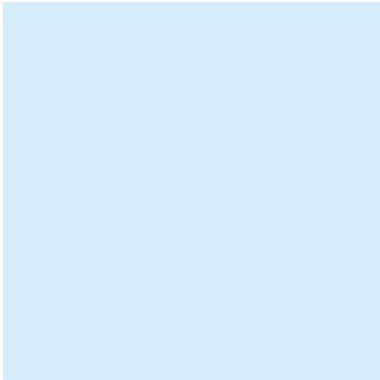
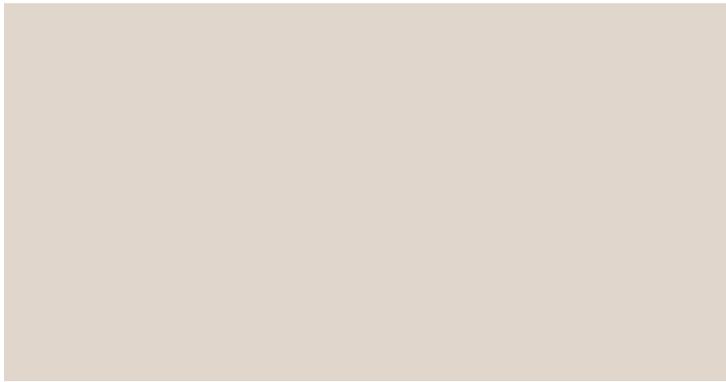
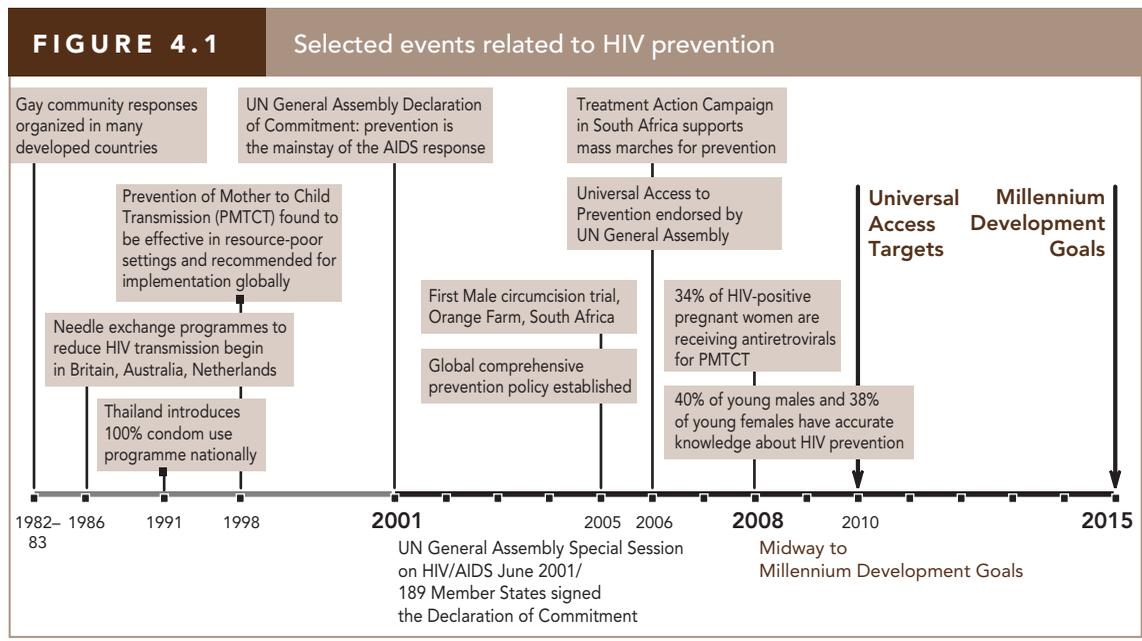


Preventing new HIV infections: the key to reversing the epidemic



Chapter 4



Key findings

- The global HIV epidemic cannot be reversed, and gains in expanding treatment access cannot be sustained, without greater progress in reducing the rate of new HIV infections.
- Existing prevention strategies can be effective in reducing the risk of HIV exposure, but prevention programmes, especially in countries with concentrated epidemics, fail to reach many people at high risk of exposure to HIV, including a majority of men who have sex with men and injecting drug users.
- Young people aged 15–24 account for 45% of all new HIV infections in adults, and many young people still lack accurate, complete information on how to avoid exposure to the virus.
- In the last two years, major progress has been made to expand access to services to prevent mother-to-child transmission. This progress suggests that in future sufficient financing, commitment, and strategic action could render this mode of HIV transmission rare.
- Prevention efforts should become more strategically focused on sexual partnerships, especially those that increase the risk of HIV exposure; these include serodiscordant relationships and multiple concurrent partners.
- Prevention programmes will not be optimally effective unless they are supported by effective initiatives to address the social factors that increase risk and vulnerability, including gender inequality, HIV stigma and discrimination, and the social marginalization of the populations most at risk of HIV exposure.
- Sustaining prevention gains represents one of the great challenges in HIV prevention. To maintain a robust prevention response, countries need to nurture a “prevention movement”, build the human and technical capacity needed to sustain prevention efforts, and work to stimulate greater demand for prevention services.

The HIV epidemic cannot be reversed without strong, sustained success in preventing new HIV infections. HIV prevention remains—in the words of the *Declaration of Commitment on HIV/AIDS*—“the mainstay of the response”. Treatment access has steadily expanded in recent years, but efforts to prevent new HIV infections have lagged. While 87% of countries with targets for universal access have established goals for HIV treatment, only about 50% of these countries have targets for key HIV-prevention strategies.

Between 2005 and 2007, substantial new funding became available for HIV-related programmes in low- and middle-income countries; and, as the discussion below reveals, access to certain components of comprehensive HIV prevention improved. However, at the halfway mark towards the deadline for the Millennium Development Goals, many people at risk of HIV infection lack meaningful access to evidence-informed prevention services.¹

This chapter focuses on HIV prevention activities. It complements Chapter 3, which describes the societal factors that must be addressed to maximize the impact of HIV-prevention programmes. After briefly summarizing the evidence base for available HIV prevention tools and strategies, this chapter provides information on programme coverage and identifies key actions required to amplify the strategic impact of HIV prevention efforts. A closing section examines the challenge of sustaining gains in HIV prevention, emphasizing the need to build national and local prevention capacities, and to create a broad-based social movement that generates ongoing demand for prevention services.

The evidence base for HIV prevention

Extensive experience in diverse regions has demonstrated the effectiveness of a broad range of HIV-prevention strategies. Effective strategies exist to prevent every mode of HIV transmission—sexual, bloodborne (including through injecting drug use or in health-care settings), and mother-to-child (see Wegbreit, 2006). Available HIV prevention approaches include strategies to:

- change sexual and drug-using behaviours;
- promote correct and consistent use of male and female condoms;
- reduce the number of sexual partners;
- improve the management of sexually transmitted infections;
- broaden access to HIV testing and counselling;
- increase access to harm-reduction programmes for drug users;
- promote medical male circumcision; and
- ensure effective infection control in health care settings (UNAIDS, 2005).²

In recent years, male circumcision has been confirmed as a potentially valuable technology for HIV risk reduction in men. Other recent developments include the emergence of a cluster of HIV prevention strategies centred on antiretroviral treatment; strategies include prevention of mother-to-child transmission, post-exposure prophylaxis, experimental regimens for pre-exposure prophylaxis³, and probable secondary-prevention benefits from therapeutic administration of antiretroviral drugs. Prevention efforts are most effective when they involve strategic combinations of evidence-informed strategies that meet the specific needs of people at risk. Bringing combination HIV prevention to scale would avert more than half of all new HIV infections projected to occur between 2005 and 2015 (Stover et al., 2006).

¹ Evidence-informed prevention strategies are those having a basis in sound scientific evidence. Factors relevant to national decision-making on HIV prevention strategies include not only evidence but also appropriateness, cost, feasibility, and equity.

² Observational studies indicate that—in countries that implemented HIV prevention programmes in the early years of the epidemic—population-based behaviour changes lowered HIV incidence by an average of 50%–90% (Auerbach, Hayes & Kandathil, 2006).

³ Trials for eight different experimental approaches to pre-exposure prophylaxis were either under way or planned as of March 2008. Two of these trials are studying topical formulations, including CAPRISA 004, the first microbicide trial of a product incorporating antiretroviral drugs.

Likewise, clear guidelines have been established for national identification of prevention priorities. Essential programmes required for HIV prevention have been identified, ranging from tailored programmes to prevent sexual and drug-related transmission to strategies to protect the safety of national blood supplies. Normative guidance is available to countries on essential policy actions to support national HIV prevention strategies (UNAIDS, 2005).

Selection of the particular combination of prevention strategies best suited to national conditions should be guided by evidence. Countries are advised to “know your epidemic and your response”. Using a strong and constantly improving evidence base, countries are able to:

- identify the behaviours and settings linked to HIV transmission, and populations most at risk of exposure to HIV;
- understand key epidemiological trends;
- assess the scope, scale, quality, and focus of prevention programmes;
- address contextual factors that increase risk and vulnerability to HIV; and
- close gaps in access to critical prevention services (see UNAIDS, 2005; UNAIDS, 2007a).

Maximizing the strategic impact of HIV prevention

In previous years, the *Report on the global AIDS epidemic* has summarized the evidence for the effectiveness of the individual components of comprehensive HIV prevention (see UNAIDS, 2006a). The remainder of this chapter focuses on a selected number of high-impact steps for maximizing the impact of existing HIV prevention approaches. By using evidence-informed HIV prevention more strategically—and by finally addressing many key issues that have been ignored or

under-prioritized—accelerated progress can be achieved towards the ultimate goal of reversing the global epidemic by 2015, as stated in Millennium Development Goal 6.

Frank, accurate, and comprehensive HIV prevention programmes for young people

The global epidemic cannot be reversed without sustained success in reducing new HIV infections among young people. Nearly half the world’s population is under 25 (UNFPA, 2006). Globally, it is estimated that young people under age 25 accounted for an estimated 45% of all new HIV infections in adults in 2007.

Addressing inadequate knowledge of HIV

While knowledge alone is often insufficient to produce long-lasting behaviour change, an accurate understanding of the risks of HIV and how to prevent exposure is a prerequisite to risk reduction. Tragically, many young people lack basic knowledge about HIV prevention. Survey data from 64 countries indicate that 40% of males and 38% of females aged 15–24 had accurate and comprehensive knowledge about HIV and about how to avoid transmission (UNGASS Indicator 13).⁴ Although this represents an improvement, especially for females, over 2005 knowledge levels, when 37% of males and 28% of females were found to have a basic knowledge of HIV, knowledge levels in 2007 are still well below the *Declaration of Commitment’s* goal of ensuring comprehensive HIV knowledge in 95% of young people by 2010.

While more than 70% of young men know that condoms can protect against HIV exposure, only 55% of young women cite condom use as an effective prevention strategy (UNGASS Indicator 13). In Somalia, only 4% of young women (ages 15–24) report accurate knowledge of HIV, and only 11% of adult females are aware that condoms can prevent HIV transmission.

⁴ This indicator uses population-based survey data (preferably from the last two years) to assess young people’s ability to correctly identify ways of preventing sexual HIV transmission (e.g. condom use) and to reject major misconceptions about HIV transmission (e.g. that HIV may be transmitted by mosquito bites). Young people are asked five pertinent questions and are deemed to have accurate and comprehensive knowledge of HIV if they can answer all five questions accurately.

