HIV PREVENTION

KEY FINDINGS

- The global incidence of HIV infection declined by 19% between 1999 (the year of peak incidence) and 2009; the decline exceeded 25% in 33 countries, including 22 countries in sub-Saharan Africa.
- In 2009, 370 000 [230 000–510 000] children were infected with HIV through mother-to-child transmission. This is a drop of 24% from five years earlier. However, rapid expansion of delivery of effective advances in preventing mother-to-child transmission is being held back by inadequate access to antenatal and postnatal services.
- HIV prevention investments are about 22% of all spending in 106 low- and middle-income countries.
- Globally, comprehensive and correct knowledge about HIV among both young men and young women has increased slightly since 2008—but at only 34%, the number of young people with this comprehensive knowledge is barely one third of the UNGASS target of 95%.
- Trend analysis shows a general decline in the percentage of people who have had more than one sexual partner in the past year in sub-Saharan Africa.
- Condom availability in places of need is increasing significantly, with 25.8 million female condoms provided through international and nongovernmental funding sources in 2009. Condom distribution increased by 10 million between 2008 and 2009.
- Recent promising results of a tenofovir-based gel have raised hopes that an additional effective female-initiated prevention option may soon become viable.

» **New HIV infections are declining globally**

Dedicated efforts to promote and support combination HIV prevention are producing clear and impressive results. The incidence of HIV infection declined by 19% between 1999 and 2009 globally; the decline exceeded 25% in 33 countries, including 22 countries in sub-Saharan Africa. But while parts of the world experienced significant and encouraging decreases in HIV incidence between 2001 and 2009, during the same period the incidence increased by more than 25% in seven countries, including five in Eastern Europe and Central Asia. And HIV incidence remained stable in 23 countries between 2001 and 2009. Behaviour change is the most important factor accounting for these encouraging declines in new HIV infections in many countries. Among young people, noteworthy drops in HIV incidence have been associated with a significant positive trend (for either or both sexes) in important behaviour indicators, including increased condom use, delayed sexual debut, and reductions in multiple partnerships (1).

Correct and consistent condom use has been found to be greater than 90% effective in preventing transmission of HIV and other sexually transmitted infections. Eleven countries reported levels of 75% or greater among either men or women for condom use at last higher-risk sex. Major successes in HIV prevention have been achieved in concentrated epidemic countries that have devoted substantial programming efforts and funds to prevention among people at higher risk of exposure to HIV. Too often, however, prevention responses still do not focus on these key populations.

In 2009, 370 000 [230 000–510 000] children were infected with HIV through mother-to-child transmission (down from 500 000 [320 000–680 000] in 2001). Although this is an important achievement for the health of both mothers and infants, further rapid expansion in delivering advances in preventing mother-to-child transmission is being held back by inadequate access to antenatal and postnatal services.

Focusing HIV-prevention investments appropriately

HIV prevention investments are about 22% of all spending in 106 low- and middle-income countries. Even with existing resources, one notable challenge to strengthening the effects of the response to the epidemic has been the reluctance of planners and implementers to focus prevention efforts where they produce maximum impact. HIV prevention investments do not always follow epidemic patterns. In Eastern Europe and Central Asia, areas experiencing

primarily concentrated epidemics, 89% of HIV-prevention investments in these regions are not focused on people at higher risk, such as people who inject drugs, sex workers and their clients, and men who have sex with men. A notable proportion of new infections are found among these population groups, even in countries with generalized epidemics, yet prevention spending often ignores this reality. For example, the proportion of HIV prevention expenditure devoted to programmes for sex workers and their clients, men who have sex with men and people who inject drugs is only 1.7% in Burkina Faso, 0.4% in Côte d'Ivoire and 0.24% in Ghana, yet the percentage of new infections in these population groups is 30%, 28% and 43%, respectively (2).

In both Kenya and Mozambique, between one quarter and one third of new HIV infections occur among people who inject drugs, men who have sex with men, and sex workers and their clients (3). The proportions of Kenya's and Mozambique's total AIDS spending directed to HIV prevention among these key populations are 0.35% and 0.25% respectively, and almost all is from international sources. Spending directed specifically to support these populations in their response to HIV is only one hundredth of their respective share of the national epidemic (4).

Similarly, investment focused on young people often does not achieve an appropriate balance between the need for continued investment in HIV prevention among all young people and the need to pay particular attention to the special needs of young people at higher risk from drug use, sex work, or unprotected sex between men. For example in Asia, 90% of resources for young people are spent on low-risk youth, who represent just 5% of the people becoming infected with HIV (5).

Combination HIV prevention efforts are bearing results

Where key behavioural indicators related to the risk of HIV infection—condom use, sex before age 15 years (early sexual debut) and multiple partnerships—all have positive trends, the incidence of HIV infection is markedly reduced (1).

