data for advocacy purposes, plan allocation of resources, design specific interventions, evaluate the effectiveness of strategies and monitor trends.

The use of behavioral surveillance surveys (BSS) also recognizes the importance of monitoring and tracking HIV risk behaviors as well as actual cases and spread of HIV/AIDS. BSS can act as an early warning system, predict the likelihood of HIV spread, gather behavioral information for program design, evaluate program effectiveness and help understand the role of changing behaviors in influencing HIV prevalence. Family Health International has produced a set of BSS guidelines that include key indicators for monitoring trends in HIV risk behaviors among IDUs and between different population groups.³

INTERVENTIONS TO REDUCE INDIVIDUAL RISK BEHAVIORS

Different drug-using behaviors pose different risks for HIV transmission. At an individual level, interventions aim to change behavior to reduce risks, with the ultimate goal of risk elimination. IDUs are in various stages of readiness to change their drug-using behaviors. But given the appropriate information and opportunity, they are likely to change both drug-using and sexual behaviors to protect themselves and their sexual and drug-using partners. Specific interventions for reducing HIV risk are:

- HIV information, education and communication (IEC) programs
- Risk reduction counseling
- Voluntary counseling and HIV testing (VCT)
- Disinfection programs
- Needle-syringe programs
- Agonist pharmacotherapy programs
- HIV treatment and care

Information, education and communication (IEC)

Objectives

HIV IEC programs should provide accurate information that will increase the IDUs' knowledge and modify their attitudes—which in turn will help them change their behaviors to reduce risks.

Description

IDUs obtain information on drug use and HIV/AIDS from many sources, including general awareness (mass media) campaigns, information campaigns specifically for IDUs, peer and drug-user networks, health professionals and outreach workers. Information may be provided in various forms, including posters, pamphlets, newsletters, videos and radio and television broadcasts. IEC materials may also target families and friends of IDUs and the general community. (See Chapter 12 for in-depth discussion of social marketing for HIV/AIDS prevention.)

Content of materials

The same principles for developing IEC materials for other populations are relevant to IDUs. Their involvement in this process is critical. IEC should cover the following areas where appropriate:

- Indiscriminate sharing of injection equipment
- Reducing the number of sharing partners and sharing occasions
- Risks of drug preparation techniques
- Risks of drug distribution techniques (front- or back-loading, etc.)
- Risks of sharing paraphernalia (filters, cookers, water)
- Needle and syringe cleaning/sterilization techniques
- Accessing sterile needles and syringes
- Safe disposal of contaminated injection equipment
- Alternatives to drug injection
- Available drug treatment services
- Overdose prevention and management

- Hepatitis B and C prevention
- Abscess and vein care
- Condom use and safer sex
- Contact details for health, welfare and other services

Models of delivery

Mass media campaigns can raise general awareness of HIV/AIDS among IDUs. But specific reference to them in such campaigns may increase stigmatization and public disapproval, and cannot usually provide the necessary (and often sensitive) messages required for IDUs. Furthermore, mass media campaigns tend to be very expensive and may not reach the most vulnerable groups.

Targeted information campaigns for IDUs, with explicit information on risk reduction strategies, are effective in reaching the most vulnerable IDUs and providing them with very practical information, including how to access treatment services. Local situation assessment is necessary to identify attitudes, knowledge and specific risk behaviors, target specific groups, determine the context of IDU, communication channels and local resources. Appropriate materials and messages can then be developed in collaboration with IDUs themselves.

Drug-user networks and peers are very good—and cost-effective—mechanisms for disseminating HIV-risk reduction information.

IDUs often come in contact with health care services. Workers should be trained in risk-reduction strategies, and able to provide accurate and nonjudgmental advice.

BEYOND APPEARANCES

A monthly newsletter on treatment and other issues for current and ex-drug users

Beyond Appearances, a simply formatted monthly newsletter, was launched in Delhi, India, in 1997, with the support of SHARAN, a non-governmental organization working with drug users and urban poor communities. The newsletter provides news and information to drug users on such issues as HIV and hepatitis risk-reduction strategies, maintaining health, drug dependence treatment, drug policy and human rights. The newsletter was developed based on experience in other countries, such as Australia, where drug-user organizations are very active in producing IEC materials.

Feasibility in resource-constrained settings

The development and dissemination of IEC materials on IDU and HIV is widespread; it exists in some form in most countries with significant levels of IDU. National policies or legislation may make it impossible for the government—and in some cases the nongovernmental sector—to produce explicit materials, as this may be construed as encouraging and abetting illegal behavior. But even in restrictive settings, informal materials, communication methods and networks can disseminate information and reach highly marginalized populations. Very simple and easily reproducible materials are likely to be just as effective as more expensive ones.

Effectiveness

Knowledge of HIV risks is enough to influence IDUs' behaviors, including: reducing the number of sharing partners and sharing occasions, selectively sharing partners and equipment, safely disposing of contaminated equipment, cleaning injection equipment, changing drug preparation and distribution methods, ensuring access to sterile equipment when needed and accessing treatment and other health services. Inaccurate information can result in useless prevention strategies.⁴

Benefits, risks and limitations

The development and provision of IEC materials is feasible and affordable in most resource-constrained settings. But targeting IDUs presents special problems: Although this group needs explicit information, such information may be offensive to the general population, resulting in community opposition. There may also be difficulties in presenting clear messages to IDUs because of high levels of illiteracy, language barriers (including the use of street-language) and diversity of drug-using practices.

Risk reduction counseling

Objectives

Risk reduction counseling aims to help individuals clarify their feelings and thinking, and better understand their behaviors and environment, so that they will protect themselves against the risks of IDU. Counseling also provides important psychosocial support to HIV-infected IDUs and helps them protect their health and reduce transmission to sexual and drug-using partners and children (the last, for pregnant and breastfeeding mothers). (See Chapters 18 and 19 for more information on reducing the risk of HIV transmission from mother to child.)

Description

Risk reduction counseling often includes:

- Accurate HIV/AIDS and drug use information
- Personal HIV risk assessment (making the individual aware of his/her specific behaviors and their associated risks)

- Behavioral skills training (how to use condoms and sterilize injection equipment, etc.)
- Problem solving (accessing help, dealing with crises and relationships, selecting appropriate prevention or treatment options, etc.)
- Stress management (to reduce stress or better cope with stressful situations)

Models of delivery

Counseling should be tailored to the needs of the individual client and sensitive to the setting within which he or she lives. Whatever the setting, non-directive and non-coercive counseling is more likely to be accepted. Approaches that encourage active decision making by IDUs themselves will more likely result in sustained behavior change.

Characteristics of the counselor strongly influence the effectiveness of counseling. Many resource-constrained settings cannot afford specialist HIV/AIDS or drug counselors; counseling often forms part of the general caseload of generalist health care providers or personnel providing a range of services through HIV/AIDS or drug treatment programs. Peer counselors—including current and former IDUs and members of drug-using networks—can effectively deliver relevant, acceptable and affordable counseling to difficult-to-reach IDUs. Training in basic risk reduction counseling should be given all health and other workers providing services to IDUs. Counselors should understand local drug use and HIV risk behaviors, know local resources and referral practices, be nonjudgmental and respect the confidentiality and other rights of IDUs, be accepted and trusted by the client population and recognize their own limitations.

The setting for counseling will also influence the effectiveness, acceptability and utilization of such services. Marginalization of IDUs, their fear of arrest or harassment and their inability to afford services may make it very difficult to access these individuals. Outreach approaches delivering counseling—often in association with other services such as the provision of injection equipment, condoms and primary health care—in settings where IDUs live and congregate are more effective than services offered through formal and traditional center-based programs.