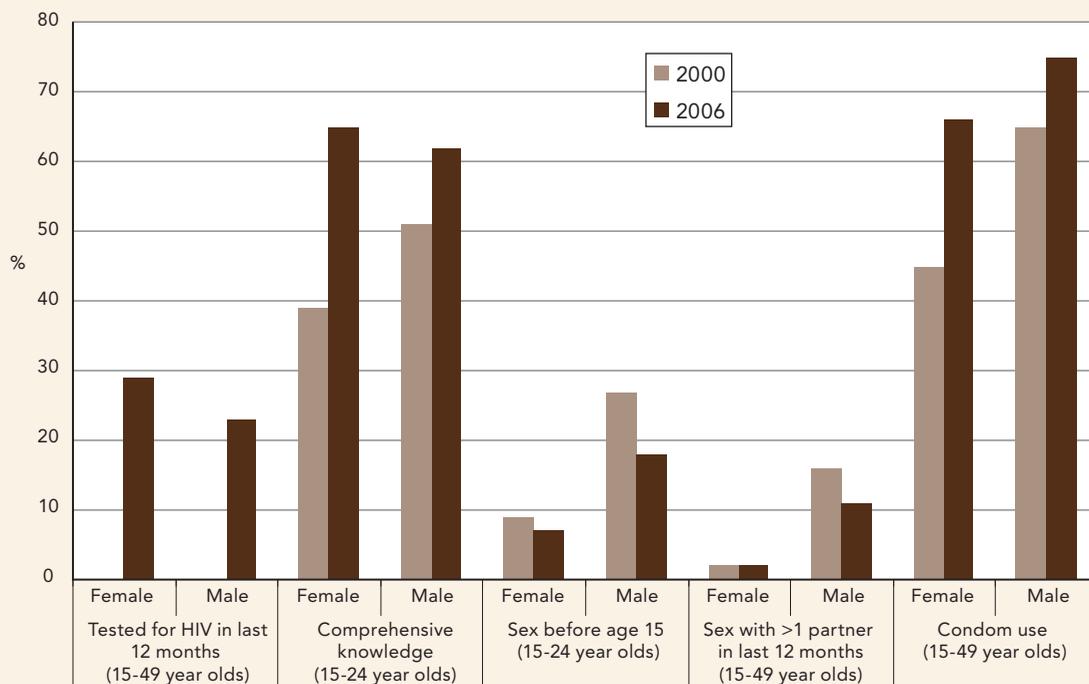
Does national leadership on HIV prevention make a difference? The case of Namibia

In recent years, the Government of Namibia has taken steps to strengthen the country's HIV response, which is guided by a five-year strategic plan that has an overriding goal of reducing HIV incidence. Over the last two years, the country more than doubled its domestic spending on HIV programmes; it has also been successful in mobilizing substantially greater external support. In 2007, the country enacted legislation to stimulate and guide greater effort on HIV by a broad array of national ministries and sectors.

These efforts are bearing fruit in the form of improved coverage for essential prevention initiatives, and favourable behavioural and epidemiological trends. Life-skills based HIV education is now taught in 79% of secondary schools, a national campaign has targeted HIV risk and alcohol abuse, and more than 25 million male condoms are distributed for free each year by the public sector (equivalent to seven condoms per male aged 15–49). Namibia has the highest rate of HIV testing of the 38 countries recently surveyed by the Demographic and Health Survey programme, with 29% of women and 18% of men aged 15–49 having received the results of an HIV test within the last 12 months (MEASURE DHS, 2008). Levels of knowledge about HIV and condom use have increased, while rates of sex before the age of 15 and sex with more than one partner in the last 12 months have decreased (Figure 4.2). Adult HIV prevalence appears to have stabilized, while HIV prevalence in young women attending antenatal clinics declined from 18% in 2003 to 14% in 2007.

FIGURE 4.2

Namibia: HIV related knowledge and behaviour in the general population, 2000–2006



Source: Namibia Country Progress Report 2008.

Tailoring prevention efforts to diverse settings

Countries with different epidemic patterns will inevitably require different national strategies for implementing effective HIV prevention programmes. HIV epidemics have been classified as low-level, concentrated, generalized, or hyperendemic, as outlined below.

- In a low-level epidemic, HIV infection may have existed for many years but has never spread to significant levels in any subpopulation.
- In a concentrated epidemic, HIV has spread rapidly in a defined subpopulation, but is not well established in the general population. This pattern suggests active networks of risk within the subpopulation. The future course of the epidemic is determined by the frequency and nature of links between highly infected subpopulations and the general population.
- In a generalized epidemic, HIV is firmly established in the general population. Although subpopulations at high risk may continue to contribute disproportionately to the spread of HIV, sexual networking in the general population is sufficient to sustain an epidemic, independent of subpopulations at higher risk of infection.
- In a hyperendemic country, the overall prevalence of adult HIV infection exceeds 15%.
- Of 135 low- and middle-income countries, UNAIDS estimates that 97 countries have low-level or concentrated epidemics and 38 have generalized epidemics, of which 7 are categorized as hyperendemic.

In countries with low-level and concentrated epidemics, the central prevention focus will be on populations at greatest risk. Unfortunately, 69% of countries with low-level or concentrated epidemics report having laws, regulations, or policies that pose barriers to use of HIV services for populations most at risk. Countries should work to repeal these legal barriers and to actively promote prevention access. To reduce the likelihood that a low-level or concentrated epidemic will become generalized, prevention programmes should also focus on potential epidemiological bridges, such as the sex partners of injecting drug users or men who have sex with men.

In generalized epidemics, where infection extends beyond discrete populations at elevated risk, greater investment is required in broader, population-based interventions, such as mass media, school-based education, community mobilization, workplace interventions, and strategies to alter social norms. In contrast, hyperendemic countries require broad-based societal mobilization to address the sociocultural and economic practices that contribute to unsafe sexual behaviour. This expanded focus should complement intensive knowledge and behaviour change interventions, to reduce the number of people who have sex with a nonregular partner or multiple concurrent sexual partnerships. Access to medical male circumcision should also be scaled up (UNAIDS, 2007a).



A Buddhist monk conducts an HIV education session with local youth. Potential sources of HIV prevention services for young people are numerous, including schools, peers, media, parents and religious leaders.

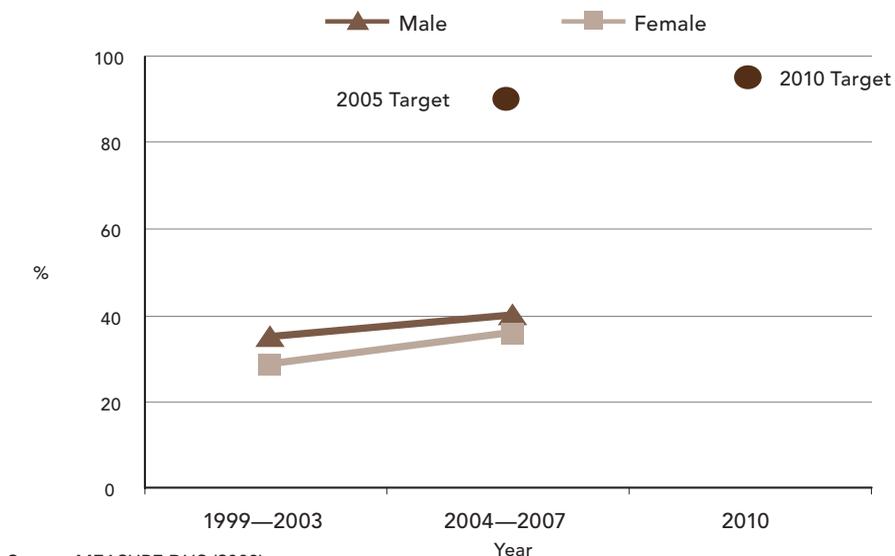
Effective strategies for reaching young people

Numerous channels exist to educate young people about HIV, to ensure their access to prevention commodities and health services, and to encourage them to take steps to avoid HIV transmission.⁵

- *School-based programmes.* In a meta-analysis of 22 studies of school-based prevention education programmes in low- and middle-income countries, 16 programmes that involved curriculum-based, adult-led interventions had positive effects on age of first sex, frequency of sex, number of partners, use of condoms or contraceptives, and frequency of unprotected sex (WHO et al., 2006b; Biddlecom et al., 2007).⁶
- *Community-based programmes for young people who are not in school.* Evaluation studies have determined that strong behavioural results may be achieved among out-of-school

FIGURE 4.3

Comprehensive knowledge of HIV among young people (ages 15–24), 1999–2007



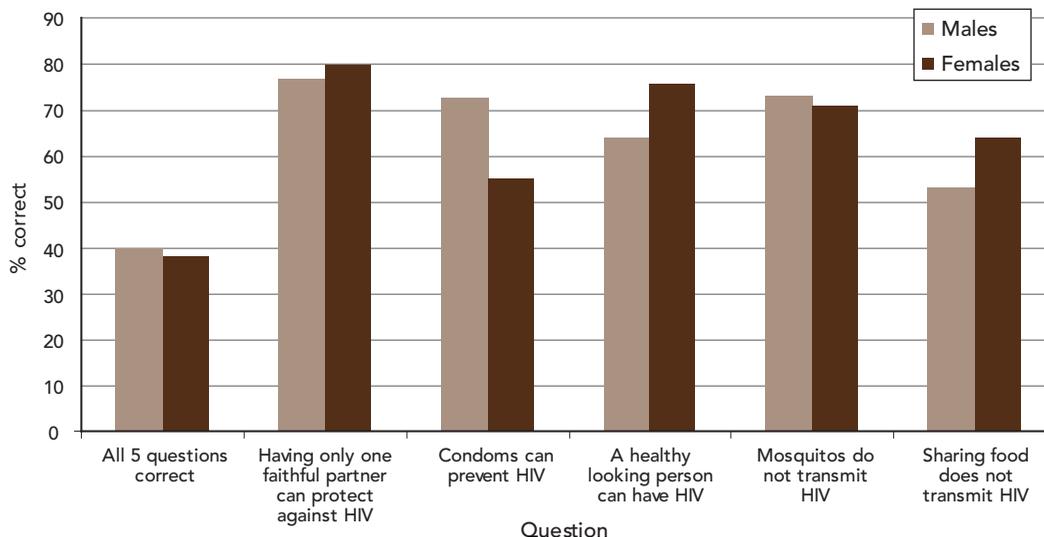
Source: MEASURE DHS (2008).

⁵ For a recent summary of the evidence of behaviour change programmes focused on young people, see World Association for Sexual Health, 2008.

⁶ Kenya and Zimbabwe—countries where significant positive changes in sexual behaviours among young people have been reported in recent years—made major early investments in school-based HIV prevention programmes.

FIGURE 4.4

Comprehensive knowledge of HIV among young people, by type of question



Source: UNGASS Country Progress Reports 2008.

youth, especially when they are delivered by established youth service organizations (Maticka-Tyndale & Brouillard-Coyle, 2006).

- **Mass media.** According to a meta-analysis, five of six youth-oriented media campaigns in various low- and middle-income countries had a measurable impact on HIV-related risk behaviours (National Research Council, et al., 2005).
- **Youth services.** Youth services provide a “hook” to connect young people with HIV prevention information and services. Such services also address factors that may increase young people’s risk of exposure to HIV, such as unemployment, poverty, or lack of access to health care (Akhmedov et al., 2007).⁷

Many countries are failing to make use of available channels for delivering HIV prevention information and services to young

people. Most countries (89%) indicate having integrated HIV education into their secondary school curricula, but only 65% address HIV education in primary schools, with countries in sub-Saharan Africa being most likely to do so (Figure 4.5). National governments in 67% of countries with generalized epidemics report having implemented school-based HIV education in most or all districts in need, and 42% have put in place HIV prevention programmes for out-of-school youth in most or all districts in need. Nongovernmental responses indicated even lower levels of implementation, at 51% and 28%, respectively (UNGASS Country Progress Reports, 2008). This low level of implementation is reflected in the paucity of data on this intervention. Of the 147 countries that submitted national progress reports in 2008, only 34 reported on the percentage of schools that taught life-skills based HIV

⁷ Young people are over-represented among the world’s poor (ILO, 2006). Poverty or the lack of decent work opportunities may deprive young people of a sense of purpose or belonging, and potentially subject them to coercive sex and other conditions that increase their risk of HIV exposure.

prevention in the last academic year. Among the reporting countries, this intervention was, on average, provided in less than 40% of schools. In addition, nongovernmental informants in 36 countries (28%) state that they have laws, policies, or regulations that actually impede young people's access to HIV prevention and other services (UNGASS Country Progress Reports, 2008).