Evidence that combination HIV prevention efforts that address the most pressing HIV risks have decisively changed the course of the epidemic continues to accumulate. In Namibia, improvements across key knowledge and behaviour indicators—including comprehensive knowledge, age of sexual debut, engagement in higher-risk sex, and condom use among both males and females aged 15–24 years—were associated with declines in HIV prevalence among young people, from slightly more than 10% in 2007 to about 5% in 2009.

370K

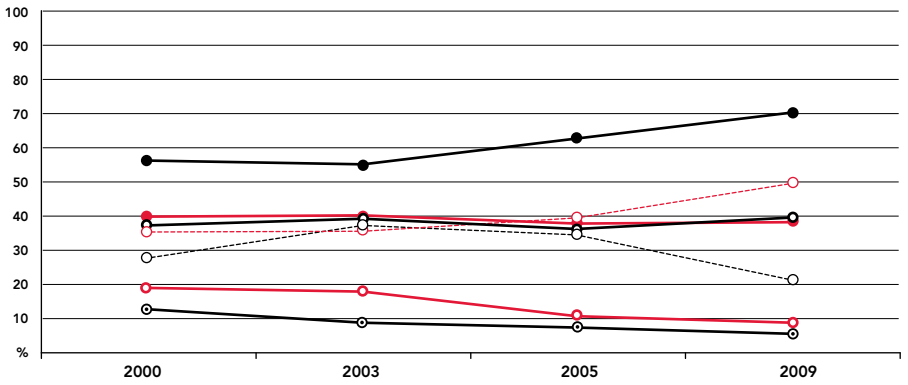
In 2009, an estimated 370 000 children were infected with HIV through mother-to-child transmission (down from 500 000 in 2001).

Figure 3.1

HIV prevention in Zambia, 2000-2009

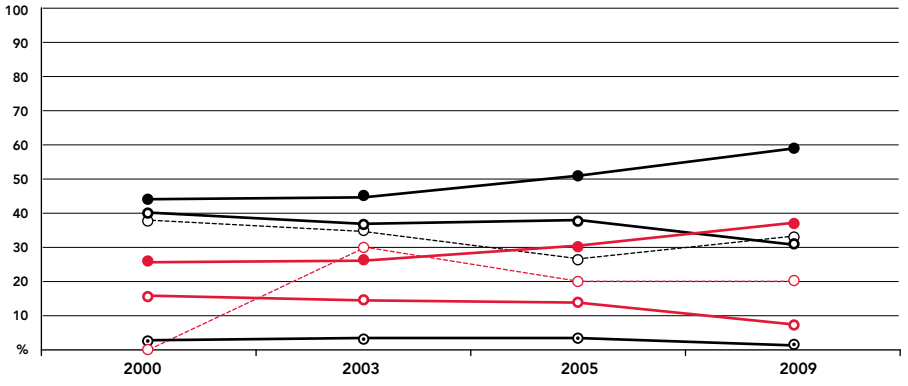
Source: Zambia Sexual Behavior Survey.

Males 15–24 years



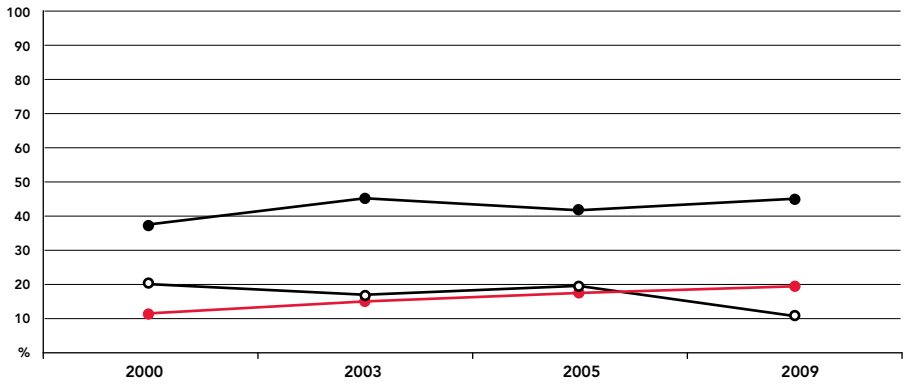
- Young people never having had sex (15-19 years)
- Young people never having had sex (15-24 years)
- Never married respondents who had sex in the last 12 months who used a condom with their last sexual partner
- Condom use at last sex with a non-marital, non-cohabiting sexual partner
- Condom use at last sex, among respondents who had >1 partner in the last year
- Proportion of respondents who had had sex before age 15
- Proportion of respondents that had >1 partner in past year