Feasibility in resource-constrained settings

Many communities and services cannot afford dedicated HIV/AIDS and drug-use counselors. Nevertheless, the very nature of the encounter between health care workers and IDUs requires some degree of risk reduction counseling. Community health care workers and peer educators have been trained in risk reduction counseling—and have incorporated these skills into their daily work—in many resource-constrained countries, including Brazil, India, Kazakhstan, Malaysia, Myanmar, Nepal, Russia and Ukraine.

Effectiveness

IDUs have been shown to change both their drug- and sex-related HIV risk behaviors after participation in outreach-based interventions. They have reduced drug injection frequency and sharing of needles, syringes and other injection equipment and increased needle and syringe disinfection and condom use. They have also increased contact with and entry into drug treatment.⁵ Peer-outreach programs and social network interventions have proven cost-effective in reducing drug-related HIV risk practices.^{6,7}

Benefits, risks and limitations

Risk reduction counseling provides an opportunity to respond to the IDU's needs in a holistic and integrated fashion. Counseling can address factors influencing the IDU's behaviors and living circumstances. But the counselor must be trained and skilled in counseling approaches and familiar with the existing evidence for different strategies' effectiveness. There can be considerable harm if counselors provide IDUs with inaccurate information and inappropriate advice.

Counselors' personal beliefs and experiences may compromise their effectiveness. Moralizing over illegal drug use and urging abstinence from drug use as the only option are common problems. Clear guidelines should be established to ensure confidentiality and respect of IDUs' basic human rights. Counselors must be aware of their own rights and the law regarding advising on potentially illegal behaviors and associating with criminalized populations. In some communities, special attention must be given to securing the safety of health care workers, particularly those providing outreach services in drug-use environments.

Voluntary counseling and HIV testing (VCT)

Objectives

Knowledge of one's own HIV status allows, and can promote, modification of behaviors to prevent HIV transmission. Such knowledge can result in lifestyle modifications to improve general health, including seeking treatment for opportunistic infections. It also allows forward planning for families and partners and provides opportunities for prevention of vertical transmission from infected mother to child. (Chapter 23 provides a full range of information on voluntary counseling and testing strategies.)

Absolute confidentiality is critical in VCT. IDUs are already subject to stigmatization and discrimination; any breaches of confidentiality in HIV testing can have dire consequences—sometimes even leading to imprisonment and death.

Description

Professionals or trained and supported peers should be responsible for counseling. The process must not be simply a matter of information provision, but a much more active discussion—one that clarifies the meaning of a particular test result for a particular individual. Counseling for testing is not simply a matter of giving information, but a much more active process in which the individual considers possible

courses of action open to him or her. Very often, issues only become clear to clients with time, so post-test counseling must be available on an ongoing basis. Counseling after a negative test result is as important, in some ways, as counseling after a positive test result. Professionals or trained and supported peers should provide counseling.

Models of delivery

VCT is best integrated into existing programs for IDUs—including syringe programs, primary health care and drug treatment, if possible. With proper safeguards to ensure confidentiality, pre- and post-test counseling can be given in conjunction with other services; most staff—including peer and outreach needleworkers—can be trained to provide the VCT service.

Feasibility in resource-constrained settings

This integration requires training and ongoing support and debriefing of staff. It can be relatively expensive, but it is particularly important for programs in which clients otherwise would have no access to such testing.

Effectiveness

There is little evidence that VCT has a direct impact on decreasing HIV transmission. But there is growing evidence that infected IDUs who know their HIV status often act responsibly to reduce transmission and protect drug-using peers and sexual partners. IDUs who test negative, however, do not appear to change their behavior. In both New York City and Santos (Brazil), HIV-positive IDUs reported significant decreases in distributive sharing of injection equipment (passing on equipment to another IDU after using it).⁸ In New York City, HIV-negative IDUs were reluctant to change their sexual behaviors, whereas HIV-positive IDUs showed very significant reductions in sexual risk practices, and were protective of their sexual partners.⁹ These findings suggest that interventions should be targeted at HIV-positive IDUs, who should be mobilized to promote sexual risk reduction among their HIV-negative injecting peers. Testing did lead to one benefit for both HIV-positive and -negative IDUs: participation in primary health care and drug treatment.

Disinfection programs

Objectives

Anything that decreases the amount of infectious virus in used needles and syringes will lessen the probability of virus transmission. Disinfection programs aim to reduce the infectiousness of re-used injection equipment—particularly needles and syringes—for blood-borne viruses, especially HIV. This can be achieved by cleaning the needle and syringe to remove contaminated blood, disinfecting the needle and syringe with chemical disinfectants or sterilizing the needle and syringe with heat.

Description

While the only thing that guarantees sterilization is sufficient heat for a sufficient length of time, most disinfection programs promote the use of bleach. Many, if not most, programs in the United States rely on household bleach (sodium hypochlorite solutions) to disinfect needles and syringes before reuse. Bleach is effective at rapidly destroying most blood-borne viruses, including HIV. But bleach is not the only active chemical disinfectant available, and in many parts of the world, it is not as widely available as it is in most industrialized countries. Other chemicals that may provide some measure of protection include iodine, hydrogen peroxide, detergents and even (to some extent) strong alcohol.

Models of delivery

Bleach, and instruction in its use, is usually provided either by outreach workers for whom this is the major component of their job (“bleach and teach”), or as an ancillary approach by other programs, including needle-syringe and drug treatment programs or primary health care facilities. Bleach is provided either as a solution (often in small disposable bottles) or as a powder to be made into a solution on site before use. Disinfectants can be distributed by health care workers in a wide range of settings.

Bleach may be a firstline strategy in countries or other settings (such as prisons) where needle-syringe programs are not feasible. In other settings, bleach provides a backup or second-line alternative where sterile equipment is not available.

Feasibility in resource-constrained settings

Bleach or other chemical disinfectants are usually reasonably cheap and eminently feasible in resource-constrained settings. Their distribution also provides a key topic around which HIV prevention education can be pursued, and gives workers and clients an effective strategy if sterile equipment is unavailable. But chemical disinfectants are less effective than needle and syringe distribution.

Effectiveness

The evidence for effectiveness of disinfection programs in the prevention of HIV among IDUs is mixed, with some evaluations finding a protective effect and others not.¹⁰ In general, effectiveness relates more to the circumstances in which the bleach is distributed and used—and to how it is used—than to the programs themselves (see below). Messages to IDUs have often been confusing, proposing differing types of decontaminants and concentrations.¹¹ Disinfection programs are certainly not as effective as needle-syringe programs, and should not be seen as a satisfactory substitute. They are better viewed as a less effective alternative where needle-syringe programs are not possible, or as a second-line strategy to support needle-syringe programs.

Benefits, risks and limitations

While full-strength bleach or other chemical disinfectants efficiently kill HIV and most other blood-borne viruses in the laboratory, for a variety of reasons their effectiveness is diminished in the field. To disinfect properly, bleach must be strong enough and in contact with the virus long enough—at least 30 seconds in most situations. In the field, this requirement often is not understood or cannot be met because of situational pressures—the pressure to inject quickly to escape observation, for example. In addition, clotted blood protects viruses against the action

of chemical disinfectants. Rinsing used syringes immediately after use increases the effectiveness of disinfection programs by removing and diluting much of the blood before it can clot.

In some communities, IDUs are suspicious of bleach and other disinfectant agents and are reluctant to use them for fear of potential toxic effects. Education and counseling should address these fears and provide guidance on safe use of disinfectants.