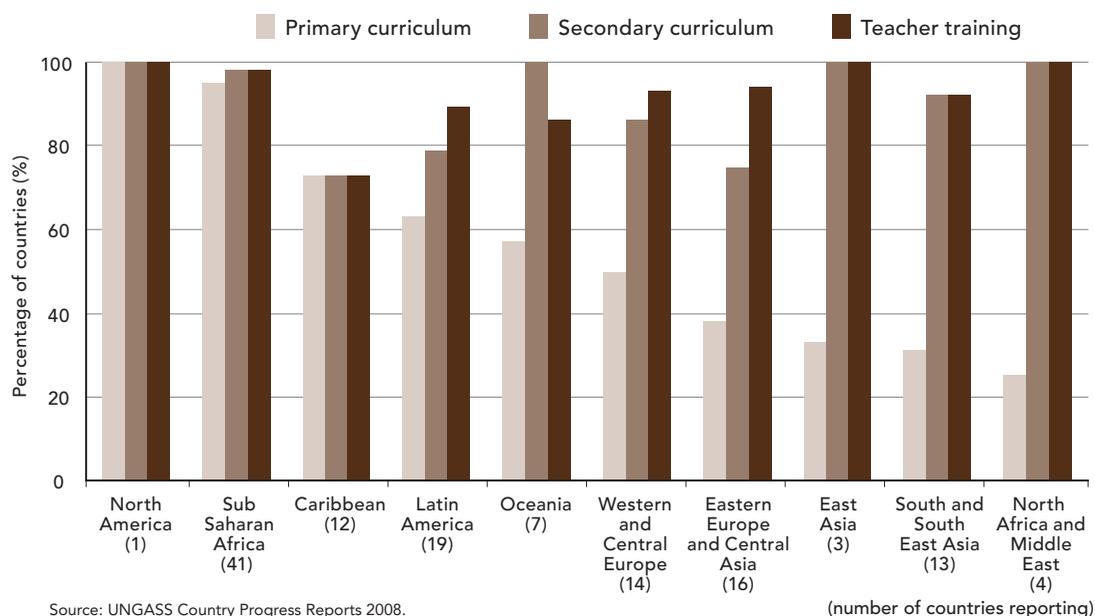
All young people have the right to be educated about how to avoid HIV transmission, but the need for HIV-prevention services is especially pressing for those who are particularly at risk of HIV exposure. This includes young people experiencing displacement, migration, poverty, or imprisonment; and sex workers, injecting drug users, and men who have sex with men.

Providing accurate, comprehensive HIV prevention for young people

A central weakness of many prevention initiatives for young people is that they do not speak frankly or provide the accurate, comprehensive information that young people need. Many countries that require HIV education in schools have curricula that prioritize abstinence-focused programming, discouraging forthright discussions about condoms and safer sex. However, no study in low- and middle-income countries has found this approach to be effective, and studies in the United States indicate that youth-oriented prevention programmes that exclusively promote abstinence do not reduce the risk of HIV infection (Underhill, Montgomery & Operario, 2007).

FIGURE 4.5

Percentage of countries with AIDS education as part of the school curriculum



Educating young peers about HIV

Champuii (24) is a former drug user and peer educator in Aizwal, Mizoram, India

Champuii's troubles began early. Abandoned by her parents when she was just six years old, she was brought up by foster parents, but she never felt at home. By early adolescence, she was drinking alcohol, and before long she was using hard drugs.

"Since I did drugs, my life became upside down", she says. "My schoolteachers expelled me and when my parents knew that I was into such things they kicked me out." With no place to live, the streets became her home, and her drug-using friends became her only family. She began selling drugs to support herself and her habit.

Champuii also struggled with her sexual identity. "My parents forbade me to wear boys' clothes and play with boyish toys", she says. "They forced me to live a girl's life. But that didn't convince me. When I was out of the house, it was a young man's life that I led."

She was arrested many times and sent to rehabilitation centres and camps. The last time she was put in lockup she realized that her days were numbered. Her body and mind were rapidly deteriorating, and she became afraid she was going to die. A painful sore on her leg kept her awake all night. By morning she had decided that she would change her life, and stop taking drugs. "At the last minute, I said, why should I die of drugs? This life has been given to me by God, so I should give it back to him", she says.

Champuii has not taken drugs for over two years. She works as a peer educator under UNODC for CHARCA, a local nongovernmental organization, offering support, information, and advice to drug users who are at risk of HIV. She also works with local youth groups and associations. Champuii always speaks about her own experiences. "This gives people faith in me", she says. "They are able to tell me their problems and I can give them counselling. That is the advantage of being open about my life."

Champuii and the other peer educators use music to reach out to young people. She gives regular performances in church and has also sung on local television. Each time she uses the opportunity to educate listeners about drug use and HIV.

She has come a long way from her days of drug use. "Earlier, people looked down on me", she says. "Today when I perform and sing in church, I feel accepted by them. I am the happiest when they praise my songs."

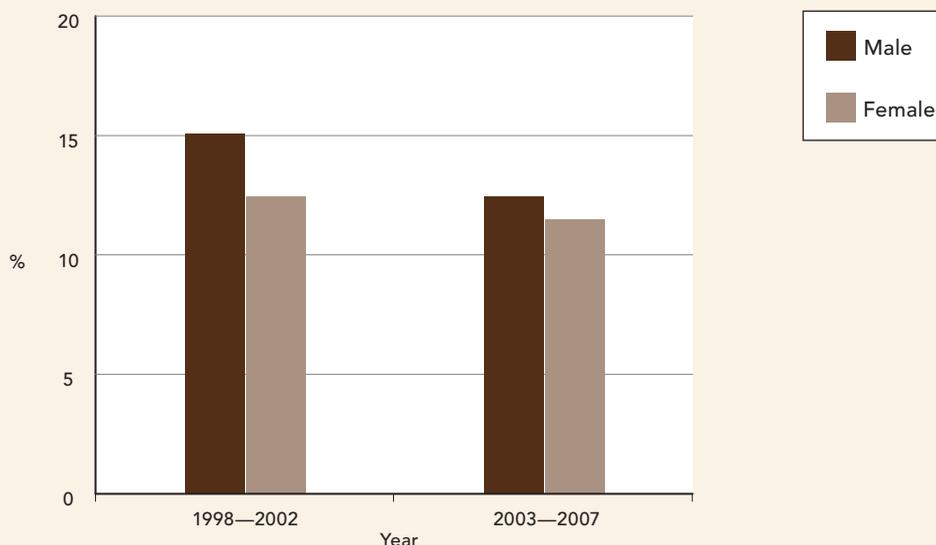
Champuii has become a role model and a leader in her town. When she is not educating her peers, Champuii is taking care of them at the centre where she lives. It is a commune for young people who have given up drugs and sex work, which houses up to 25 people.

"After all I've gone through, all the ups and downs, I feel empowered", she says. "I'm looking at life from a better place. I'm very optimistic."



FIGURE 4.6

Percentage of young people who have first sex before age 15, by sex



Source: MEASURE DHS.

Increasing age of sexual debut for young people

In low- and middle-income countries, the percentage of young people having sex before age 15 is declining in all regions—a continuation of trends detected earlier this decade (Figure 4.6). Males are significantly more likely to report sex before age 15, except in sub-Saharan Africa, where adolescent girls under 15 are almost 50% more likely than boys to be sexually active. While the global trend toward delayed sexual debut is clear, surveys reveal substantial variations between countries. In a comparison of young men's sexual behaviours in six African countries, average age of first sexual intercourse fell in Ethiopia, Nigeria, and the United Republic of Tanzania between 1996–2001 and 2002–2006, but increased in Mozambique, Rwanda, and Uganda (UNGASS Indicator 15).

In much of the world, many young people become sexually active as adolescents. For example, in Kenya, the United Republic of Tanzania, Uganda, and Zambia, most young people have become sexually active by age 18 (Zaba et al., 2004). Such rates are comparable to those reported in high-income countries, such as the United States, where 47% of young people have initiated sex by the time they finish high school (CDC, 2006a). Parents, health authorities, school systems, and youth service

providers have an interest in encouraging young people to delay initiation of sexual activity and they also have an obligation to provide sexually active young people with potentially life-saving information and support.

Curbing the delivery of human sexuality and HIV prevention information to young people is inconsistent with a critical element of effective youth-focused HIV prevention efforts—the

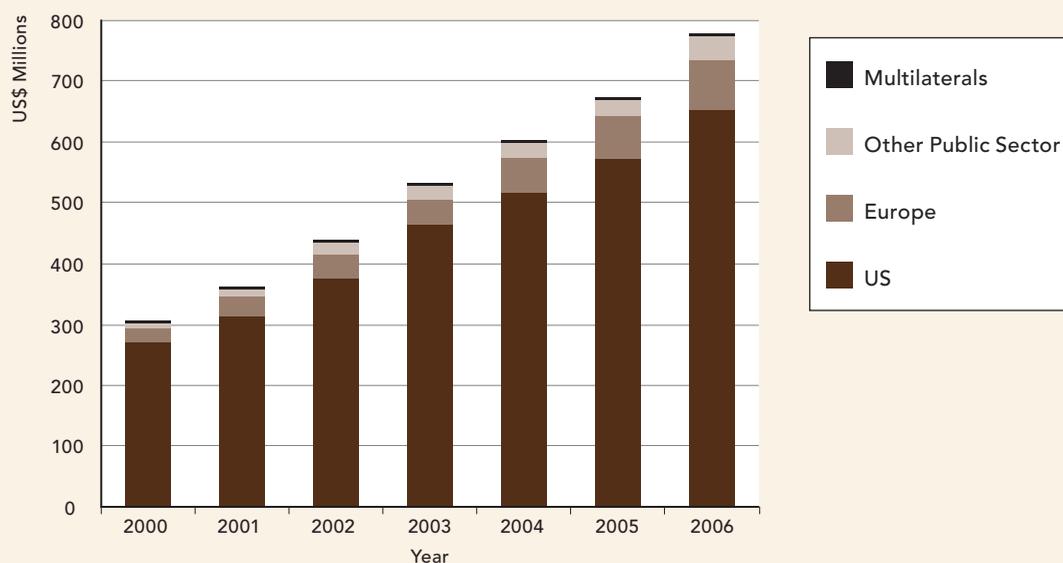
The search for new prevention tools

While national programmes work to bring available HIV prevention strategies to scale and to improve their strategic application, the search continues for additional tools to strengthen prevention efforts. In particular, new prevention technologies are urgently needed for women who currently lack access to female-initiated prevention methods.

In 2007, results from the HIV biomedical prevention research field were sobering. In September 2007, efficacy trials of the most promising HIV vaccine candidate—a product by Merck & Co. that aimed to elicit strong cell-mediated immune responses to viral exposure—were discontinued after the vaccine appeared not to be efficacious. Similarly, studies of early generation vaginal microbicides found that they were also not efficacious (Nelson, 2007). Trials also determined that female diaphragms (used in concert with a lubricant gel) had no additive benefit to condoms (Padian et al., 2007), and studies of acyclovir treatment for herpes simplex virus type 2 failed to demonstrate additional protection against HIV infection (Watson-Jones et al., 2008).

Disappointment is natural when clinical trials fail to confirm effectiveness, but the magnitude and severity of the HIV epidemic compel continued emphasis on research, including research into innovative social behavioural strategies and new prevention technologies. Researchers are investigating new prevention approaches, such as vaccines that aim to generate broadly neutralizing HIV antibodies (see Montefiori et al., 2007) and microbicides that incorporate antiretroviral compounds, two of which have now entered clinical trials. Some next-generation microbicides are especially attractive, because they

FIGURE 4.7 Annual investment in preventive HIV vaccine research and development by source between 2000 and 2006



Source: HIV Vaccines and Microbicides Resource Tracking Working Group, 2007.



do not require application immediately before sexual intercourse. In addition, studies are investigating whether pre-exposure antiretroviral prophylaxis and improved treatment of herpes simplex virus type 2 can reduce the risk of sexual HIV transmission.

Noncommercial spending on research on new prevention technologies rose sharply between 2000 and 2006—by 153% for vaccines, and by 430% for microbicides (Figure 4.7). During this period, public sector funders invested approximately US\$ 67 million in research and development on a range of other experimental biomedical prevention approaches, including adult male circumcision, suppression of herpes simplex virus type 2, cervical barriers to prevent HIV transmission, and pre-exposure antiretroviral prophylaxis.

Well-designed prevention trials are complex and costly (Global HIV Prevention Working Group, 2006). Trials must enroll thousands of participants to assess the efficacy of new prevention technologies, and often suffer from complications, including low adherence to trial protocols by participants and insufficiently high incidence of HIV to provide the statistical power needed to render results meaningful. HIV incidence tends to fall over time in trial cohorts—perhaps as a result of trial sponsors’ regular provision of a strong HIV prevention package—further complicating the ability of trials to reliably detect the effect of interventions (Gray & Wawer, 2007). It is also clear that prevention trials are unlikely to succeed without meaningful, ongoing involvement and ownership by the communities in which such research is taking place (UNAIDS & AVAC, 2007).

encouragement of open discussion of sex and the consequences of early sexual behaviour. In South Africa, the most significant predictors of condom use among young adults were condom use at sexual debut, and talking with one’s first partner about condoms (Hendriksen et al., 2007).

In addition to providing basic information and encouraging discussion about safer sex, prevention programmes for young people should promote social norms that protect young people and reduce their risk of infection. This often means that programmes must address sensitive topics that some may find uncomfortable. Such topics include gender norms that idealize “machismo” and multiple sexual partnerships for men and boys, and increase the risk of exposure to HIV for girls. For example, in Burkina Faso, Ghana, Malawi, and Uganda, nearly one in five adolescent females (ages 15–19) reported that their first sexual experience involved force or coercion (Biddlecom et al., 2007).