Females 15–24 years



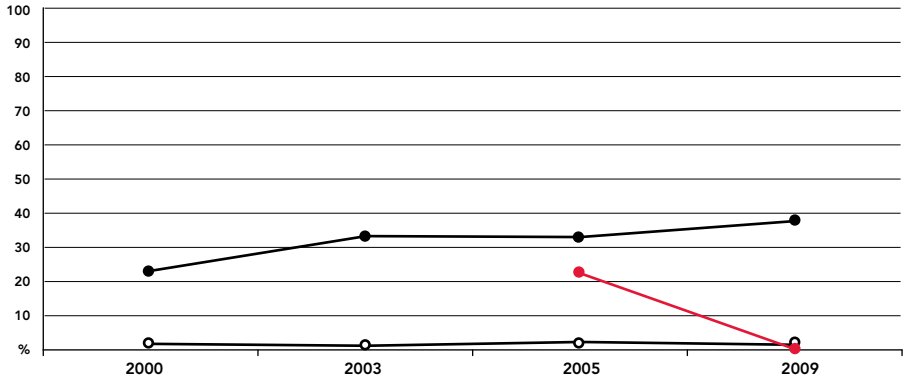
- Young people never having had sex (15-19 years)
- Young people never having had sex (15-24 years)
- Never married respondents who had sex in the last 12 months who used a condom with their last sexual partner
- Condom use at last sex with a non-marital, non-cohabiting sexual partner
- Condom use at last sex, among respondents who had >1 partner in the last year
- Proportion of respondents who had had sex before age 15
- Proportion of respondents that had >1 partner in past year

Males 25–49 years



- Condom use at last sex with a non-marital, non-cohabiting sexual partner
- Condom use at last sex among respondents who had >1 partner in the last year
- Proportion of respondents that had >1 partner in past year

Females 25–49 years



- Condom use at last sex with a non-marital, non-cohabiting sexual partner
- Condom use at last sex among respondents who had >1 partner in the last year
- Proportion of respondents that had >1 partner in past year

[1] Limited data (nine of 41 countries) are available from Western and Central Europe, and to a lesser extent, the Middle East and North Africa (eight of 20 countries). Sub-Saharan Africa is the region with the most complete data on comprehensive knowledge of HIV, largely due to the Demographic and Health Surveys that have been undertaken in 85 countries, with major support from the United States Government together with participating countries and other funders.

Between 2001 and 2009, overall HIV incidence in Namibia decreased by more than 25%. Similar trends were also recorded in Zimbabwe. But when different types of behaviour change vary—for example, when condom use increases and multiple partnerships do also, or vice versa—the effects of changes in reducing incidence are less easy to identify clearly.

In Zambia, HIV incidence declined by more than 25% between 2001 and 2009. The country has successfully increased both the age of sexual debut and abstinence among young people (6). The number of both young and older adults who have multiple partners has also declined. However, the proportion of men and women 15–24 years old with more than one partner in the past year who used a condom at last sex has also markedly declined.

Although fewer young men and women in Zambia are sexually active and fewer have had more than one partner in the past 12 months, condom use within this population has decreased rather than increased. For maximum effect, all routes to reducing the risk of sexual exposure to HIV must be pursued simultaneously (Figure 3.1).

Behaviour change and increased comprehensive correct knowledge reduces HIV incidence and prevalence in most countries with high HIV prevalence

Globally, comprehensive and correct knowledge about HIV among both young men and young women has increased slightly since 2003—but at only 34%, the number of young people with this comprehensive knowledge is only slightly greater than one third of the UNGASS target of 95%.[1] Ten countries have achieved comprehensive correct knowledge levels above 60% for either men or women 15–24 years old (Figure 3.2).

Opportunities to improve HIV prevention knowledge and behaviour still abound. Less than half of young people living in 15 of the 25 countries with the highest HIV prevalence can correctly answer five basic questions about HIV and its transmission (these include Botswana, Burundi, Cameroon, Central African Republic, Chad, Congo, Cote d'Ivoire, Guinea-Bissau, Kenya, Malawi, Nigeria, South Africa, Togo, United Republic of Tanzania and Zambia). Young people ages 15–24 years old showed gradually improving knowledge about HIV in these 25 countries but still fall short of the global targets for comprehensive knowledge set in 2001.

Complex, changing, and multiple relationships

Understanding the varieties and patterns of sexual relationships is a necessary element in implementing effective prevention programmes. In most countries, a minority of males and females report having had sex with more than one partner in the last year. Trend analysis shows a general decline in the percentage of people who had more than one partner in the past year in sub-Saharan Africa, with some exceptions, such as Botswana, Congo, South Africa and Uganda. In Uganda, men older than 25 years are increasingly

Figure 3.2

Young people's knowledge of HIV

Countries with comprehensive correct knowledge of HIV exceeding 60% among people 15–24 years old.

Source: Country Progress Reports 2010.