ADEQUATE COVERAGE IS CRUCIAL FOR PROGRAM SUCCESS

Even evidence-based, culturally appropriate and well-accepted programs will have little impact on the epidemic if they are not implemented on a scale large enough to reach a critical number of IDUs. The example of LALS in Kathmandu demonstrates that a small needle-syringe program (reaching only 1,000 IDUs) may help slow the epidemic, but can do little to prevent an explosive epidemic once drug injection and HIV prevalence rises.

In the Russian Federation, HIV cases are rising exponentially, predominantly among IDUs. With an estimated 1.5 to 3.0 million IDUs in the country, the existing 35 needle-syringe programs reach only a small proportion of those at risk. As a matter of urgency, UNAIDS co-sponsors and other partners are planning to scale up needle-syringe programs in an effort to cover 60 percent of the IDU population throughout the country.

Needle-syringe programs

Objectives

Needle-syringe programs have several objectives, whose relative importance can be seen hierarchically:

- The primary roles of needle-syringe programs are to distribute sterile injection equipment to IDUs and remove used and potentially contaminated equipment from circulation, thereby removing the possibility of further intentional or accidental use.
- These roles relate primarily to needles and syringes, but can include other equipment—such as cookers/spoons, alcohol swabs and sterile water—and other materials such as condoms.
- Programs can also provide an opportunity to disseminate IEC materials about safer injection as well as information on sexual transmission.
- Needle-syringe programs can also become contact points for counseling, primary health care, referral of IDUs to other services and engagement with drug treatment services.

The primary tasks of distribution and disposal of injection equipment may be separate or connected activities: the commonest form of connection is exchange, where sterile equipment is provided in return for used equipment. But the need for exchange depends on circumstances, and other models have been developed.

These subsidiary roles should not interfere with the primary task of needle-syringe programs: to ensure that as many injections as possible take place with sterile injection equipment, thus breaking the chain of transmission of HIV and other blood-borne viruses.

An overarching objective of needle-syringe programs is to achieve sufficient reach and coverage to significantly affect epidemics or potential epidemics of blood-borne viruses among the IDU populations, and from them to their sexual partners and children. Such programs must therefore try to reach populations not otherwise in contact with any services, and to operate on a large enough scale to ensure that a high proportion of injections are carried out with sterile equipment. This scale depends primarily on the prevalence

of the blood-borne viruses—if the proportion of IDUs infected with HIV is high, coverage must be high; if prevalence is low, less coverage can still be effective. The goal, however, should always be to ensure that every injection is carried out with sterile equipment.

Description

The fundamental activities of needle-syringe programs revolve around contacting different groups and providing appropriate and accessible means for distribution and disposal of injection equipment. The actual methods by which these tasks are carried out will depend largely on the context within which the needle-syringe program operates (drug use and behaviors of drug users, cultural, legal and political situations and availability of resources). As a result, location, style of service delivery, hours of operation, staffing and other characteristics of the program vary widely around the world and even within a single country.

Models of delivery

Depending on context, very different models of service delivery have developed in various settings:

Needle-syringe services must be located close to where the drug users live or buy and use the drugs. IDUs tend to inject near their purchase site. The less deviation from their normal lives involved in collecting or disposing of equipment, the more likely IDUs are to use the needle-syringe service. Such access can be achieved by physically locating the program in these areas, or by outreach on foot or in vehicles.

Needles and syringes can be provided to IDUs in a range of ways. Sale at pharmacies or other facilities is common in many countries, and is sometimes promoted as an HIV prevention strategy. But in many situations, there are barriers that make it difficult for IDUs to access needles and syringes. They may be too expensive (even where unit costs seem very low, most IDUs inject at least daily and very regularly, resulting in rapidly mounting costs) or the IDUs may be subject to discrimination or harassment. Needle-syringe programs—whether exchange or distribution and disposal—are still necessary. The programs are also needed to provide sterile equipment to IDUs who, for

these or other reasons, cannot or will not access pharmacies. Vending machines also supply needles and syringes in a variety of settings (including prisons), providing anonymous access at all hours.

Needle-syringe programs may be fixed site—delivered from a stationary location such as a shop front, office or other health care or drug treatment facility—or they may be outreach or a mixture of the two. Outreach may be carried out on foot, with workers walking through scenes of drug dealing and/or using and making discreet exchange on the street or in vehicles—most commonly a van. This latter can work as a fixed site, providing services from the same locations regularly, or can move around to reach different groups of IDUs. Where laws permit, some needle exchange or distribution is done by prearranged delivery (by telephone order) by car or van, or even carried out through the mail.

Given the need to distribute or exchange as high a proportion of equipment as possible, different strategies have developed. In many circumstances, where needle-syringe programs are legal, exchanges are restricted by policy or law to one-for-one, where a single sterile needle and syringe can be provided for each used one returned. If these restrictions do not apply, and if the program can supply as much sterile equipment as is required, secondary exchange may become a large and actively promoted part of the program: Clients collect sterile equipment not only for themselves but also for distribution to other IDUs—in effect, working as unpaid peer outreach workers. The rationale for this style of program delivery is that it increases efficiency with less pressure on program staff and increases reach to populations who would not otherwise attend the needle-syringe program. Such services must be allied with greater efforts at disposal of used equipment (see below). Outreach needle and

syringe services can be provided by professional or peer staff. Both require intensive training and continuing support, as this work demands skill and can be extremely stressful.

To control epidemics of blood-borne viruses, sharing of injection equipment must be minimized or abolished. Prisons, juvenile correctional facilities and drug rehabilitation centers play special and often central roles in epidemics, but they are among the most difficult settings for needle-syringe programs, since sanctions against IDU in these institutions are so strong that provision of needles and syringes is usually impossible. Nevertheless, such programs do exist in some countries and special consideration must be given to this issue.

Feasibility in resource-constrained settings

Establishing a needle-syringe program can be difficult. While there have been demonstrations of their cost-effectiveness in preventing blood-borne virus transmission and eventual disease—especially AIDS—the benefits may be ignored, and only the cost considered. Where access to sterile equipment is difficult even in the orthodox medical setting, justification of expenditure on IDUs (usually among the most stigmatized and marginalized people in any community) can be difficult. The role of HIV epidemics among IDUs in promoting more general epidemics through sexual transmission to non-IDUs should be emphasized, as should any locally derived measures of cost-effectiveness.

In fact, if substantial populations of IDUs are at risk, needle-syringe programs are among the cheapest and most cost-effective of all HIV interventions. This is certainly the case when compared with drug treatment programs—and exchange is far more effective and rapid. Local production of needles and syringes in

most parts of the world means the equipment can be obtained relatively cheaply. Staff costs tend to be low. Proper disposal of collected used equipment (see below) is often one of the most significant costs.

In “mature” or “explosive” HIV epidemics among IDUs—when prevalence is already high or rapidly increasing—scaling-up programs to reach adequate coverage may appear expensive. But even in these situations, needle-syringe programs remain the most cost-effective HIV prevention strategy available.

These programs have been established not only in developed countries, but in a number of developing and transitional states as well, including Bangladesh, Belarus, Brazil, Bulgaria, India, Kazakhstan, Latvia, Nepal, the Philippines, Russian Federation, Thailand (including among remote hill-tribes communities), Ukraine and Vietnam.