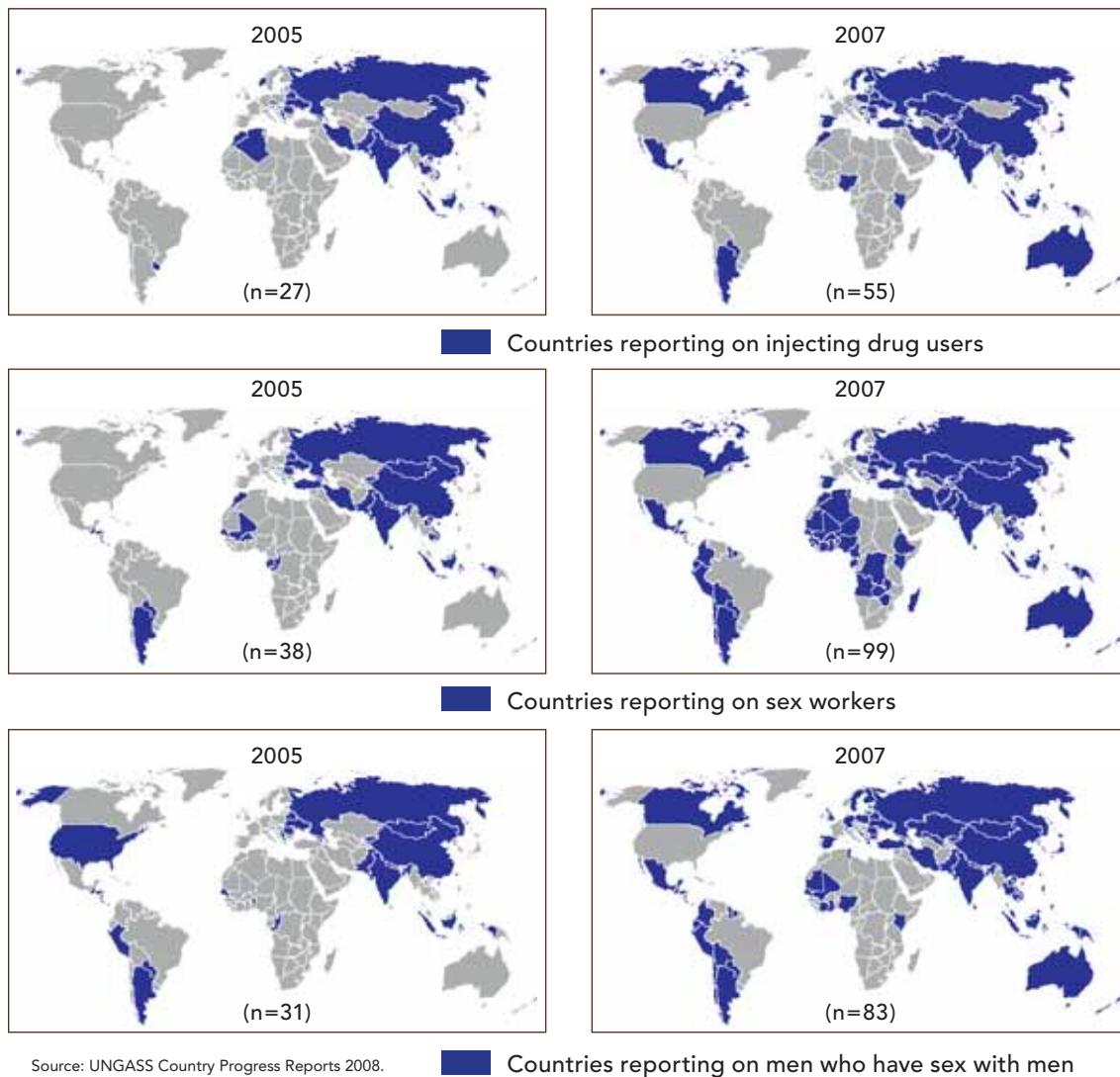
Another sensitive topic that youth-focused HIV prevention efforts must address is the role of

intergenerational sex in HIV transmission to girls and young women. Adolescent women in southern Africa are two to four-and-a-half times more likely to be infected than their male counterparts (Bearinger et al., 2007). The extent of sexual contact between adolescent females and adult men is often an important factor in the gender disparities in HIV prevalence among teenagers in Africa (Dupas, 2006). According to recent surveys in Uganda, three out of four unmarried, sexually experienced adolescent girls reported having received gifts or money in exchange for sex, usually from an older man (Darabi et al., 2008).

The median age difference between spouses in Africa ranges from 5.5 years to 9.2 years—significantly greater than the median age difference among married couples in other regions (Wellings et al., 2006). In low- and middle-income countries, early marriage represents the most common factor that increases risk of HIV exposure for adolescent girls; young married women have more frequent unprotected intercourse than their unmarried counterparts, typically with husbands

FIGURE 4.8

Country reporting on prevention services for populations most at risk, 2005 and 2007



Source: UNGASS Country Progress Reports 2008.

Scaled-up prevention coverage for populations most at risk

Outside sub-Saharan Africa, most epidemics are either low level or concentrated, and are predominantly associated with high-risk behaviours in specific populations. Almost universally, individuals belonging to these populations are exposed to HIV through unprotected sex or through exposure to contaminated injecting equipment. Three populations have been consistently identified as being at higher risk of exposure to HIV: injecting drug users, sex workers, and men who have sex with men.⁸

National reporting on UNGASS indicators indicates that prevention-service delivery for populations most at risk is inconsistent and highly variable within and between regions. Although significant percentages of these populations can correctly identify the means to prevent sexual HIV transmission, many lack access to essential prevention services, such as condoms and sterile needles.

⁸ See Chapter 2 for a discussion of the significant role of populations most at risk in epidemics in sub-Saharan Africa.

Of populations most at risk men who have sex with men receive the lowest coverage of HIV prevention services.

who are older and thus more likely to be HIV-positive (Gregson et al., 2002; Wellings et al., 2006; Bearinger et al., 2007). Yet relatively few scaled-up HIV-prevention programmes aim to alter social norms on intergenerational partnerships.

The breadth of reporting on UNGASS indicators suggests that countries are increasingly recognizing the centrality of HIV prevention efforts that focus on populations most at risk of HIV exposure. As Figure 4.8 illustrates, the number of countries reporting on indicators specifically relating to injecting drug users, men who have sex with men, and sex workers significantly increased between 2005 and 2007 (UNGASS Indicator 9).

Nearly all countries (92%) have a policy or strategy to promote HIV prevention for populations most at risk of HIV exposure (UNGASS Country Progress Reports, 2008), a percentage that has increased over time (e.g. from 81% in 2003). However, prevention services for these populations have been brought to scale in relatively few settings, leaving most people at highest risk of HIV exposure with little or no access to HIV prevention services (Figures 4.9 and 4.10). In addition, nongovernmental informants in nearly two thirds of countries (63%) report having laws, regulations, or policies that present obstacles to effective HIV prevention, treatment, care, and support services for populations most at risk (UNGASS Country Progress Reports 2008). Ultimately, poor coverage for those at greatest risk of exposure to HIV reflects a lack of leadership among political leaders, national ministries, and international donors. The following sections discuss the current coverage of prevention programmes for men who have sex with men, sex workers, and injecting drug users.



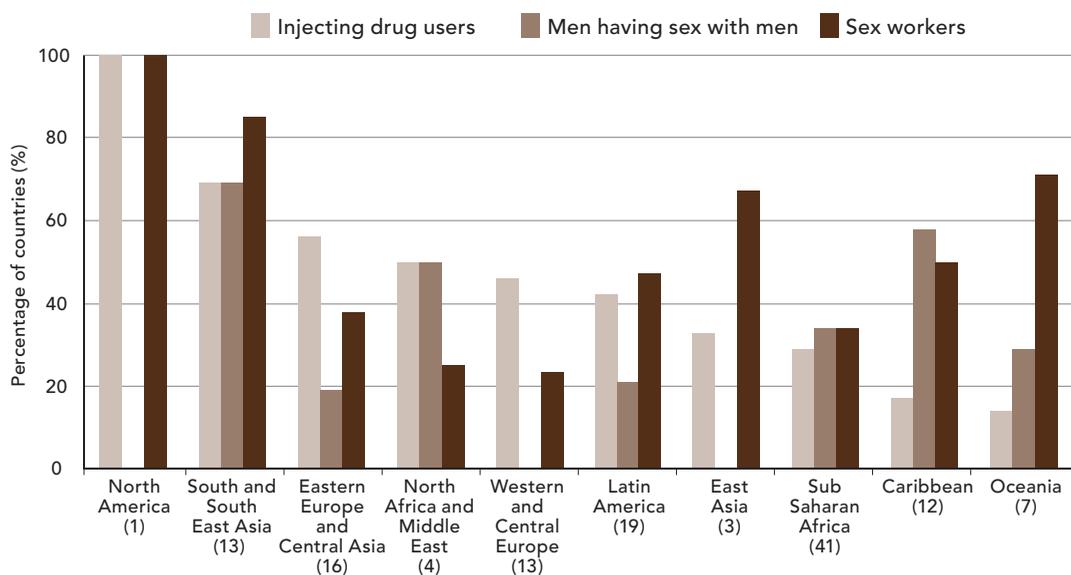
Men who have sex with men

As Chapter 2 explained, men who have sex with men face a disproportionate risk of exposure to HIV in diverse settings throughout the world (CDC, 2005). Yet men who have sex with men remain seriously underserved with respect to HIV prevention services. In countries reporting on populations most at risk of HIV exposure, 40% of men who have sex with men report knowing where they can receive an HIV test and having been given a condom in the previous year (UNGASS Indicator 9). Governments from fewer than 20% of countries with generalized epidemics report having implemented focused HIV-prevention programmes for men who have sex with men in most or all of districts with such a need. Nongovernmental respondents from only 10% of these countries report the implementation of such programmes. Nongovernmental respondents from 32% of countries report the existence of laws, regulations, or policies that present obstacles to effective HIV-related services for men who have sex with men (UNGASS Country Progress Reports 2008).

Knowledge that condoms can prevent HIV transmission is widespread among men who have sex with men surveyed in low- and middle-income countries, but many do not have access to condoms. In several countries, (including

FIGURE 4.9

Percentage of countries reporting laws, regulations or policies that present obstacles to effective HIV services for most-at-risk populations



Source: UNGASS Country Progress Reports 2008.

(number of countries reporting)

Armenia, Greece, Mexico, Papua New Guinea, and Turkey) fewer than 25% of men who have sex with men have access to condoms. Fewer than 40% of men who have sex with men surveyed in Indonesia, the Philippines, Turkey, and Ukraine said they used a condom the last time they had sex. In Cuba, only slightly more than half of men who have sex with men used a condom at last sex (UNGASS Indicator 9).

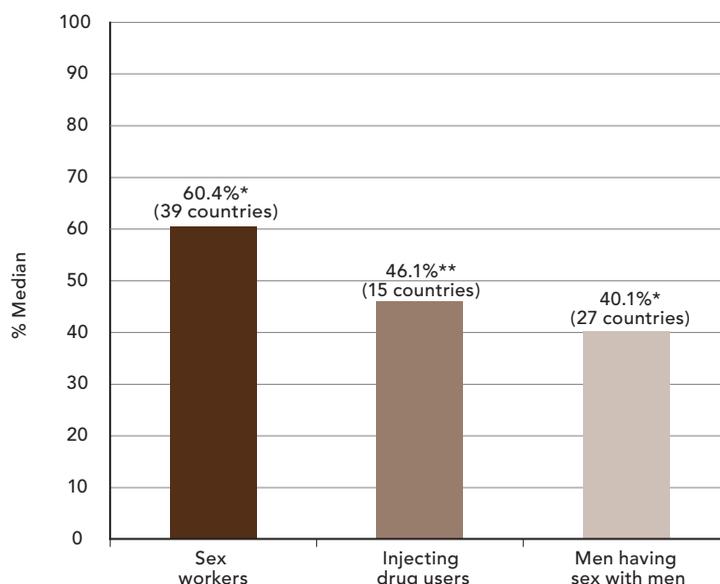
Men who have sex with men are as culturally diverse as the world’s population, ranging from gay-identified men in major urban settings of high-income countries to “hijra” sex workers in India. Focused programmes for these groups should actively engage local men who have sex with men to ensure that initiatives address the actual needs and circumstances of the intended beneficiaries. Most research on HIV-prevention interventions for men who have sex with men has been done in high-income countries, underscoring the urgent need for greater social science research and intervention studies among men who have sex with men in low- and middle-income countries. Focused ethnographic

research studies—such as a recent study that examined the various sexual meanings for male-male relationships in Viet Nam (Vu et al., 2008)—may also aid in the design, tailoring, and implementation of prevention programmes in particular settings. In many cases, however, where sound research focused on men who have sex with men has been undertaken, the findings have not been translated into practice.