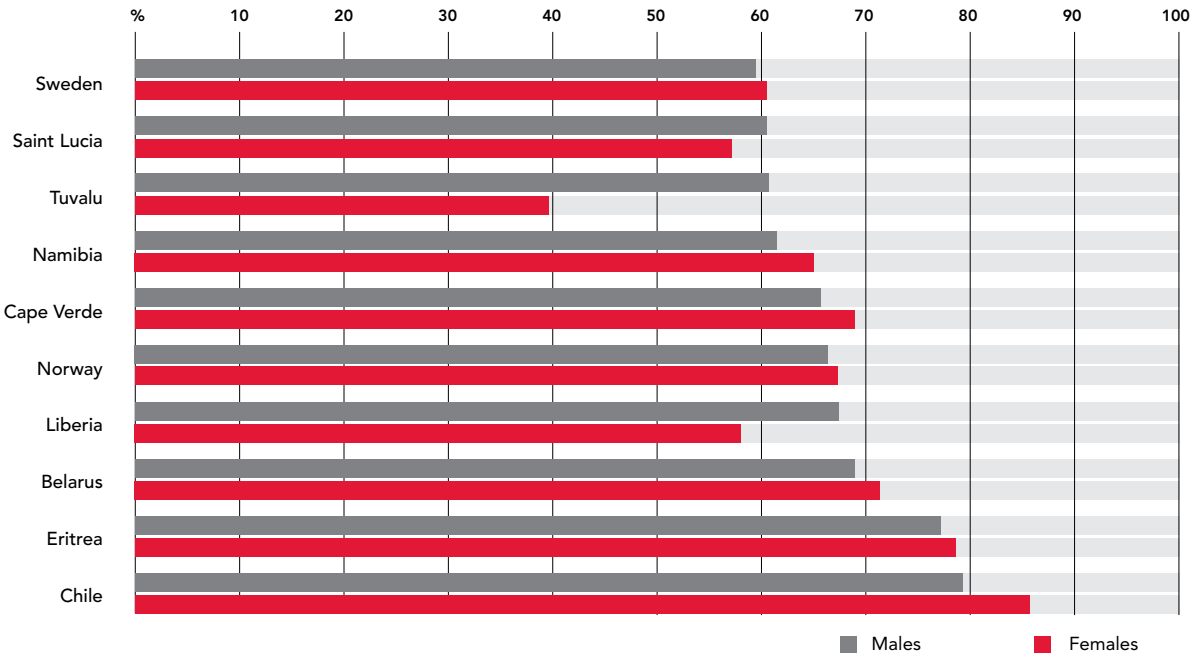
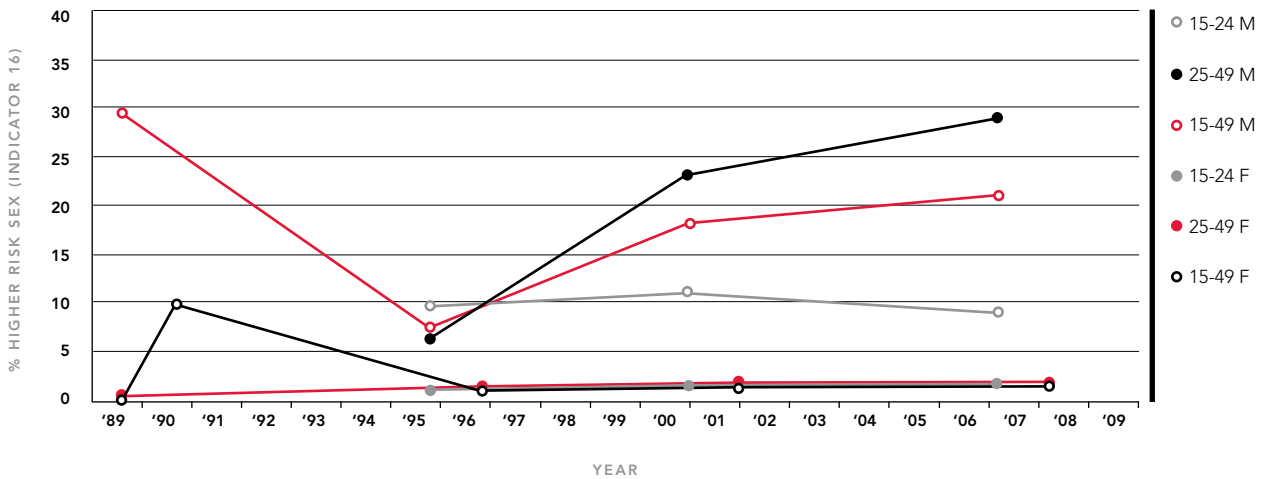


Figure 3.3

Multiple sexual partners in the past year, Uganda

Percentage of the population (ages 15–49 years old) that have had multiple sex partners in the past year in Uganda, by sex and age group, 1989–2006.