The Open Society Institute has produced a detailed guide to establishing and operating needle-syringe programs, with particular focus on Central and Eastern Europe and the Newly Independent States.¹²

Disposal of used injection equipment

Collection and disposal of used injection equipment is very important. First, it eliminates the possibility for potentially infectious equipment being reused; and second, it removes a potential source of accidental transmission to non-IDUs, especially children. But such collection raises the problem of disposal, adding to the present medical-waste problem in most developing countries. Using landfill is dangerous and environmentally unsound; low-temperature incineration—all that is available in most settings—is similarly environmentally disastrous. High-temperature incineration, the method of choice, is usually unavailable or prohibitively expensive.

Effectiveness

Since the establishment of needle-syringe programs in the early 1980s, a number of studies in many parts of the world have attempted to measure these programs’ effectiveness in preventing HIV transmission and possible promotion of drug use. Several US government-funded reviews of this evidence have unanimously concluded that such programs are effective,

and do not lead to increases in the numbers of people injecting drugs.¹³⁻¹⁶ Furthermore, there is increasing evidence that such programs can be established in resource-constrained settings and very difficult environments.

Benefits, risks and limitations

Needle-syringe programs—whatever model they utilize—are the most effective and cost-effective method yet devised for preventing HIV transmission among IDUs, and from them to their sexual partners and children.

Such programs operate best when delivered in the context of other services, especially primary health care and drug treatment. But the absence or underdevelopment of such services should not preclude needle-syringe programs. This would simply allow further HIV transmission and increase future burdens on the health care and welfare systems. Providing sterile equipment to IDUs is extremely contentious in many countries. Here, other programs—especially outreach and drop-in centers providing information and education—should be implemented rapidly, while advocacy for needle-syringe programs continues. Community education—social marketing for “harm reduction”—is necessary at every stage of program development and implementation to achieve community understanding and support (or at least the absence of opposition). Promotion of the program’s role in removing potentially infectious used equipment from the environment, thereby lowering risks of accidental exposure to the general community, could increase support.

Some countries prohibit giving injection equipment to IDUs. HIV prevention programs must carefully assess the implications of such legislation, regulations and local policing to determine what services can be provided and their staff’s potential liability. Advocacy for changing restrictive legislation and attitudes of law enforcement professionals is often required before programs can be established.

Agonist pharmacotherapy programs

Objectives

Agonist pharmacotherapy treatment (drug substitution) usually has two aims: treatment of drug dependence and reduction of health risks and negative health consequences (such as HIV infection) by encouraging a transition from injection to non-injection drug use (under supervised prescribed treatment). Engagement and retention in drug dependence treatment also provides opportunities for risk counseling and advice, as well as management of other health and social problems.

Description

Agonist pharmacotherapy involves treating drug-dependent individuals with a drug that has a similar action to the drug they are dependent on, thereby preventing a withdrawal syndrome and craving. Most substitution programs rely on replacing an injected illicit drug (such as street heroin) with an oral legal drug (such as methadone). This is done under medical supervision, reducing the risks associated with injection—such as transmission of HIV, overdose and vein damage.

Oral methadone is the most widely used and rigorously evaluated form of treatment for opioid dependence. Although well established in certain areas of the United States for over two decades, it was not until the late 1980s that there was a dramatic expansion of methadone maintenance programs in other regions, such as Australia¹⁷ and Europe. All European Union countries now have such programs.¹⁸ Evidence of the effectiveness of methadone maintenance programs in preventing HIV infection and reducing risk behaviors has provided the rationale for such programs in many countries.

Methadone is not the only drug used in opioid agonist pharmacotherapy. Others include buprenorphine, levo-alpha-acetylmethadol (LAAM), morphine, codeine, diamorphine (heroin), pentazocine, ethyl morphine and tincture of opium. While most are given orally or sublingually, the substitute drug is sometimes given by injection, as in Switzerland’s heroin prescription program. Services using injection drugs aim to treat severely dependent and health-damaged IDUs who have failed on oral substitution programs.

Agonist pharmacotherapy is not widespread for other classes of drug dependence, such as amphetamine-type stimulants and cocaine.

Models of delivery

The United States' methadone programs were initially limited to dedicated specialist clinics often attached to major hospitals, with strict guidelines and regulations covering client eligibility, dosing regimes, monitoring of drug use (such as through urine testing), compulsory counseling and behavior codes. Typically, clients would be required to attend clinics daily for their prescribed dose of methadone under direct supervision, with limited choice of dose or other management.

Expansion of these programs and research on the effectiveness of different service delivery models led to considerable diversification in programs offered. Low-threshold programs that provide easier and quicker access to treatment slots have been set up. There has also been a move toward community-based and less expensive programs, involving methadone prescribing by general practitioners and other medical practitioners, dispensing through pharmacies and community health facilities, mobile dispensing vans and client-centered services with dosing schedules and other treatment negotiated between client and prescriber. Community-based models of opioid agonist pharmacotherapy have made such programs possible in resource-constrained communities, including urban slums in India and rural communities in Thailand.

Feasibility in resource-constrained settings

Despite the widespread expansion of agonist pharmacotherapy programs in many developed countries, it has been argued that such treatment approaches are not appropriate, feasible or affordable for developing countries. But a range of projects have been established in Asia, Latin America, Eastern Europe and the Newly Independent States—although the programs are often restricted to small-scale or pilot plans. For example, sublingual buprenorphine maintenance programs operate in India. Methadone maintenance programs have been introduced in Nepal, Vietnam, Thailand and a wide range of Central and Eastern European countries such as Latvia, Lithuania, Poland, Slovenia, Slovak Republic, Hungary, Bulgaria and the Former Yugoslav Republic of Macedonia. Hong Kong has a well-established and wide-scale low-threshold methadone maintenance program.

Many Asian and Central and Eastern European programs developed in response to dramatic increases in IDU and associated HIV-risk practices. Abstinence-based drug treatment programs were nonexistent, unaffordable or ineffective in preventing relapses to HIV-risk practices. Some substitution programs evolved from within the communities where IDUs live in response to community-identified needs: They were designed, implemented and managed by the communities themselves, often without government support or formal approval. These programs differ markedly from those in developed countries. Principles of community involvement and integration with primary health care services have made these programs feasible, acceptable and affordable—even in slum communities and remote tribal villages.

Effectiveness

Most research on the effectiveness of agonist pharmacotherapy has been limited to methadone treatment in developed countries; specific research in developing and transitional countries is needed to examine the cost-effectiveness of such programs. Methadone maintenance programs are associated with lower rates of HIV prevalence¹⁹ and risk reductions related to injec-

tion and sharing behaviors²⁰ for individuals during treatment. Other benefits include retention in treatment, reduction in criminal activity and improved social functioning.^{21,22} Comparative studies evaluating the effectiveness of different programs in reducing HIV risk behaviors have shown that more effective programs are characterized by: higher doses (above 50 to 60 mg daily), long-term maintenance as compared with detoxification to abstinence, better ancillary and supportive services and better staff-client relationships.^{17,23-25}

Benefits, risks and limitations

There is clear evidence that agonist pharmacotherapy can prevent HIV transmission among IDUs in a range of settings; as a treatment, it tends to be well accepted by IDUs. Many individuals have strong feelings about such programs, some viewing them as replacing one “addictive” drug with another and possibly prolonging the individual’s drug dependence. But if the primary goal is HIV-risk reduction and preventing relapse to IDU, agonist pharmacotherapy programs are more effective than abstinence-based programs.²⁰

A major limiting factor has been the relatively high cost of some substitute drugs, requiring funding assistance from international development agencies or client fees. Increasingly, generic drugs such as methadone and buprenorphine are being produced locally, which reduces costs and makes the drugs more affordable in resource-constrained communities.

Another major obstacle for many countries is the legal status of drugs used in substitution programs. For various reasons, drugs such as methadone are either unavailable or illegal in certain countries, or can be prescribed only for very specific purposes—not including the treatment of drug dependence.