A recent trial of a prevention intervention specifically designed for men who have sex with men in Dakar, Senegal, highlights both the potential of evidence-informed HIV-prevention programmes focused on men who have sex with men, and some of the challenges faced by such men in different settings. Developed in collaboration between the health ministry, technical experts and nongovernmental organizations, the project included peer education, increased access to services for HIV and sexually transmitted infections, and media sensitization activities. The intervention led to notable increases in HIV knowledge and use of HIV testing services. However, although knowledge of the

FIGURE 4.10

Percentage of most-at-risk populations reached with HIV prevention programmes, 2005–2007



* Percentage of sex workers and men having sex with men reported knowing where they can receive an HIV test and that they were given condoms.

** Percentage of injecting drug users who reported knowing where they could receive an HIV test and be provided with condoms and sterile injecting needles and syringes.

Source: UNGASS Country Progress Reports 2008.

effectiveness of condoms increased, little change was observed in rates of consistent condom use. Consistent use of water-based lubricants was also low, largely because such products are expensive and difficult to use (Population Council & USAID, 2007).

Sex workers

The term “sex workers” constitutes a meaningful single population for epidemiological purposes, but it encompasses broadly diverse groups (women, men, and transgender individuals), and people working in a wide variety of settings (e.g. brothels, informal settings, and on the street). Some sex workers are highly mobile, while some are engaged only in informal exchange of sex for gifts or favours. Many people who engage in sex work do not self-identify as sex workers.

In Kenya, research suggests that prevention projects that result in increased condom use during paid sex could significantly reduce HIV transmission. If condom use increased to 90%

during paid sex along the trans-Africa highway that links Mombassa and Kampala, Uganda (where some 8000 female sex workers operate), between 2000–2500 new HIV infections could be prevented annually on that section of the highway, with a decline in HIV incidence from 1.3% to 0.4% (Morris, 2006).

Community empowerment approaches, especially when combined with programmes that address the environment in which sex workers live and work, have consistently proven to be effective in increasing condom use among sex workers and their clients (see Kerrigan et al., 2006). For example, in the Sonagachi district of Calcutta, India, a project to empower sex workers and facilitate their access to essential information and health services lowered HIV incidence among targeted sex workers by two thirds, and increased rates of condom use from 5% to 90% (see Basu et al., 2004; Pardasani, 2005). In the state of Karnataka, India, uptake of HIV prevention services for sex workers was

Stand up for your rights

Nigel Mathlin is President of GrenChap, the Caribbean HIV/AIDS partnership

Nigel Mathlin has been active in HIV issues since he attended his first peer education workshop 12 years ago. He recently started a small nongovernmental organization, the Grenada/Caribbean HIV/AIDS Partnership (GrenChap) that concentrates on men who have sex with men and other populations at higher risk of HIV exposure in Grenada.



"It's a continuing journey, it's very challenging, getting the courage to be a public face—standing up, bringing out important issues that are not really very popular", says Mathlin. "People automatically assume that you may be HIV-positive or that you are an MSM, a sex worker, a drug user, or any of the other populations that you advocate for. But the whole point of it is to make all of those things irrelevant. Whether I'm straight or gay it should not affect my access to treatment or my rights."

Stigma against men who have sex with men is a huge obstacle to HIV programming in the eastern Caribbean. Until recently, male-male sex was not even recognized. "It was challenging, nobody really wanted to talk about the issue", explains Mathlin. "People said 'We do not have any gay people in Grenada.' I mean, at present there is still criminalization of men who have sex with men in many of the Caribbean Islands."

Mathlin tries to take every opportunity to educate people and to give a voice to men who have sex with men. But there is a long way to go. "It is clear that so much work needs and remains to be done", says Mathlin. "Too many people continue to die from AIDS. More people should come for treatment and the attitudes towards gay persons, sex workers ... and injecting drug users must change. Their rights continue to be denied."

Mathlin sees gender as an important cross-cutting issue in the Caribbean. "A lot of Caribbean men want to maintain that ultra-masculine image and if they do not, they're not respected. I call it the rooster scenario." These attitudes make it difficult for people to negotiate safer sex and are the major driver of the epidemic in the region. The situation is compounded by intergenerational sex, poverty, domestic violence, and the breakdown in family structures. Loss of respect for women is another factor that creates vulnerability to HIV.

Mathlin is inspired by progress that is being made across the Caribbean, and is learning from the experience of neighbours like Jamaica, where organizations are challenging the climate of violence towards men who have sex with men with the help of international partners like Human Rights Watch. Other organizations are working hard to change the legal and policy environment that stigmatizes and criminalizes men who have sex with men.

Mathlin has found his role as an HIV advocate challenging. Although he has had encouragement from strangers, those he is close to have not always been as supportive. At times he is even concerned for his safety. He fears that homophobia may force him to leave his beloved home and country, as happened to some of his Jamaican peers.

But work must go on. "I can make a difference", says Mathlin. "No matter of how small the impact is, it is a positive one, and at the end of the day if I can save one or a few lives, or if I can make life easier for people who do not have a voice, I've done my part, that is enough for me."

facilitated by the involvement of sex workers in formative behavioural studies and sexually transmitted infection surveillance studies, mobilization of a peer outreach network, and selection of the location and staff for the project's clinic (Steen et al., 2006). In Africa, peer-based HIV-prevention programmes for sex workers have proven to be highly effective in changing sexual behaviours and reducing the rate of new HIV infections (Wegbreit et al., 2006).

The level of reported access to condoms and HIV testing for sex workers is somewhat higher than for men who have sex with men—across 39 countries, an average of 60% of sex workers reported having access to condoms and HIV testing. Regional variations include 41% in South and South-East Asia, 72.8% in Latin America and the Caribbean, 69% in Eastern Europe and Central Asia (seven countries), and 69.7% in sub-Saharan Africa (UNGASS Indicator 9). Reported rates of condom use with the last client are generally quite high, although there are exceptions; in Lebanon, only about one third of sex workers said they used a condom with their last client.

Injecting drug users

Use of contaminated equipment during injecting drug use represents an especially efficient means of HIV transmission, often leading to the rapid spread of HIV infection in localized networks of drug users. For example, in Karachi, Pakistan, HIV prevalence among injecting drug users rose from less than 1% in early 2004 to 26% in March 2005 (Emmanuel, Archibald & Altaf, 2006).

An estimated 78% of the world's injecting drug users live outside high-income countries (Aceijas et al., 2004). Globally, drug-use rates for opioids and other narcotic substances have stabilized in recent years, if often at elevated levels; increases in opioid use continue to be reported in Central Asia and Eastern Europe (UN Commission on

Narcotic Drugs, 2008). National HIV epidemics in these areas are primarily fuelled by transmission among drug users and their sexual partners. A number of countries, most notably in Asia, have also reported an increase in non-opioid drug use in recent years, although the latest data on drug use and manufacture suggest stabilization of these trends (UNODC, 2007).

Effective HIV prevention for injecting drug users involves ready access to substitution treatment⁹ for drug dependence and to sterile needles and syringes. In addition, prevention programmes should help injecting drug users to reduce the risks of sexual HIV transmission and link them to other health and social services, including confidential HIV testing, counselling, and anti-retroviral therapy (Institute of Medicine, 2006). Together, these programme components are commonly known as “harm reduction”. Studies have consistently demonstrated that harm reduction reduces HIV infections and risk behaviours without contributing to increased drug use or increasing other harms in the communities in which such programmes operate (Institute of Medicine, 2006; Fiellin, Green & Heimer, 2007).

Experience in diverse regions has demonstrated the feasibility of bringing harm-reduction programmes to scale, even in the face of official resistance (Physicians for Human Rights, 2007). Common features of high-coverage programmes for injecting drug users include involvement of community organizations, work with law enforcement agencies to minimize harassment, adequate and sustained funding, ease of access for clients, and involvement of injecting drug users in advisory bodies and other appropriate structures (UNAIDS, 2006b).

In 15 countries reporting data on prevention programmes for injecting drug users, median prevention coverage was 46% in 2007 (UNGASS, 2008 Indicator 9).¹⁰ Coverage for injecting drug

⁹ Substitution therapy for drug dependence has traditionally involved administration of methadone. Buprenorphine is an alternative to methadone used in a number of countries, and it may be more acceptable to some injectors. A clinical trial (HPTN 058) is under way in China and Thailand to assess the efficacy of buprenorphine in reducing HIV incidence.

¹⁰ With respect to injecting drug users, UNGASS Indicator 9 asked whether individuals knew where to receive an HIV test, had been given a condom in the previous 12 months, and had been given sterile needles and syringes (e.g. by an outreach worker, a peer educator, or a needle exchange project).



One-tenth or more of China's 1.3 billion people have migrated to urban areas.

HIV prevention for migrant workers

Globally, an estimated 86 million labour migrants were living outside the borders of their country of origin in 2005 (United Nations, 2006). Millions of

people worldwide also work in jobs that require constant movement.

The relationship between migration and HIV has been extensively studied, but is still only partially understood. The impact of migration on the spread of HIV may also differ, depending on the circumstances of mobility and a range of other variables (Southern African Migration Project, 2005). Moving for work increases the risk of HIV exposure in several ways. Individuals may move from areas of low HIV prevalence to areas of higher HIV prevalence, increasing the risks associated with sexual risk behaviours. Migrants may engage in higher levels of risk behaviour because they are isolated from their families or social support networks, and migrants often have limited access to prevention services (White, 2003; Khan et al., 2007). In 22% of countries, nongovernmental informants report the existence of laws, regulations, or policies that present obstacles to effective HIV prevention, treatment, care, and support for migrants (UNGASS Country Progress Reports 2008).

Focused peer-education initiatives in work settings that attract large numbers of migrant workers have proven effective in reaching migrants who may be vulnerable to HIV exposure (Population Council, 2003; Clinton Global Initiative, 2007). China has an estimated 200 million migrant workers, and in 2007 announced the launch of HIV-prevention initiatives in workplaces that employ migrants. China also implemented education and behaviour interventions at 420 frontier ports, reaching one million contract workers sent abroad. The All China Trade Union initiated HIV education campaigns in 10 000 evening schools, reaching an estimated three million migrant workers.

Strategic placement of HIV prevention services is especially important for truck drivers and other transport workers. In Brazil, a programme providing prevention counselling, HIV testing, and screening for sexually transmitted infections in customs stations led cross-border truckers to significantly increase their condom use with nonregular partners (Chinaglia et al., 2007). Prevention initiatives for mobile populations must take account of the role of gender in increased risk of exposure to HIV, because women represent half of the world's migrants (Global Commission on International Migration, 2005).

users is lower in Eastern Europe and Central Asia (median 46.8%) than in South and South-East Asia (median 61.5%). An important challenge in expanding access to harm reduction programmes is to ensure gender equity, because most such programmes are designed primarily for men (International Harm Reduction Development Program, 2007; Hankins, 2008).

Lack of official support for harm reduction in many countries, laws that prohibit key components of harm reduction, and onerous regulatory schemes (e.g. strict import limits on opiate maintenance medications) often make it difficult to implement harm reduction initiatives at all, much less bring such programmes to scale (Fiellin, Green & Heimer, 2007). Nongovernmental respondents in 40% of countries report the existence of laws, regulations, or policies that present obstacles to effective HIV services for injecting drug users (UNGASS Country Progress Reports, 2008). Substitution therapy with methadone is available in only 52 countries, and with buprenorphine in only 32 countries. Substitution therapy is largely

unavailable in Eastern Europe and Central Asia, where injecting drug use represents the most important mode of HIV transmission (TRC, 2008).

Recent years have seen important but uneven advances in access to harm reduction in various settings. China, for example, has expanded key components of harm reduction, reaching more than 88 000 individuals with methadone maintenance therapy, and nearly 50 000 injecting drug users with needle exchange services as of October 2007. Viet Nam is initiating its first pilot project of methadone substitution therapy in 2008 (Oanh, 2007), and harm reduction programmes in the country distributed 15 million condoms and 7.5 million needles and syringes in the first 10 months of 2007. In 2006, Bulgaria, Estonia, Finland, Latvia, and Lithuania created a regional network to expand and coordinate HIV prevention services for injecting drug users, with financing secured until 2009 from the European Commission. In Thailand, by contrast, a recent report by civil society informants found little expansion of harm reduction programmes, despite

HIV prevention in prison settings

On average, people in prison settings have much higher infection rates than those who live outside prisons (Dolan et al., 2007). In part, this reflects the disproportionate likelihood of incarceration for key populations, such as sex workers and injecting drug users. Within prisons, HIV transmission also occurs, typically through injecting drug use and unprotected sex. In all countries where data on HIV prevalence in prisons is available, women in prisons have higher infection rates than male prisoners.