Source: Demographic and Health Surveys and other population-based behavioural survey data.



reporting multiple partners, while the number of women reporting sex with more than one partner has remained fairly stable (Figure 3.3).

In 59 of the 93 countries reporting these data—including 18 of the 25 countries with the highest prevalence of HIV—less than 25% of men reported sex with more than one partner in the last 12 months. A substantially larger number—84 countries—reported that less than 25% of women had sex with more than one partner in the past 12 months. On average, the proportion of men who reported having had sex with more than one partner in the past year was 16 percentage points higher than among women. Ten countries reported that 26% to 50% of men had more than one partner in the past year; two countries reported that 26% to 50% of women did so.

75%

Level of condom use in risky sex by men and women reported by 11 countries

Condom availability and condom uptake is improving

Eleven countries reported levels of 75% or greater among either men or women for condom use at last higher-risk sex—these countries include Botswana, India and South Africa. Country progress reports show that the median percentage of condom use at last sex for males with more than one partner in the past 12 months is 48% versus 38% for women. Of the 83 countries for which data are available, 32 reported 60% or greater condom use at last sex among the men who have had sex with more than one partner in the past 12 months versus 20 of 80 reporting countries among women.

Trend data from Demographic and Health Surveys show that condom use is increasing in sub-Saharan Africa. Botswana reported that at least 80% of men used a condom at last higher-risk sex; no countries reported this level of condom use for women. In contrast, 14 countries report condom use rates of 20% or less at last sex for those with more than one partner in the past year among either males or females, including the high-prevalence countries of the Democratic Republic of the Congo, Ethiopia, Malawi, Rwanda, Uganda and the United Republic of Tanzania.

In Asia, women in Cambodia, Myanmar and Thailand and men in Timor-Leste reported lower than 25% condom use at last higher-risk sex. The other countries in Asia showed higher rates of condom use at last higher-risk sex or did not report on this indicator. Of the countries reporting this indicator in Eastern Europe and Central Asia, most reported between 51% and 80% using a condom at last higher-risk sex.

Reports of condom use by sex workers at last sex with a client are encouraging. Of 86 countries providing data, 26 reported that 90% or more of sex workers report having used a condom with their last client, with another 13 countries reporting condom use levels from 80% to 90%. At the same time, 47 countries—more than half of those reporting—report rates of condom use by sex workers with their last client below 80%, including less than 60% in 17 countries. Greater condom promotion efforts are needed to increase the levels of usage of this technology for protection against HIV by sex workers and their clients.
The availability of female condoms in places of need is significantly increasing,

Ukraine—significant strides in protecting people who use drugs from HIV infection

For many years, Ukraine has had the most severe HIV epidemic among people who inject drugs in Eastern Europe and Central Asia. However, four years of comprehensive, sustained funding for and implementation of evidence-based harm reduction programming have helped reduce the HIV incidence among people who inject drugs in Ukraine. Data from multiple sources, from behavioural surveillance, sentinel surveys and programmes serving people who inject drugs all indicate that HIV transmission among people who inject drugs in Ukraine appears to be significantly decreasing. HIV infections among people who started injecting drugs in only the past two years (and are thus more likely to represent incident infections rather than ones acquired much earlier) decreased from a peak of 30% in 2004 to 11% in 2008 (14).

Behavioural surveillance in Ukraine shows that people who inject drugs are increasingly adapting key HIV risk-reduction measures. The percentage of people who inject drugs who report using sterile injecting equipment at last injection rose from 80% in 2006 to 86% in 2008. In 2009, about 4600 people who inject drugs were accessing opioid substitution therapy at any time (15). Although the HIV epidemic among people who inject drugs in Ukraine has stabilized, they remain at high risk of acquiring HIV, whether by sharing contaminated equipment or through the sexual transmission of HIV from people who inject drugs to their partners (Figure 3.4).

Figure 3.4

Harm reduction programmes and HIV prevalence in Ukraine

Association between harm reduction programmes and HIV prevalence in Ukraine, 2004–2009.

Sources: M Mahy, C Chhea, T Saliuk, O Varetska, R Lyerla (2010). A proxy measure for HIV incidence among populations at increased risk to HIV Vol 2(1):8, Journal of HIV/AIDS Surveillance and Epidemiology. UNGASS Country Progress Reports 2010.