HIV treatment and care

The rate of progression to AIDS for HIV-infected IDUs is the same as for other groups, but this population has special needs: There is a higher death rate among HIV-infected IDUs from causes unrelated to HIV infection, including pneumonia, liver disease (associated with HIV and hepatitis C and/or B co-infection), overdose and suicide. Female IDUs face other issues, especially around pregnancy, childbirth and breastfeeding. Weight loss and physical wasting can be worse for IDUs living with HIV because of malnutrition and poverty, in addition to the effects of some street drugs. Affected IDUs are at greater risk for infections related to injection drug use, including abscesses, septicemia, endocarditis and tuberculosis (TB). Co-infection with hepatitis C and/or B is extremely common.

IDUs living with HIV are often unable or unwilling to access HIV/AIDS treatments or general medical care because of inappropriately designed services, stigmatization, negative attitudes of medical and healthcare staff and poor healthcare experiences. Pain management is a problem for all IDUs and people living with HIV/AIDS (PLHA), but it is worse for those who fall into both categories: They usually have a very high tolerance for pain-control drugs.

Objectives

A number of objectives should be considered in HIV/AIDS management, including:

- Provision of quality care and treatment
- Integration of AIDS care and treatment services into general provision of health care, with HIV prevention programs
- Development of a continuum of care approach

Description

Medical care—both primary health care and especially support and treatment for HIV-related illness, can be carried out anywhere—in the home, the street, primary healthcare facilities, STI and other clinics, drug treatment centers and hospitals. In most situations, IDUs—and often their families—have poor or

little access to health care; comprehensive treatment for AIDS-related conditions or the HIV infection itself may not be available or affordable. Alternative strategies for providing care and support are needed to reach these often extremely marginalized people. At the same time, advocacy is required to improve acceptance of IDUs' health care needs by mainstream services and authorities.

Models of delivery

The most successful models for delivery of HIV services for IDUs are comprehensive: integrating this special care into harm reduction, primary care and access to drug treatment or detoxification and treatment. The optimum program integrates all these with good referral links to other health and welfare services, working from outreach in the home or streets through to hospital and hospice. Few such programs exist, especially in resource-constrained settings—where such an approach is unachievable even for much of the general population.

The most common and least expensive model provides primary health care by nurses or trained peer workers through outreach or drop-in services. Wound and abscess care, as well as minor opportunistic infections, TB, diarrhea and other HIV-related conditions can be treated in this way. Home-based supportive and medical care is a next step, involving families in the care of their HIV-infected members.

Feasibility in resource-constrained settings

Much of the current standard of medical treatment for HIV infection (highly active antiretroviral therapy [HAART]) and for the opportunistic infections and cancers of AIDS is far too expensive for resource-constrained settings. But a wide range of care and supportive medical strategies—such as treatment of skin infections and bacterial pneumonias (using cheap and available broad spectrum antibiotics), rehydration, TB

treatment and vaccination—can be delivered in resource-constrained settings. Infrastructure need not be complex for such service delivery.

Similarly, social support—PLHA networking or community mobilization for home-based care, for example—is fundamental in resource-constrained situations. This carries through to support for the dying—as important as care of the living—whether in community hospices or home.

PUBLIC HEALTH INTERVENTIONS TO REDUCE THE RISK ENVIRONMENT

Although prevention strategies outlined in the preceding sections may help reduce individual HIV risks, no single strategy can prevent or halt HIV epidemics among drug-using populations. Actions that, combined, can help include:

- Starting prevention interventions early in the epidemic (before HIV prevalence among IDUs exceeds five percent)
- Implementing multiple interventions and intervention strategies (legal, public health, social development, etc.) at multiple levels (individual, community, national, international)
- Establishing interventions in multiple settings (streets, drug-using venues, drug treatment services, health agencies, prisons, etc.)
- Targeting multiple risk behaviors (drug use, equipment and drug sharing, sexual behaviors)
- Providing access to multiple means for behavior change (risk reduction information, condoms, sterile injection equipment, HIV testing and counseling, drug treatment)
- Reducing obstacles to prevention and treatment services (making them affordable, convenient, user-friendly, confidential)
- Recognizing that populations at risk are in various stages of readiness to engage in an intervention; repeated opportunities to begin interventions are necessary²⁶

A public health response should bring all these elements together and support their implementation by:

- Promoting “healthy public” policy and legislation
- Creating a safe and supportive environment for IDUs to adopt healthier behaviors

- Mobilizing IDUs and their communities to take action to reduce HIV risks
- Making health and social services more responsive to the needs of IDUs
- Ensuring that community members have the necessary knowledge, skills and capacity to respond to the problem

Legislation and health policy

Objectives

Local, national and international policies, legislation and international treaties regarding illicit drug use and HIV/AIDS can significantly influence risk practices and prevention efforts. Where possible, policies and legislation should aid prevention efforts, enable IDUs to change their behaviors and promote an environment that minimizes HIV risks.

Description

A wide range of policies, legislation and international treaties influences IDU and HIV risk patterns in communities. Such policies and legislation are not limited to the health, HIV/AIDS or drug control sectors, but include such diverse areas as immigration, education, prisons, youth, housing and welfare. Careful analysis of different policies, legislation and regulations is needed to understand how they might affect behaviors and increase HIV vulnerability.

Many countries have policies and laws that present obstacles to effective prevention strategies, such as needle-syringe programs, outreach education, agonist pharmacotherapy and voluntary and confidential testing and counseling. Legislation and regulations that can hamper prevention efforts include: restrictive procedures, compulsory drug and STD treatment, required reporting and registration of illicit drug users, mandatory HIV testing and exclusion of protection for illegal drug users.

It may be necessary to change these existing laws and regulations to implement effective and comprehensive HIV prevention programs for IDUs. Legal expertise is needed to analyze such rules and recommend appropriate changes. More often than not,

strong arguments will be required to convince policy makers and legislators to make necessary changes, especially if such changes do not have the support of the community or relevant constituency.

Models of delivery

The complexities of HIV/AIDS and IDU require commitment and action across many different sectors. National HIV/AIDS, drug control and health policies—with mechanisms for coordinating policies and actions between different ministries and private and NGO sectors—are key features of many countries' response. Such intersectoral cooperation may work on a local level through district or community coordinating organizations to guide local actions. It is important to ensure that all such groups are fully informed about issues of HIV and IDU. Some mechanism should be established to ensure input from, or representation of, IDUs in any such process. For example, drug user organizations are represented on some government committees and in some cases are government-funded (such as the New South Wales Users and AIDS Association in Australia).

Feasibility in resource-constrained settings

Review and revision of policies, laws and regulations can be a lengthy process, requiring extensive consultation and consensus building. This is true in setting up intersectoral mechanisms to coordinate policies and programs. Nevertheless, increasing numbers of developing and transitional countries—such as Brazil, India and Ukraine—are establishing national or state policies that address HIV/AIDS among IDUs. The state of Manipur in India provides one example of how a state HIV strategy has made IDU its main priority. Furthermore, there are examples of legislative reform in such countries that specifically allow HIV prevention programs for IDUs (such as laws permitting needle and syringe exchange in Brazil).