Comprehensive HIV prevention services are seldom available in prisons. One third (33%) of countries report the existence of laws, regulations, or policies that present obstacles to effective HIV services for prisoners (UNGASS Country Progress Reports 2008). Comprehensive prison-based harm reduction and treatment services for drug users are available only in the Islamic Republic of Iran, Spain, and Switzerland. In 2006, only eight countries had established or piloted needle and syringe exchange programmes in prisons (Lines et al., 2006).

Rebuilding a people: harm reduction in Cambodia

Korsang is Cambodia's first harm reduction project, providing needle and syringe exchange, HIV education, and other services to the drug users of Phnom Penh. Founded in 2003 by Holly Bradshaw, an American grandmother and former drug user, it employs 68 staff members and reaches more than 3000 drug users.



"There was a lot of discrimination against us and it took us a long time [to get off the ground]", says Bradshaw. "The first drop-in centre was in a squat. It was 120 degrees Fahrenheit in the hot season, and we had a table, three chairs, a couple of fans, and a lot of rats."

Many who work at Korsang are young Cambodians who have lived most of their lives as refugees in the United States, before being deported for various crimes. Wicket, who is 27, was one of these young deportees. When he met Bradshaw, he was living with his family in the countryside where he felt out of place and useless. Wicket joined Korsang and was trained to be one of the first volunteers in the programme.

At the heart of Korsang are the peer educators—all of whom are either active or former drug users. "We are picking the ones who are respected, who are from neighbourhoods where the staff cannot enter", says Wicket. "They come into Korsang, they go on outreach to distribute syringes, collect dirty syringes. They educate their peers."

Korsang means to fix or rebuild, and that is exactly what it does for Phnom Penh's drug users. As well as harm reduction and medical services, the project provides food and shelter, and a safe haven for drug users. "Most of the guys are street-based injecting drug users, with nowhere to go", says Wicket. "They're tired, all night long—running from the cops, from the local gangsters, running from the guys who want their money. They have nothing to eat, they have no place to rest, so Korsang is a safe environment for them where they can rest, eat, sleep, talk to their peers, and get whatever medical services that they need."

The attitudes of ordinary Cambodians present the biggest challenge to the project. They have been evicted six times from their premises by angry neighbours. "They do not want to have drug users in their backyard or their building", says Bradshaw. "As soon as we get into a building and get set up we get evicted again. The neighbours sign petitions...and that is a huge problem for Korsang. That is discrimination against drug users."

"What drug users go through is absolutely killing them", says Bradshaw. "The discrimination, the criminalization, the repression...they're being beaten up, hung, starved, denied treatment, but they're not criminals, they're drug users, they've a chronic disease, they need treatment. But it's like they are stigmatized twice...they need their human rights."

Bradshaw is motivated to continue this work by her own experiences as a drug user. She started using drugs at the age of 12 and began injecting heroin in her early twenties. She went through a dozen "detox" programmes, but nothing worked until she found herself facing a 22-year prison sentence. She stopped, and soon began working to provide services for others. She felt that she had to give back what she had taken. "That is all I know, being a drug user, being on treatment, being in jail, working with drug users."

"I do not feel I chose this, I think I was chosen", she says. "That's the reason I'm still alive, you know, to serve the people—that is what I want to do in life. I want to do this until the day I drop."

Safety of the blood supply: a status report

Effective screening of donated blood for HIV before transfusion is a highly cost-effective strategy to prevent HIV transmission. The risk of HIV transmission through a blood transfusion is greater than 90%, because a large volume of virus can be transfused into a patient from an infected unit of blood (Donegan et al., 1994). According to country reports on UNGASS indicators for the *Declaration of Commitment*, 91 countries report having taken steps to ensure that all donated blood is screened for HIV, and that all screening processes are quality assured. However, 34 countries do not screen all donated blood for HIV in accordance with minimum quality standards, and 67 countries failed to provide information on this indicator (UNGASS, 2008 Indicator 3).

More than one million blood units are still not screened for HIV in accordance with minimum quality standards. More than 20 years after sensitive screening testing systems became available, failure to screen all donated blood for HIV in accordance with minimum quality standards is a matter of grave concern. Additional efforts are also needed to reduce unnecessary blood transfusions.

the national government's widely publicized 2004 commitment to increase prevention access for drug users (Thai AIDS Treatment Action Group & Human Rights Watch, 2007).

Aggressive drug control policies often inhibit use of harm-reduction programmes, underscoring the need for interministerial collaboration and sensitization of law enforcement personnel, to avoid approaches that can deter participation in prevention programmes. In most countries in Eastern Europe and Central Asia, for example, police sometimes make arrests for possession of extremely small amounts of narcotics, potentially discouraging drug users from participating in needle exchange projects (Nashkoev & Sergeev, 2007). According to Georgia's official report to UNAIDS on UNGASS indicators, the national anti-drug policy climate has inhibited efforts to offer even minimal access to detoxification and drug rehabilitation services. In Thailand in 2003, the alleged extrajudicial killings and associated violence, which resulted in the death of more than 2000 suspected drug dealers and users, continues to reverberate

through society. Civil society informants report that injecting drug users are afraid to access harm reduction and other health services. (Thai AIDS treatment Action Group and Human Rights Watch, 2007)

HIV prevention in sexual partnerships

Historically, rigorous evaluation of HIV prevention programmes has primarily concentrated on individuals, rather than couples. This omission is potentially important, because international surveys of young people's sexual behaviour consistently find that sexual partners are a key influence on the particular sexual practices in which young people decide to engage (Marston & King, 2006). At least two types of partnerships appear to justify intensified HIV prevention focus—serodiscordant partnerships and multiple concurrent partnerships. By specifically tailoring programmes to reach people in different kinds of partnerships, HIV prevention efforts may achieve greater impact than programmes that solely aim to affect the behaviours of a single individual.

Serodiscordant partnerships

Where knowledge of HIV status is low and condom use infrequent, the risk of transmission within serodiscordant partnerships can be high, especially when the HIV-infected partner is newly infected but still unaware of the infection. Among serodiscordant heterosexual couples in Uganda, the uninfected partner has an estimated 8% chance of contracting HIV each year (Wawer et al., 2005).

According to Demographic and Health Surveys in five African countries, two thirds of HIV-

infected couples are serodiscordant (de Walque, 2007). Similarly, surveys in East Africa indicate that more than 40% of married individuals with HIV have uninfected spouses (Were et al., 2006). The five-country African survey found that the infected partner in a serodiscordant couple was female in 30%–40% of cases. More than half of HIV-positive women surveyed who are married or cohabiting were not infected by their current partner (de Walque, 2007). In Burkina Faso, nearly 90% of cohabiting couples said they did not use a condom the last time they had sex (de Walque, 2007).

HIV prevention focused on people living with HIV

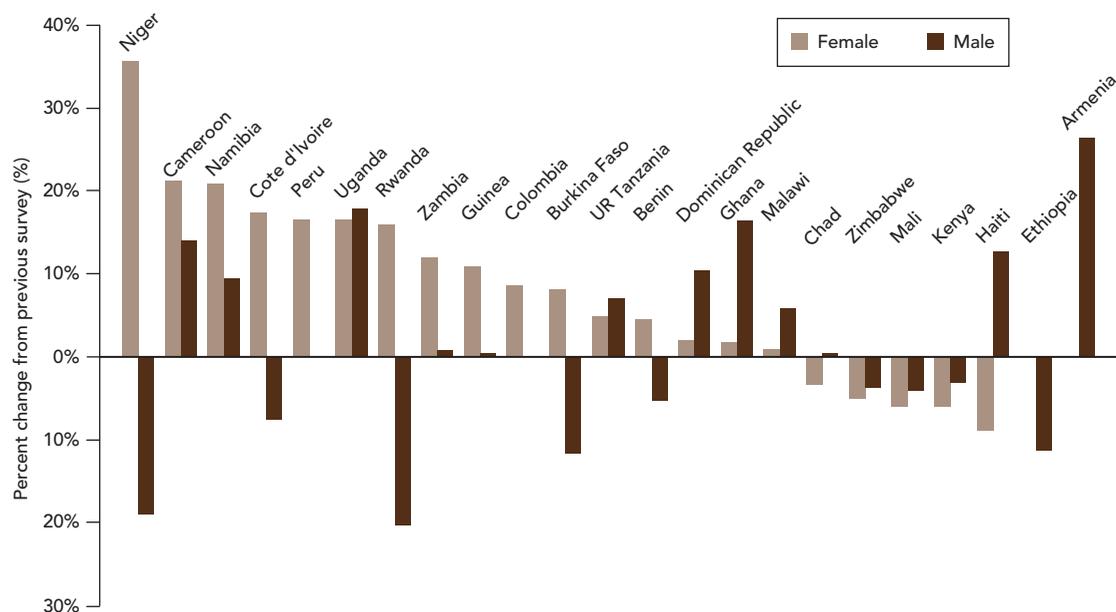
Throughout most of the epidemic, prevention programmes focused primarily on promoting risk reduction among people who were HIV-negative or unaware of their HIV status. Following the advent of combination antiretroviral therapy, which significantly prolongs life and improves quality of life for people living with HIV, there have been increasing calls for enhanced prevention services for people living with HIV (Global HIV Prevention Working Group, 2004). Relatively few studies have examined the effectiveness of prevention programmes specifically focused on people living with HIV, but programmes tailored to the needs of HIV-positive people can reduce risky behaviours (Crepaz et al., 2006).

As this report went to press, WHO was finalizing guidance on HIV prevention and other essential interventions for adults and adolescents living with HIV in resource-limited settings. The WHO guidelines envision counselling and other support for risk reduction, as part of a continuum that includes treatment, care, and support for people living with HIV. Risk-reduction programmes are merely one of many behavioural components of comprehensive HIV prevention and care for people living with HIV, including strategies to promote treatment adherence and to alleviate HIV-related stigma and discrimination. Psychosocial services to promote safe behaviours among HIV-positive people should be sensitive to differences in culture, gender, age, and vulnerabilities. Active engagement of people living with HIV is essential when designing and implementing these services.

In 2008, the Swiss AIDS Commission concluded, following an analysis of four studies, that HIV-positive people with an undetectable viral load following antiretroviral therapy do not risk transmitting HIV to their sexual partners (Vernazza et al., 2008). In response, UNAIDS and WHO emphasized the continuing importance of comprehensive HIV prevention for people living with HIV. UNAIDS and WHO note that the risk of HIV transmission is lower for people with undetectable viral loads, but stress that no study has yet ruled out the risk of HIV transmission.

FIGURE 4.11

Percent change in condom use at last sex, among those with more than one partner in the last 12 months, by sex



Source: MEASURE DHS 2008.

Providing serodiscordant couples with improved prevention and treatment services, including counselling support, access to male and female condoms, antiretroviral therapy, prompt treatment of sexually transmitted infections, and medical male circumcision can help prevent HIV transmission. Knowledge of HIV status is an important starting point. In sub-Saharan Africa, “couples testing” has reduced HIV transmission among serodiscordant couples (Allen et al., 2003). Voluntary testing of couples is likely to be optimally effective when supported by client-centred counselling. Knowledge of HIV status only boosts prevention if it leads to safer sexual behaviour. Yet the fear of stigma and rejection leads many people to delay or avoid disclosing their status to their regular partner. This underscores the importance of counselling and stigma-reduction initiatives in facilitating timely disclosure between partners. Treatment also has a role to play in reducing the risk of HIV transmission within serodiscordant partnerships, as receipt of antiretroviral therapy is associated with an 80% reduction in transmission among serodiscordant couples (Castilla et al., 2005).

Multiple concurrent partnerships

Although there are only limited data, the potential for concurrent partnerships to accelerate HIV transmission is especially pronounced where there is high background HIV prevalence and/or high rates of population mobility (Cassels, Clark & Morris, 2008). These factors are common in southern Africa, where concurrency has been cited as a potential reason for the subregion’s uniquely high levels of HIV infection (see Chapter 2).

According to a national survey of more than 7000 people (ages 15–65) in South Africa, pervasive social norms encourage both concurrency and a rapid turnover in sex partners, with little peer support for commitment to a single partner. Significantly, only 21% of survey respondents said “sticking to one partner and being faithful” could prevent HIV transmission, and only 5% identified reducing the number of sex partners as a sound HIV prevention strategy (CADRE et al., 2007).