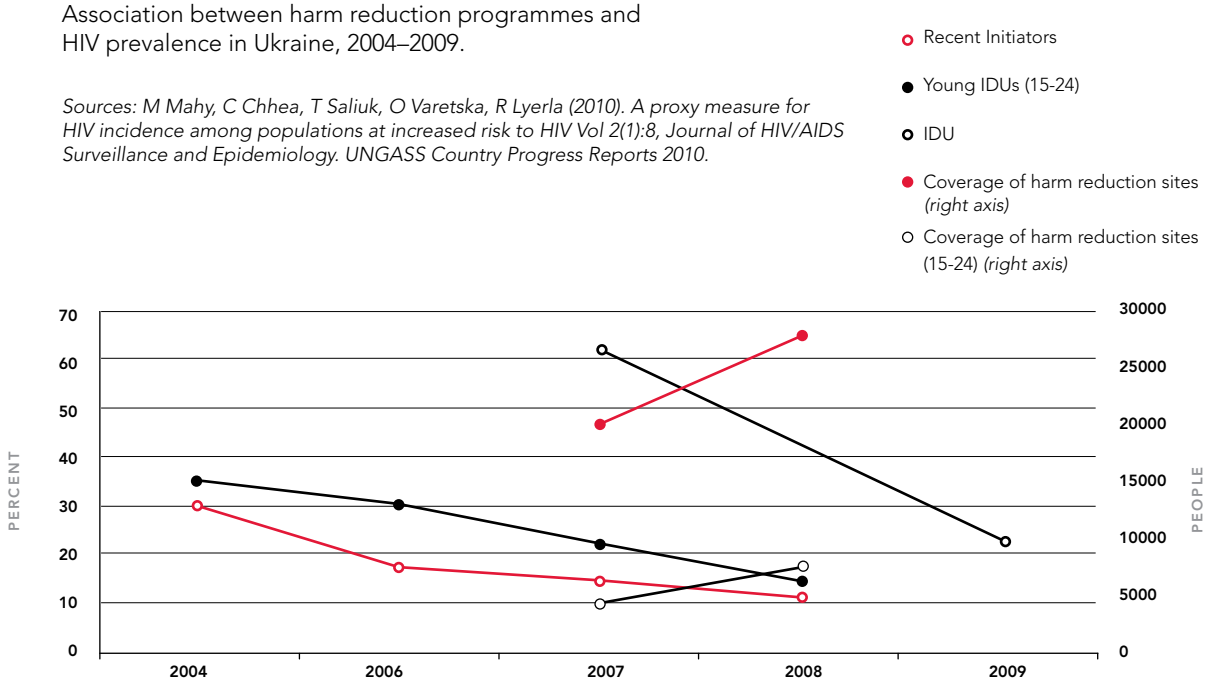
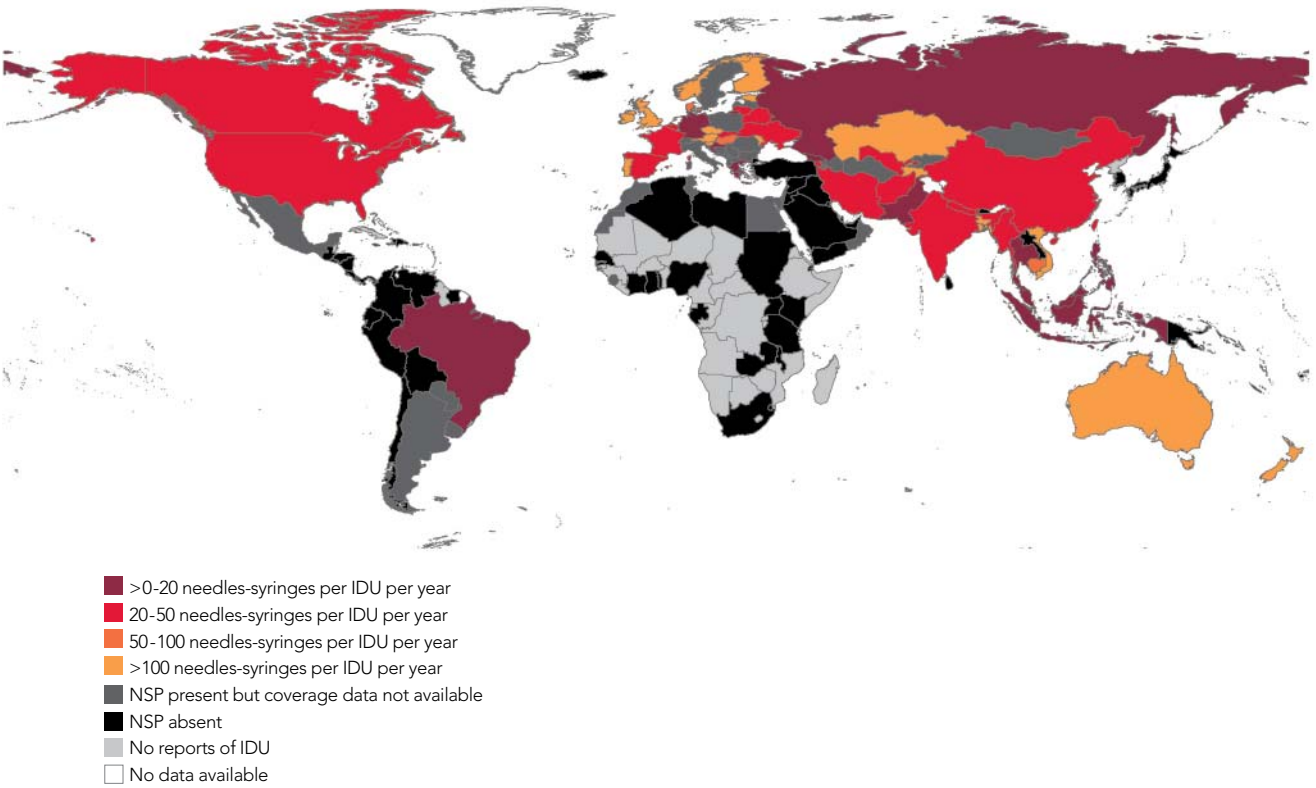