Effectiveness

Although it is difficult to evaluate the impact of broad policies and specific legislation on HIV risk practices and transmission, there is evidence from a number of countries that a committed multisectoral response is the key to an effective HIV prevention strategy. Australia and the United Kingdom have tried this approach, and HIV epidemics among IDUs have been averted.^{27, 28}

Benefits, risks and limitations

Fear that such actions might undermine illicit drug control has prevented the widespread adoption and endorsement of various HIV prevention policies and strategies for IDUs. Many decision makers argue that strategies such as needle-syringe programs and risk reduction education may encourage illicit drug use, recruit new drug users or send the wrong message (particularly to young people). Similar arguments have been used against the promotion of condoms and sex education. There is no scientific evidence to justify such concerns. On the contrary, there is evidence that most HIV prevention strategies support drug control efforts; they encourage drug users to enter treatment and offer opportunities to disengage from criminalized activities.

Mobilizing drug users

Objectives

Recognizing the IDUs' isolation and fear of harassment or possible arrest, it is understandable that they do not trust traditional and mainstream services. Peer educators, outreach workers and networks can bring prevention services to the hardest-to-reach IDUs and help establish trust between them and health services.

Description

Involving current and ex-drug users in designing, promoting and delivering services is important for prevention programs. Three types of peer-led interventions may be considered:

First, peer outreach and education programs recruit and train current or ex-drug users to deliver HIV (and other health) interventions to drug users, both in- and out-of-treatment. Training is often similar to that for other HIV education outreach workers, although peer workers have the benefit of personal experience and may be perceived by IDUs as more trustworthy and credible.

Second, drug-user organizations offer a structured group of current and ex-drug users, along with other interested individuals, that can represent the interests of drug users, advocate on their behalf and support and implement HIV and other programs for drug users.

Third, drug-user network interventions take advantage of existing communities of drug users to disseminate information and interventions. Networks of IDUs provide excellent opportunities for outreach programs to influence peer group and social norms. Members of the network are provided with information and HIV training and are encouraged to disseminate this information as well as HIV prevention materials—such as condoms and sterile injection equipment—throughout their sexual and drug-using networks.

Feasibility in resource-constrained settings

All three types of peer-led approaches have been introduced into many different developing and transitional countries. There are difficulties where drug users are criminalized or registered and cannot be employed by HIV prevention agencies. Similarly, the formal organization of drug-user groups may not be permitted.

Effectiveness

Peer education programs among drug users have proven effective in reducing both risk behavior and infection rates,²⁹ while peer-based needle-syringe exchange programs have proven better at reaching new clients than programs conducted by non-peers.³⁰ Social network interventions using peers have been shown to

SELECTING PRIORITY INTERVENTIONS FOR COMMUNITIES WITH HIV EPIDEMICS AMONG IDUs

Assessment and Monitoring

- Implement rapid assessment to inform intervention development.
- In parallel, develop a sentinel surveillance system to monitor behaviors and HIV prevalence/incidence.

Advocacy

- Educate politicians, community leaders and other decision makers about the urgent need for specific interventions. Provide evidence and experience from other relevant countries (include study tours for key decision makers).

Policy and Legislation

- Negotiate with local authorities a pragmatic and flexible application of laws and regulations to lower barriers to assistance and enable IDUs to change their behaviors to reduce risks.
- In parallel, review existing laws and regulations that impede effective implementation of HIV prevention strategies.

Information and Education

- Develop IEC programs for IDUs, sex workers and other vulnerable populations, using peer networks.
- In parallel, develop public education campaigns to reduce stigmatization of IDUs.

Training

- Develop workforce of outreach workers skilled in working with IDUs.
- In parallel, provide training to relevant health professionals in contact with IDUs.

Service Provision

- Ensure access to sterile injection equipment, condoms, VCT and user-friendly STD prevention and treatment services.
- In parallel, develop drug dependence treatment services.

Prisons

- Provide training for prison staff and prisoners and negotiate broader interventions with prison authorities.

HIV/AIDS Care

- Ensure equitable access to treatment and care.

be better than professional outreach interventions in both reaching IDUs and providing HIV education at lower cost for both recruitment and training.³¹ Although drug-user organizations have been established in developing countries such as India, documentation of their work has largely been limited to developed countries such as Australia and the United States.³²

Determining Priorities

As described above, a broad range of interventions may be applied at different levels, ranging from those that target individual behaviors to those that focus on national policies and legislation. Given the possibilities and limited resources available, how do planners and decision makers select the best possible combination

of interventions? Feasibility, acceptability and effectiveness of individual interventions and strategic combinations largely depend on local conditions. The stage and nature of the HIV/AIDS epidemic in a community are also important factors. Clearly, selecting priorities and determining strategic approaches must be based on an understanding of the local situation—hence the need for good quality situation assessment before investing in interventions. Countries with very low HIV prevalence will have different priorities from those with concentrated epidemics among specific populations—such as IDUs or sex workers—or generalized epidemics.

LESSONS LEARNED AND RECOMMENDATIONS

- IDU and associated HIV/AIDS are spreading rapidly and now affect all regions of the world.
- Drug-use patterns and HIV risk practices are dynamic, differing between populations, geographically, over time and in different settings. Careful monitoring and detailed investigation of risk behaviors and contexts of drug use are necessary to prepare timely and effective interventions. Rapid assessment and response (RAR) and behavioral surveillance survey (BSS) methods have been developed for this purpose.
- Multiple behaviors put IDUs at risk of HIV infection, including: shared drug solutions, needles, syringes and other injection equipment; contamination of drug solutions during production or distribution; unprotected sex; and various skin-piercing procedures, such as tattooing. Interventions must address all potential risk behaviors.
- There is evidence that HIV epidemics among IDUs in both developed and developing countries can be prevented, slowed and even reversed through specific programs, including: community-based peer outreach, increased access to sterile injecting equipment and greater access to drug dependence treatment, particularly methadone.
- At the individual level, IDUs are more likely to change their drug-use behavior to reduce HIV risks than their sexual behavior, although HIV-infected IDUs do change their behavior to protect their sexual partners.
- Where effective action has been taken to stem HIV epidemics among IDUs, no single element has been found to be effective on its own. Comprehensive prevention programs, based on community development principles, operating in supportive environments that include access to social welfare and primary health care underlie successful approaches.
- The earlier it is implemented, the more effective and cheaper HIV prevention targeting IDUs will be. If possible, programs should begin before HIV is introduced into this population or begins to spread widely (i.e., before HIV prevalence among IDUs exceeds five percent).
- Information and education projects are most effective if they are targeted at drug users and those most vulnerable, provide explicit information and are developed with the involvement of IDUs themselves. Information campaigns on IDU for the general public can increase stigmatization of IDUs.
- Risk reduction counseling can be effective if it is delivered by peers through outreach, and involves natural drug-user social networks.
- HIV testing should be voluntary and confidential, with adequate pre- and post-test counseling provided by someone who understands IDU issues. Testing can assist in risk reduction counseling and referral for treatment.
- Disinfection programs have limited effectiveness, and should be promoted only as a second-line option when sterile injection equipment cannot be secured.
- Programs increasing the access of sterile needles and syringes are core components of an effective HIV prevention strategy. Peer programs are more effective than those using professional personnel. Pharmacy programs can be very effective in increasing availability of sterile injection equipment. Needle and syringe disposal programs must run in parallel with distribution programs.
- Methadone is the most effective drug dependence treatment for reducing HIV transmission among opioid users. Because of high relapse rates, abstinence-based drug dependence treatment has limited success.
- Many IDUs, particularly those involved in sex work, are at high risk of sexual transmission of HIV. Sexual risk reduction information/counseling, treatment of STDs and condoms should be components of HIV prevention programs.