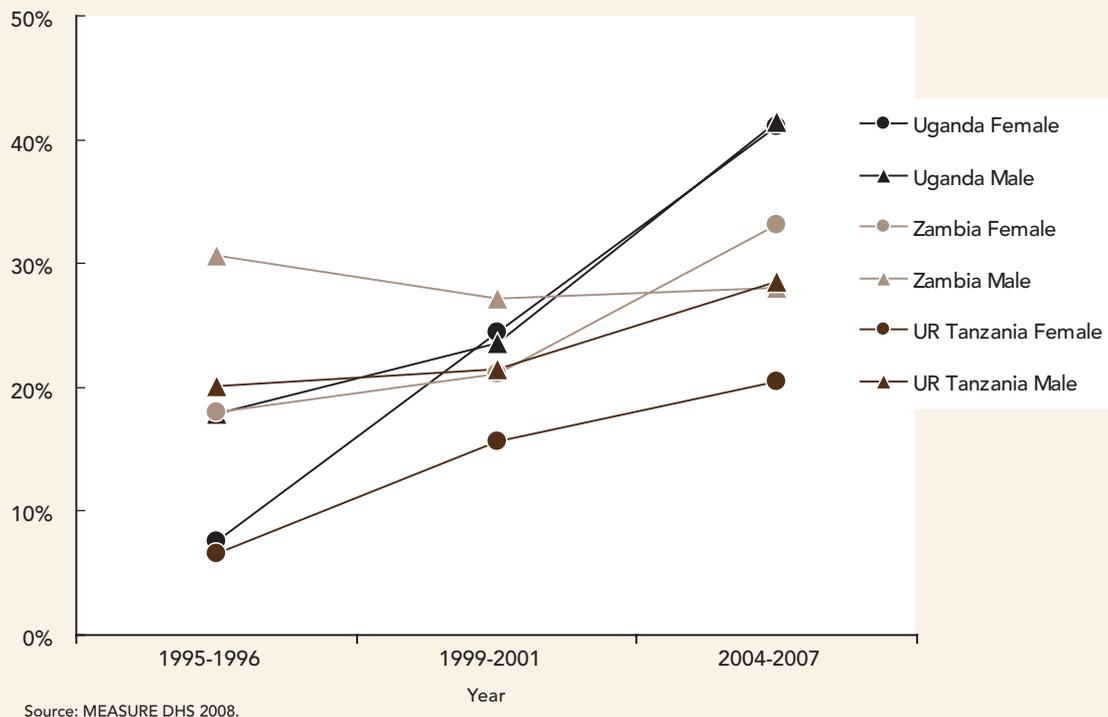
Few studies have examined strategies to alter attitudes and practices regarding partnership concurrency. However, the HIV prevention

Increasing condom use among people with multiple partners

Consistent condom use among those who have multiple partners (defined as more than one partner in the preceding 12 months) appears to be increasing, particularly in the areas most affected by the epidemic. In the most recent round of Demographic and Health Surveys, an average of 27% [2%–66%] of women (ages 15–49) and 33% [7%–75%] of men (ages 15–49) who had more than one partner in the last year reported the use of a condom the last time they had sex. In 21 countries where this information has been collected over at least two time points, condom use by women increased in 16 countries, and condom use by men increased in 12 countries (Figure 4.11). However, as Figure 4.12 shows, advances in condom use cannot be taken for granted, because condom use has declined in a number of countries.

FIGURE 4.12

Condom use at last sex, among those with more than one partner in the last 12 months, in three high-burden countries



literature is replete with examples of radical shifts in sexual behaviours and the establishment of new population-based sexual norms (Auerbach, Hayes & Kandathil, 2006). Such dramatic behavioural shifts have often followed high-level campaigns aimed at altering sexual norms and increasing awareness of HIV-related risks. Prevention efforts, especially in hyperendemic settings, should

include community-level strategies to educate people regarding the risk of multiple partnerships and to forge new social norms that encourage avoidance of concurrent relationships.

In 2006, the Southern African Development Community’s Think Tank on HIV Prevention recommended that addressing multiple and

concurrent sexual partnerships should be the top regional HIV prevention priority (SADC, 2006). Regional efforts to better address concurrent partnerships in HIV prevention responses are being accelerated. After reviewing formative research at the end of 2007, the nine countries involved in a regional programme organized by Soul City, a health promotion and social change project, recommended initiation of a regional HIV prevention campaign focused on multiple concurrent partnerships. Soul City participants concluded that the campaign should address communication between children and parents, and between partners; gender disparities (i.e. male domination and women's empowerment); and socialization and peer pressure.

Tailored HIV prevention for heterosexual men

Influencing male sexual behaviour is essential to reduce the number of new HIV infections. Not only do men account for half of HIV infections worldwide, but encouraging men to avoid risky sexual behaviours plays a vital role in preventing new HIV infections in women.

While various prevention models have been developed to provide focused prevention support for men who have sex with men, few HIV prevention programmes have been specifically designed to take into account the values heterosexual men attach to sex, the pleasures they derive from it, and the social pressures associated with sex. A cardinal rule of HIV prevention is that programmes must be culturally relevant to the target population, but this maxim has not been rigorously followed among programmes that ostensibly aim to affect men's behaviours.

Devoting greater attention to the prevention needs of heterosexual men should in no way suggest a diminution of effort with respect to women and girls. On the contrary, effective prevention programmes for men complement initiatives that aim to empower women and girls to prevent HIV transmission. The lack of female-initiated prevention methods underscores the

importance of promoting safer, responsible sexual behaviour among men.

HIV prevention efforts for heterosexual men aim to motivate men and women to talk more openly about sex, sexuality, drug use, and HIV. Effective HIV prevention also encourages men to take greater care of themselves, and their partners and families. As early as 2001, UNAIDS documented 12 different "best practice" models of prevention programming for men (UNAIDS, 2001). However, such projects remain localized and have not been brought to scale (ICRW & Instituto Promundo, 2007; WHO & Instituto Promundo, 2007).

Programmes for men and boys that openly address gender power imbalances can help transform gender norms (see Chapter 3). In many countries, prevailing gender norms simultaneously render women vulnerable to male power, while encouraging men to place women at risk. For example, concepts of masculinity that reward multiple partners may place considerable pressure on men to behave in particular ways. As a result of such dynamics, both men and women are at heightened risk of HIV infection.

Global mobilization to eradicate mother-to-child transmission

In the absence of any intervention, the risk of mother-to-child-transmission of HIV is about 15%–30% if the mother does not breastfeed the child. With prolonged breastfeeding, the likelihood of infection can be as high as 45% (De Cock, 2000). Timely administration of a short course of antiretroviral drugs significantly reduces the risk of HIV transmission (Guay et al., 1999).

No validated chemoprophylactic regimen yet exists to reduce the risk of HIV transmission through breastfeeding, although trials are under way to evaluate different experimental approaches. Until a prophylactic regimen is developed, it appears that exclusive breastfeeding and early weaning help minimize the risk of transmission to the newborn in settings where

Integrating medical male circumcision in national HIV prevention efforts

Clinical trials in Kenya, South Africa, and Uganda demonstrate that medical male circumcision reduces the risk (by about 60%) that a woman living with HIV will transmit the virus to her male sexual partner (Auvert et al., 2005; Bailey et al., 2007; Gray et al., 2007). Early results indicating an HIV prevention benefit from circumcision reportedly increased demand for circumcision in some parts of Africa (WHO, 2006a).

Much remains unknown about the potential role of medical male circumcision in slowing the rate of new HIV infections at the population level. Medical male circumcision has other benefits in terms of decreased genital ulcer disease and human papilloma virus (the causative agent of cervical cancer), but male circumcision is unlikely to have a directly protective effect against HIV for women during sexual intercourse. The degree to which the benefits seen under controlled trial conditions can be replicated in everyday life is currently being assessed during programme roll out, particularly at the sites of the three trials. Some observational studies in men who have sex with men have suggested a protective effect from circumcision (see Buchbinder et al., 2005) but other studies have not (Millett & Peterson, 2007; Templeton & Hogben, 2007). Men in the Merck adenovirus vaccine trial were men who have sex with men, and those who were circumcised had the lowest risk of HIV acquisition (Robertson, 2008).

Experts convened by UNAIDS and WHO in March 2007 determined that the research results on the benefits of medical male circumcision for heterosexual men were compelling. The consultation endorsed male circumcision as an efficacious prevention intervention, noting that its impact was likely to be greatest in settings where the prevalence of heterosexually acquired HIV is high, male circumcision levels are low, and the populations at risk of HIV are substantial (UNAIDS & WHO, 2007). A number of countries are implementing male circumcision services as a component of comprehensive HIV prevention, with technical support from UN partners and others through the Second UN Work Plan on Male Circumcision.

Since 2005, a number of modelling and cost-effectiveness studies have estimated the number of infections that could be averted by scaling up adult male circumcision programmes in sub-Saharan Africa (Williams et al., 2006; Hallett et al., 2008). These exercises have determined that male circumcision is a highly cost-effective approach to preventing new HIV infections in high-prevalence settings, with projected savings of future antiretroviral treatment costs greatly exceeding the cost of circumcision programmes (Kahn, Marseille & Auvert, 2006).

A major challenge in bringing circumcision to scale is ensuring that such procedures are performed safely. Historically, many circumcisions in Africa have been performed outside medical settings, often by traditional health practitioners. Infections and other complications from the procedure are common (Schoofs, 2007). There is also the danger that HIV itself could be transmitted through circumcision procedures that lack



infection control. However, there is little direct evidence to this effect, and traditional initiation practices are occasions for transmitting norms and values around masculinity. Such practices may therefore be important opportunities for HIV prevention education (Peltzer et al., 2007). Provider training programmes are now under way to ensure acceptable safety and quality of male circumcision procedures (Schoofs, 2007).

Due to the risk that circumcised men and their partners might erroneously conclude that the procedure obviates the need for other protective measures, roll out of medical male circumcision should be accompanied by strengthened HIV prevention efforts. In particular, public education campaigns should emphasize that circumcision offers only partial protection to men and that HIV transmission can still occur during sexual intercourse even following circumcision. In addition, health care providers must carefully counsel men who receive the procedure, and their partners, to refrain from sexual intercourse until circumcision wounds have completely healed.

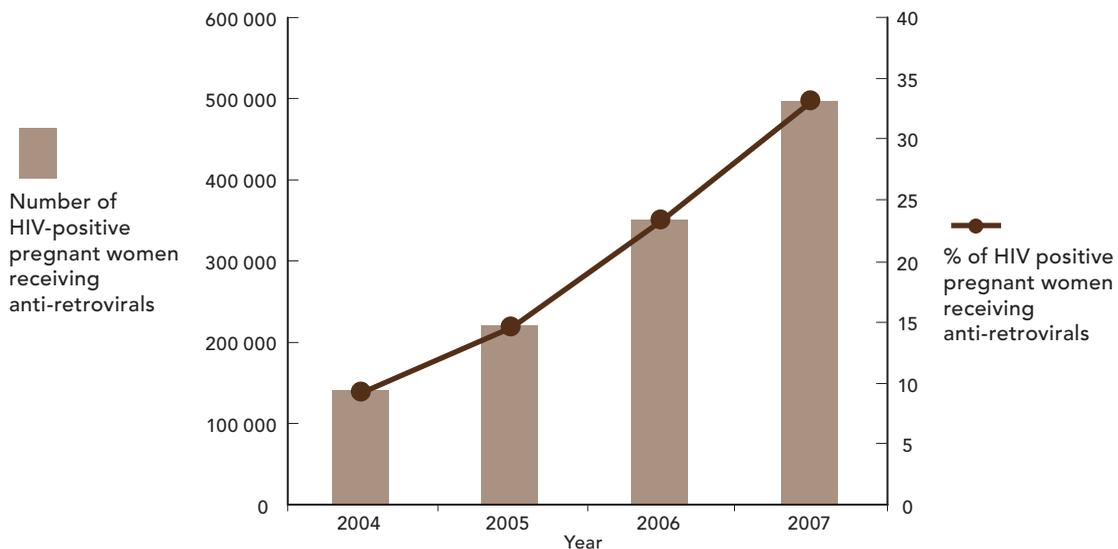
no safe alternative, infant-feeding methods are available (Kuhn et al., 2007).