Figure 3.5

Availability of sterile injecting equipment, 2010

Global estimates of the availability of sterile injecting equipment per person who uses drugs per year, 2010.

Source: Mathers BM, Degenhardt L, Ali H, Wiessing L, Hickman M, Mattick R, et al. HIV prevention, treatment and care for people who inject drugs: A systematic review of global, regional and national coverage. The Lancet 2010;375:1014-28.



with 25.8 million condoms provided through international and nongovernmental funding sources in 2009, as opposed to 10.7 million condoms financed through these sources in 2006. Between 2008 and 2009 alone, condom distribution increased by 10 million. Global distribution of female condoms, however, still lags far behind that of male condoms.

HIV prevention efforts focused on people who inject drugs

An estimated 15.9 million [11.0 million–21.2 million] people inject drugs worldwide; of these, nearly 20%, an estimated 3 million [500 000–5.5 million] are living with HIV (12)(Table 3.1). Access to HIV prevention services, including harm-reduction programmes assisting people who use drugs, has increased, but not at the required scale. Globally, the median coverage of HIV prevention services was 32%. Although both men and women who inject drugs experience a significant burden of HIV disease, infection with other

bloodborne viruses and also potentially life-threatening conditions such as tuberculosis, women who inject drugs face even greater risks. Studies indicate that women who inject drugs are more likely to face violence and greater levels of stigma and are more likely to die earlier (13).

Making injecting safer for people who use drugs by providing sterile equipment is relatively easy and inexpensive and can significantly reduce levels of HIV transmission. Half of the 50 countries that report data about the use of safe injection equipment estimate that 80% or more of the people who inject drugs used a sterile needle at last injection. In Eastern Europe and Central Asia, where the HIV epidemics are primarily driven by injecting drug use, five of nine countries (Belarus, the Republic of Moldova, the Russian Federation, Ukraine and Uzbekistan) reported in 2009 that more than 80% of people who inject drugs used sterile injecting equipment at last injection. Eight of 12 countries reporting in South and South-East Asia report rates of sterile needle usage at last injection exceeding 80%. In Central and South America, Argentina reports more than 80% using a sterile needle at last injection (most other countries do not report on this indicator). In Oceania, Australia reports more than 80% using a sterile needle at last injection (other countries not reporting).

In North America and Europe, 10 countries report exceeding 80% usage of sterile equipment and nine below. In the Middle East and North Africa, all three reporting countries had levels below 80%. In the other regions, a large majority of countries did not report on this indicator.

According to WHO, UNODC and UNAIDS target-setting guidelines (16), the availability of fewer than 100 syringes per person who injects drugs per year is considered low, 100–200 medium, and more than 200 high. In addition to the survey data on the extent to which sterile needles were used at the most recent injection, Figure 3.5 illustrates that the number of sterile needles made available per estimated person who injects drugs is very low.

Men who have sex with men—a key population still needing support

Access to HIV prevention programmes and services for men who have sex with men has increased somewhat in the past two years but remains inadequate overall (Figure 3.6). Safer sex behaviour, especially not having unprotected penetrative sex, is effective in protecting individuals and the larger communities of men who have sex with men from HIV and other sexually transmitted infections. Data from 78 countries show that condom use by men who have sex with men was less than 50% in 24 countries, between 50% to 60% in 16 countries, 60% to 80% in 28 countries and more than 80% in only seven countries: Andorra, Cambodia, Guyana, Myanmar, Panama, Suriname, and Uzbekistan. Figure 3.7 gives the median and range of the proportion of reported condom use at last sex by men who have sex with men by geographical region.