- Infected IDUs should have equal access to HIV treatment and care. This may require services sensitive and responsive to their specific needs.
- Policy and law reform may be required in some communities and countries to enable specific prevention interventions for IDUs to be implemented.
- Drug users can be very effective in mobilizing action and providing prevention services—such as through drug-user organizations—for their peers.
- Behaviors, peer networks, HIV risks and intervention options of young drug injectors—including adolescents—often differ from those of older IDUs, and may require different prevention and treatment approaches.

FUTURE CHALLENGES

There is now much experience in implementing HIV prevention programs in many different settings. The major challenge is in expanding these programs to a reach and penetration that matches the scale of the drug injection population—often when this is itself growing, sometimes explosively. Countries or regions where such expansion has been achieved are few; barriers to effective scaling-up are many.

It has proven difficult to convince authorities to take action before HIV has begun to spread—when action is most likely to be effective. Opportunities to achieve this are rapidly disappearing, as IDU spreads to almost every country, rapidly followed by explosive HIV outbreaks.

Whereas drug injection is beginning at a younger age (often during adolescence) in many developing countries, most research and evaluation of interventions have been limited to adult populations. Priority attention must be given to investigating IDU among young people and identifying effective HIV prevention strategies for this population. Other particularly vulnerable and marginalized populations of IDUs, including prisoners, sex workers, those living in rural settings, indigenous and minority peoples and the homeless must also receive consideration.

CASE STUDIES

THE LIFESAVING AND LIFEGIVING SOCIETY (LALS), KATHMANDU, NEPAL

LALS began in 1991 when two volunteers noticed much unsafe injection occurring in the streets of Kathmandu, and began an outreach program distributing sterile injection equipment. IDU was a hidden phenomenon in Nepal at that time, despite estimates of 25,000 to 40,000 opioid users in the Kathmandu valley, about 10 percent of them IDUs. Ignorance about HIV/AIDS and other harms associated with IDU were the norm.

LALS initially distributed sterile needles and syringes purchased privately, overcame distrust among the IDUs and began to learn from them. With access to NGO funding, LALS established an office and staff of outreach workers. Discussions with community leaders and authorities helped defuse initial antagonism; the formation of a link with the Narcotic Division was extremely important in assuring LALS' survival and operations.

At its peak, LALS employed 24 full-time outreach workers—including peers, ex-IDUs, nurses and social workers—and carried out a range of functions from primary health care and counseling to syringe exchange and condom distribution. A review of the impact of LALS' activities from 1991 through 1994 found that although HIV was present, it was not spreading through LALS clients, who were reporting marked decreases in frequencies of risk behavior.

LALS operates as an NGO, with only enough funding to reach 1,000 IDUs, many intermittently. With growth of the IDU population, and a move to the injection of buprenorphine rather than heroin, an HIV epidemic exploded among Nepalese IDUs about five years ago. Those served by LALS were protected to some extent, but most Nepalese IDUs were not in touch with LALS. The organization's experience illustrates both the effectiveness of these programs and the need to expand them.

HY VONG CAFÉ—CAFÉ HOPE, HO CHI MINH CITY, VIETNAM

Hy Vong (“Hope”) Café in Ho Chi Minh City (HCMC) is Vietnam’s first needle-exchange café, having grown from the first needle-exchange program in Vietnam, which was started by the Save the Children Fund (UK). The HIV epidemic in Vietnam began and remains largely among IDUs (themselves a rapidly growing population) with a prevalence of 40 percent or more in many parts of Vietnam. The epidemic has lasted longest in HCMC, and it is here that the most innovative responses, like Café Hope, are operating. While government took a “hands-off” approach to the original needle-exchange program, Café Hope is now supported by the governments of both Canada and Vietnam.

Café Hope is a small building in an enclosed area of a park near the waterfront, itself enclosed by a wire fence. The Provincial AIDS Committee of HCMC, responsible for management of the café, has an agreement with the police not to target the park unduly or arrest IDUs simply for injection—it is, to all intents, a “safe injection park.” Needle exchange consists of one container with sterile needles and syringes and another for disposal, located at the front of the café. In addition to the needle exchange, the café provides condoms, information, tea or coffee, facilities for showering or washing clothes and a small STD clinic.

The café is run by experienced ex-IDU peer workers, who also talk with the customers, settle disputes and provide education and information. Open 10 hours a day, seven days a week, Café Hope is visited by about 350 people each day. Increasing numbers of these are commercial sex workers who also inject drugs—a population not only at major risk themselves, but also important vectors in the spread of the epidemic to other groups, especially their clients, and a prime target for interventions.

RAPID PROGRAM—MÉDECINS SANS FRONTIÈRES, RUSSIA

From September 1997 to January 2000, Médecins sans Frontières-Holland (MSF-H) provided training and support for HIV/AIDS prevention among IDUs in the Russian Federation (RF), focusing on the use of the World Health Organization’s *Rapid Assessment and Response Guide on IDU* and the *European Peer Support Manual*. As part of their training, participants carried out a rapid situation assessment (RSA) in their city or region, as a major step towards designing and implementing an effective program to prevent HIV transmission among IDUs.

To sustain prevention activities from the training program, MSF-H formed a strategic alliance—the Russian AIDS Prevention Initiative-Drugs (RAPID)—with the international organizations IHRD, Open Society Institute-Russia (OSI-R) and Médecins du Monde. RAPID participants who successfully completed a Rapid Situation Assessment in their city or region were invited to apply for technical assistance from international advisors and funding for harm reduction programs from OSI-R. The Ministry of Health of the Russian Federation, through its infectious diseases and narcology departments, had significant and practical input in advising and supporting the training program and selecting participants. MSF-H and UNAIDS also worked together on joint training efforts and in developing Russian educational material prior to the training course. UNAIDS—in the framework of a broader contract with the Trimbo Institute—enabled staff of this institute to participate in the design and delivery of the first three training courses.

As a result, 199 participants from 61 cities in 52 regions of RF attended the training; 61 rapid situation assessments were undertaken; and, by mid-2000, 35 HIV prevention programs had been started. This comprehensive training program—including two courses held three months apart, city visits and the program’s integration with further capacity development and funding activities—has had a greater practical impact than the many short training courses that have been offered on harm reduction and HIV prevention in

Eastern Europe and elsewhere. This type of training approach appears to influence attitudes and behaviors of participants as well as providing knowledge and skills. The training program has also stimulated collaboration between health, law enforcement and other administrative agencies at the city and regional level; Ministry of Health structures at the federal level; other governmental bodies and NGOs and international agencies working in RE.

The combination of rapid assessment and response methods with the type of training provided by the MSF-H program within a strategic framework—which also includes additional technical assistance and funding—appears to be effective in assisting countries in Eastern Europe respond to HIV among IDUs. The approach may also have application in other parts of Central and Eastern Europe and the Newly Independent States and countries in Asia, Africa and South America.