In high-income countries, high coverage of services for preventing mother-to-child transmission has maintained HIV transmission rates below 19. In Western Europe, for example, only 191 new HIV diagnoses in children were attributed to mother-to-child transmission in 2006

(EuroHIV, 2007). Similar achievements are feasible in resource-poor settings, as demonstrated by a study in Abidjan, Côte d'Ivoire, which showed that mother-to-child transmission can be limited to below 6% when necessary services were made available (Tonwe-Gold, 2007). In Botswana, where the national government has made prevention of mother-to-child transmission a major priority,

FIGURE 4.13

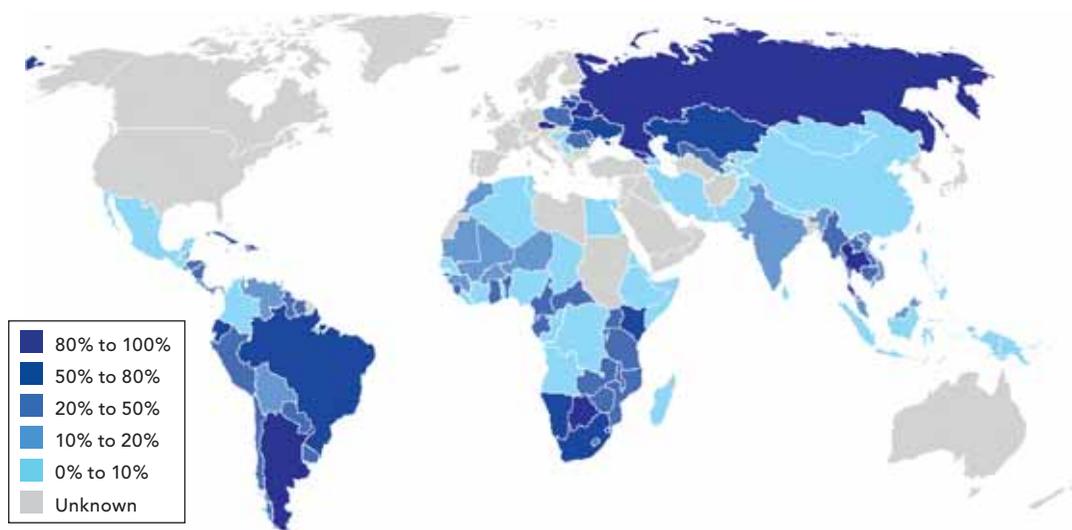
Number and percentage of HIV-positive pregnant women receiving antiretroviral prophylaxis, 2004–2007



Source: UNAIDS, UNICEF & WHO, 2008; data provided by countries.

FIGURE 4.14

Percentage of HIV-positive pregnant women receiving antiretroviral prophylaxis, 2007



Source: UNAIDS, UNICEF & WHO, 2008; data provided by countries.

the rate at which children born to HIV-positive mothers contract HIV has dropped to 4% (Donnelly, 2007).

Government and nongovernmental informants in 63% of countries with generalized epidemics report having implemented prevention of mother-to-child transmission in most or all districts in need (UNGASS Country Progress Reports 2008), actual programme coverage does not reflect such a high degree of access. Epidemiological estimates suggest that coverage for antiretroviral prophylaxis to HIV-positive pregnant women for prevention of mother-to-child transmission in low- and middle-income countries increased from 9% in 2004 to 33% in 2007 (Figure 4.13). These figures are based on revised epidemiological estimates of global and national HIV prevalence (see Chapter 2), and a data reconciliation process between UNAIDS, WHO and UNICEF, and countries reporting on UNGASS indicator 5. Broken links in the continuum of care for prevention of mother-to-child transmission appear to be contributing to reduced coverage. For example, estimates suggest that only 18% of all HIV-positive pregnant women receive testing in antenatal care clinics. However, of women who

received testing, 80% of those testing positive received antiretroviral prophylaxis. This suggests that lack of testing may be hindering efforts to increase prevention coverage for pregnant women in need (UNICEF, 2008).

Several countries have made marked progress in expanding coverage for HIV-positive pregnant women in recent years. Between 2004 and 2006, coverage of prevention of mother-to-child transmission increased from 12% to 64% [53%–80%] in Namibia, from 5% to 67% [60%–74%] in Swaziland, and from 15% to 57% [49%–69%] in South Africa. As Figure 4.14 indicates, national progress in scaling up services to prevent mother-to-child transmission is highly variable.

Numerous factors impede expansion of services to prevent mother-to-child transmission. For example, the package of prevention services available to pregnant women is designed for delivery in health-care settings, yet use of antenatal care varies widely within and among countries, and is typically much lower in rural areas (Say & Rain, 2007). In Papua New Guinea,

where most women give birth at home, coverage of services to prevent mother-to-child transmission is below 5%. Globally, one in six pregnant women in low- and middle-income countries receive no antenatal care before giving birth (UNICEF, 2008). In the 30 African countries with the lowest human development scores, most births are not attended by a skilled health professional, with the exception of Zimbabwe (UNDP, 2007). Even in antenatal settings where HIV prevention uptake is high, such as Bangkok, surveys indicate that many women fail to use the services because of inconsistent antenatal care, fear of stigmatization, and concerns regarding disclosure of their HIV status (Teeraratkul, 2005).

According to studies in Côte d'Ivoire and South Africa, recommended approaches to breastfeeding are not being widely followed (Becquet, 2005; Doherty, et al., 2007). In addition, many infants born to HIV-positive mothers do not receive follow-up care, impeding timely diagnosis of HIV infection and prompt initiation of antiretroviral therapy. In Malawi, for example, only 19% of infants born to HIV-positive mothers were tested for HIV within 12 months following delivery (Manzi, et al., 2005).

In the immediate future, countries, donors, and other partners should build on recent progress to make services that are broadly accessible sufficiently available in low- and middle-income countries to replicate achievements of high-income settings. Such measures will save lives and reduce future treatment costs.

Implementation of provider-initiated HIV testing in antenatal and other settings is already increasing programme uptake. In some clinics, pregnant women who are unlikely to return to the clinic for delivery are provided with doses of nevirapine for themselves and their infants (Stripipatana, 2007). Other clinics are working to engage male partners and fathers. Programmes in Ethiopia and South Africa have mobilized HIV-positive mothers who have experience of services to prevent mother-to-child transmission to provide education, information, and support

for pregnant women. A recent study in selected maternity hospitals in St. Petersburg, the Russian Federation, found that the point-of-care offer of rapid HIV testing resulted in identification of a significant number of previously undiagnosed HIV-positive women and the delivery of anti-retroviral prophylaxis to 98% of HIV-exposed infants (Kissin et al., 2008).

Sustaining HIV prevention for the long-term

One of the great practical challenges for HIV prevention is to sustain favourable changes in sexual and drug-using behaviours over the long-term. HIV prevention is not a 'one-shot' intervention that confers lifetime immunity against infection. Rather, risk reduction is a lifelong endeavour that requires support, reinforcement, and self-monitoring.

Recent research suggests that, while individuals often significantly reduce sexual risk behaviours in the year following intensive, repeated individual or small-group interventions, they frequently fail to sustain safer behaviours for longer periods. For example, trials of a 10-week individualized counselling intervention for men who have sex with men found that the intervention produced significant short-term behavioural benefits, and reduced HIV incidence. After three years, however, recipients of the intervention did not differ significantly from the control group with respect to HIV incidence, suggesting that the initial favourable impact was not sustained (Coates et al., 2008).

This pattern is also apparent outside trial conditions, where early national prevention success has proven difficult to sustain over the long-term. In Uganda, the African country that has been most successful in lowering HIV prevalence, surveys have documented an increase in risky sexual behaviours in recent years (UNAIDS, 2007b). Likewise, several high-income countries that saw sharp reductions in HIV incidence in the 1980s following heavy investments in focused HIV prevention

programmes are now witnessing significant increases in risky sexual behaviour and new HIV infections (EuroHIV, 2007; Osmond et al., 2007).

People find it difficult to sustain behaviour change for a number of reasons. Prevention efforts are often short-term, and individuals may return to early behaviour patterns if prevention initiatives are not maintained or reinforced. Some who adopt safer behaviours may experience ‘prevention fatigue’ and eventually revert to previous behaviours that are the norm in their community. In addition, environmental changes may alter individual perceptions of risk. In high-income countries, for example, improved treatment prospects have rendered the disease less serious to some, apparently prompting an increase in sexual behaviours that increase risk of exposure to HIV (Suarez et al., 2001).

Like HIV treatment, HIV prevention is for life. To ensure their continued relevance, prevention strategies should be strengthened and revised as the epidemic evolves and underlying circumstances change. Prevention research efforts should specifically concentrate on strategies to prevent environmental changes (e.g. introduction of treatments or new prevention technologies) from undermining existing patterns of adherence to safer behaviours.

To achieve and sustain success, HIV prevention efforts must reach the required intensity and be delivered in a high-quality, evidence-informed manner. Until recently, the issues of quality and intensity seemed somewhat academic in most prevention settings, given that coverage of most essential HIV prevention activities was extremely low. However, as this report demonstrates, that picture is beginning to change, with coverage increasing for both general population initiatives and programmes focused on populations most at risk. With greater coverage of prevention programmes, performance indicators will also have to keep pace by incorporating measures of quality and intensity.

Financing and national political support for HIV prevention has increased, but use of prevention services remains suboptimal, underscoring the need to stimulate greater demand for HIV prevention. The epidemic’s history suggests that government programmes or donor policies alone are unlikely to create demand. In diverse countries in various regions, the emergence of mass popular demand for HIV prevention has required the genuine and long-lasting leadership and engagement of effective communities (Piot, 2008). Continued attention is needed to bring critical prevention services to scale, and greater investments are needed in social mobilization strategies. In Ethiopia, for example, the national HIV programme has prioritized mobilizing society from the local level upwards, to accelerate progress towards universal access to HIV prevention, treatment, care, and support.

When greater demand for prevention services is generated, complementary efforts will be required to build the local and national capacities to sustain high-quality prevention efforts into the future. Improved organizational capacity and management skills will be needed at the local level—together with increased analytical capacity at national and subnational levels—to collect, assess, and respond to emerging information on the epidemic. Such measures will ensure sufficient capacity to implement and sustain existing prevention strategies, and enable future prevention approaches and technologies to be rapidly introduced and scaled-up.

As epidemics evolve, policy-makers often find it tempting to short-change prevention efforts, assuming that earlier investments have sufficiently addressed the problem. Experience in the United States is illustrative. At the beginning of the epidemic, in the early 1980s, HIV prevention accounted for 25% of all HIV-related spending. Spending on prevention had fallen to 13% by 1990. By 2006, the 25th year since AIDS was first recognized, only 4 of every 100

dollars the United States Government spent on HIV were directed toward preventing new HIV infections (Henry J Kaiser Family Foundation, 2006).

Sustaining HIV prevention requires national leadership that recognizes both the cost-effectiveness and the humanitarian necessity of investing in prevention, and understands the long-term nature of the threat. Efforts to persuade political leaders to invest in HIV prevention have suffered because there is no natural constituency for prevention. Failure to include people living with HIV and those at

high risk of exposure to HIV in the design and implementation of prevention programmes has also weakened such programmes.

In a number of countries, the search for new prevention technologies has generated significant activism and community organization, partly because tens of thousands of people worldwide have been enrolled in prevention trials in recent years. A similar mobilization, but on a much larger scale, is required to demand immediate implementation of the evidence-informed tools that already exist to prevent new infections.

Evidence for action

Are the right actions being taken?

- Nearly all countries (95%) have national policies to provide free access to HIV prevention services.
- Most national governments (89%) report having integrated HIV into secondary school curricula, but far fewer include HIV education in the primary school curriculum (65%) or have an HIV education strategy for out-of-school young people (64%).
- Most national governments (92%) have a policy or strategy for HIV prevention for populations most at risk.

Are the right actions being undertaken in the right manner?

- HIV prevention programmes often fail to provide accurate and comprehensive information to young people. According to nongovernmental informants, 28% of countries have laws, regulations, or policies that present obstacles to effective HIV-related services for young people.
- Nongovernmental informants in 63% of countries have laws, regulations or policies in place that present obstacles to effective HIV-related services for populations most at risk.

Have these actions been sufficiently scaled up to make a difference?

- Survey data from 64 countries indicate that 40% of males and 36% of females (ages 15–24) have accurate and comprehensive knowledge about HIV prevention—far short of the 95% target in the *Declaration of Commitment*.
- The percentage of pregnant women living with HIV who received antiretroviral treatment to prevent mother-to-child transmission increased from 9% in 2004 to 33% in 2007.
- Among the few countries reporting on populations most at risk, 60% of sex workers, 46% of injecting drug users, and 40% of men who have sex with men were reached by HIV prevention programmes in 2007.