RELEVANT CHAPTERS

- Chapter 12 *Social Marketing for HIV Prevention*
- Chapter 18 *Reducing the Risk of Mother-to-Child Transmission of HIV During Pregnancy and Delivery*
- Chapter 19 *Mother-to-Child Transmission of HIV Through Breastfeeding: Strategies for Prevention*
- Chapter 23 *Counseling, Testing and Psychosocial Support*

REFERENCES

1. Crofts N, Aitken CK, Kaldor J. The force of numbers: Why hepatitis C is spreading among Australian injecting drug users while HIV is not. *Med J Aust* 1999;170:220-221.
2. World Health Organization (WHO). *The Rapid Assessment and Response Guide on IDU (IDU-RAR): Draft for field testing*. Geneva: WHO, Substance Abuse Department, 1998.
3. Amon J, Brown T, Hogle J, et al. *Behavioral Surveillance Surveys: Guidelines for Repeated Behavioral Surveys in Populations at Risk of HIV*. Arlington, VA: Family Health International, 2000.
4. Burt J, Stimson GV. *Drug Injectors and HIV Risk Reduction: Strategies for Protection*. London: Health Education Authority, 1993.
5. Coyle S, Needle R, Normand J. Outreach-based HIV for injecting drug users: A review of published outcome data. *Publ Health Rep* 1998;113(suppl 1):S19-S30.
6. Cottler LB, et al. Peer-delivered interventions reduce HIV risk behaviors among out-of-treatment drug abusers. *Publ Health Rep* 1998;113(suppl 1): S31-S41.
7. Kumar MS, Mudaliar S, Daniels D. Community-based outreach HIV intervention for street-recruited drug-users in Madras, India. *Publ Health Rep* 1998;113(suppl 1);58-66.
8. Des Jarlais D, Friedman SR, Perlis TE, et al. Long-term trends in three high HIV seroprevalence epidemics: IDUs in Bangkok, Thailand, New York City, USA, and Santos, Brazil (Abstract MoPpD1053). In *Abstract Book of the XIIIth International AIDS Conference*, Durban, 2000.
9. Des Jarlais D, Perlis TE, Friedman SR, et al. The roles of syringe exchange and HIV counseling and testing in the declining HIV epidemic among injecting drug users (IDUs) in New York City (Abstract MoPpD1124). In *Abstract Book of the XIIIth International AIDS Conference*. Durban, 2000.
10. Donoghoe MC, Power R. Household bleach as disinfectant for injecting drug users. *Lancet* 1993;8861:1658.

11. McGeorge J, Crofts N, Burrows C. Injecting drug users and the disinfection of used injecting equipment. VIIth International Conference on the Reduction of Drug Related Harm, Hobart, 1996.
12. Burrows D. *Starting and Managing Needle and Syringe Programs*. New York: International Harm Reduction Network, 2000.
13. Lurie P, Reingold AL, Bowser B, et al. *The Public Health Impact of Needle Exchange Programs in the United States and Abroad*. Berkeley, CA: University of California Press, 1993.
14. Normand J, Vlahov D, Moses LE, eds. *Preventing HIV Transmission: The Role of Sterile Needles and Bleach*. Washington, D.C.: National Academy Press, 1995.
15. U.S. General Accounting Office. *Needle Exchange Programs: Research Suggests Promise as an AIDS Prevention Strategy*. Report to the Chairman, Select Committee on Narcotics Abuse and Control. Report no. GAO/HRD-93-60. House of Representatives, Washington, D.C., 1993.
16. Office of Technology Assessment. *The Effectiveness of AIDS Prevention Efforts*. Washington, D.C.: OTA, 1995.
17. Ward J, Mattick R, Hall W. *Key Issues in Methadone Maintenance Treatment*. Sydney: New South Wales University Press, 1992.
18. Farrell M, Neeleman J, Gossop M, et al. Methadone provision in the European Union. *Intl J Drug Policy* 1995;6:168-172.
19. Abdul-Quader AS, Friedman SR, Des Jarlais D, et al. Methadone maintenance and behavior by intravenous drug users that can transmit HIV. *Contemp Drug Problems* 1987;14:425-434.
20. Metzger DS, Navaline H, Woody GE. Drug abuse treatment as HIV prevention. *Publ Health Rep* 1998;113(suppl 1):97-106.
21. Hartel DM, Schoenbaum EE. Methadone treatment protects against HIV infection: Two decades of experience in the Bronx, New York City. *Publ Health Rep* 1998;113(suppl 1):S107-S115.
22. Bell J, Hall W, Blythe K. Changes in criminal activity after entering methadone maintenance. *Br J Addict* 1992;87:251-258.
23. Ball JC, Ross A. *The Effectiveness of Methadone Maintenance Treatment: Patients, Programs, Service and Outcome*. New York: Springer-Verlag, 1991.
24. Farrell M, Ward J, Mattick R, et al. Methadone maintenance treatment in opiate dependence: A review. *BMJ* 1994;309:991-1001.
25. Gibson DR, Flynn NM, McCarthy JJ. Effectiveness of methadone treatment in reducing HIV risk behavior and HIV seroconversion among injecting drug users (editorial). *AIDS* 1999;13(14):1807-1818.
26. Leshner AI. Preface. *Publ Health Rep* 1998;113(suppl 1):1-3.
27. Stimson GV. AIDS and IDU in the United Kingdom, 1987-1993: The policy response and the prevention of the epidemic. *Soc Sci Med* 1995;41:699-716.
28. Des Jarlais DC, Hagan H., Friedman SR, et al. Maintaining low HIV seroprevalence in populations of injecting drug users. *JAMA* 1995;274:1226-1231.
29. Wiebel W, Jimenez A, Johnson W, et al. *Positive effect on HIV seroconversion of street outreach interventions with IDU in Chicago, 1988-1992*. VIIIth International Conference on AIDS, Berlin, 1993.
30. Crofts N, Herkt, D. A history of peer-based drug user groups in Australia. *J Drug Issues* 1995;25(3):599-616.
31. Broadhead R, Heckathorn D, Weakliem D. Harnessing peer networks as an instrument for AIDS prevention: results from a peer-driven intervention. *Publ Health Rep* 1998;113(suppl 1):S42-S57.
32. Jose B, Friedman SR, Neaigus A, et al. Collective organisation of injecting drug users and the struggle against AIDS. In Rhodes T, Hartnoll R, eds. *Aids, Drugs and Prevention: Perspectives on Individual and Community Action*. London: Routledge, 1996.

RECOMMENDED READING

Ball AL, Rana S, Dehne KL. HIV prevention among injecting drug users: Responses in developing and transitional countries. *Publ Health Rep* 1998;113(suppl 1).

Ball, JC, Lange, WR, Meyers CP, Friedman S.R. Reducing the risk of AIDS through methadone maintenance treatment. *J Health Soc Behav* 1998;29.

Burrows D, Bijl M, Trautmann F, Sarankov Y. *Training Manual on HIV/AIDS Prevention Among Injecting Drug Users in the Russian Federation*. Moscow: Médecins sans Frontières–Holland, 1999.

Centre for Harm Reduction. *Manual for Reducing Drug Related Harm in Asia*. Melbourne: The Centre for Harm Reduction, Macfarlane Centre for Medical Research and Asian Harm Reduction Network, 1999.

Costigan G, Crofts N, Reid G. *The Manual for Reducing Drug Related Harm in Asia*. Bangkok: Family Health International, 2000.

Crofts N, Costigan G, Narayanan P, et al. Harm reduction in Asia: A successful response to hidden epidemics. *AIDS* 1998;12(suppl B):S109-S115.

Joint United Nations Programme on HIV/AIDS. Drug use and HIV/AIDS. Statement presented at the United Nations General Assembly Special Session on Drugs. Geneva: UNAIDS, 1989.

Jones TS, Vlahov D, eds. HIV prevention for injection drug users. *J AIDS & HR* 1998;18 (suppl 1).

Needle RH, Coyle S, Cesari H, eds. HIV prevention with drug-using populations: Current status and future prospects. *Publ Health Rep* 1998;113(suppl 1).

Rhodes T, Hartnoll R, eds. *AIDS, Drugs and Prevention: Perspectives on Individual and Community Action*. London: Routledge, 1996.

Stimson G, Des Jarlais DC, Ball A, eds. *Drug Injecting and HIV Infection*. London: UCL Press, 1998.

Wiebel W. *The Indigenous Leader Outreach Model: Intervention Manual*. Rockville: National Institute on Drug Abuse, 1993.