Among countries reporting to UNGASS in 2010, a global median of 42% of men who have sex with men reported receiving an HIV test and the result in the past 12 months. A man knowing his HIV-positive status can protect his health by receiving appropriate treatment early and also be encouraged through

Table 3.1

Countries in which HIV infections among people who inject drugs represent 20% or more of the total number of people living with HIV

Source: Mathers et al. (12).

Azerbaijan
Canada
China
Estonia
Georgia
Indonesia
Iran (Islamic Republic of)
Italy
Kazakhstan
Kyrgyzstan
Malaysia
New Zealand
Pakistan
Russian Federation
Spain
Tajikistan
Ukraine
United States of America
Uzbekistan

counselling and support to lessen the risk of transmitting the virus to his future partners. A man who tests HIV-negative can be supported to continue to avoid being infected. Some regions report testing rates considerably above the median, such as in Central and South America, where Argentina, El Salvador, Guyana, and Paraguay reported that more than 80% of men who have sex with men have had an HIV test and know the results in the past 12 months.

80%

Argentina, El Salvador, Guyana, and Paraguay reported that more than 80% of men who have sex with men have had an HIV test and know the results in the past 12 months.

A recent survey by the Global Forum on MSM and HIV assessed the availability of and access to testing and prevention services for sexually transmitted infections and HIV among men who have sex with men in eight regions (18). Of the 17 services assessed (including sexually transmitted infection and HIV testing and counselling, HIV treatment, free condoms, mental health services, circumcision, and mass-media campaigns to reduce HIV and to reduce homophobia), only in two areas (sexually transmitted infection testing and circumcision) did a majority of respondents (only 51% in both cases) report that the services were easily accessible. Respondents also noted the many barriers to their access to services, including homophobia, stigma, criminalization of same-sex acts, policy barriers, and insensitivity or lack of awareness among health care providers.

Commercial and transactional sex

HIV prevention programmes among sex workers have achieved major progress both in increasing condom use in sex work and in reducing associated HIV infections. Considerable room remains, however, to improve the availability and use of condoms among sex workers and their clients. In 27 of 87 countries, data indicate that 90% or more of sex workers report condom use with their last client. A further 17 countries report condom use by sex workers at 80% to 90%. In contrast, 17 countries report rates of less than 60%.

In countries with concentrated epidemics, HIV prevalence trends among recent initiates into sex work provide insight into the trajectory of the HIV epidemic and are a proxy measure of HIV incidence. Figure 3.8 illustrates the case of sex workers in Cambodia: HIV prevalence among those engaged in sex work for less than one year declined steadily from 2002 to 2006, tracking a decline in estimated incidence. HIV prevalence also declined among sex workers who have been working for more than two years, but prevalence remains considerably higher than for those more recently engaged in sex work.

In India, the Avahan programme, underway since 2003, has demonstrated significant results among sex workers (19). The combined prevention approach of Avahan (community outreach, empowerment, condom programming and sexually transmitted infection and HIV testing services) explicitly addresses individuals with great vulnerability to HIV infection in six high-prevalence states: sex workers, men who have sex with men, people who inject drugs, and men at higher risk along key trucking routes. Recent results from an Avahan study of sex workers in Karnataka, in south India, showed that, from the time the programme was first implemented, the HIV prevalence in this population declined from 20% to 16% and condom use at last client sex increased from 66% to 84% (20).

Figure 3.6

HIV prevention programmes for selected populations

Median coverage of HIV prevention programmes for selected population groups, 2008 and 2010.

Source: Country Progress Reports 2010.

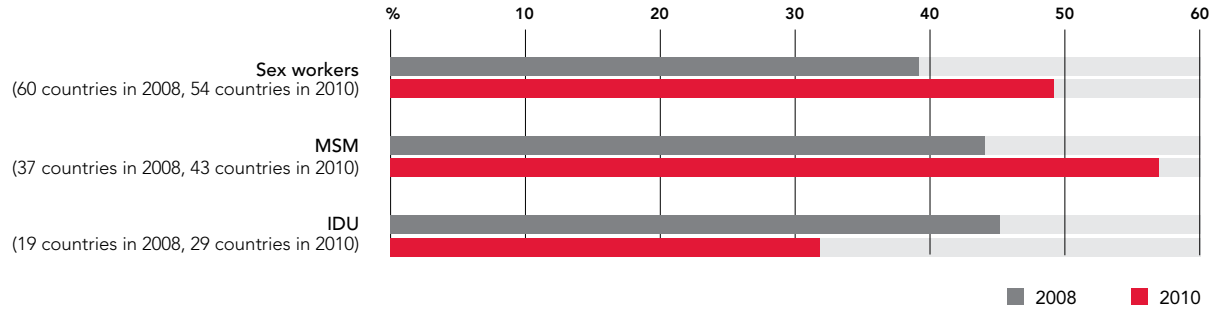


Figure 3.7

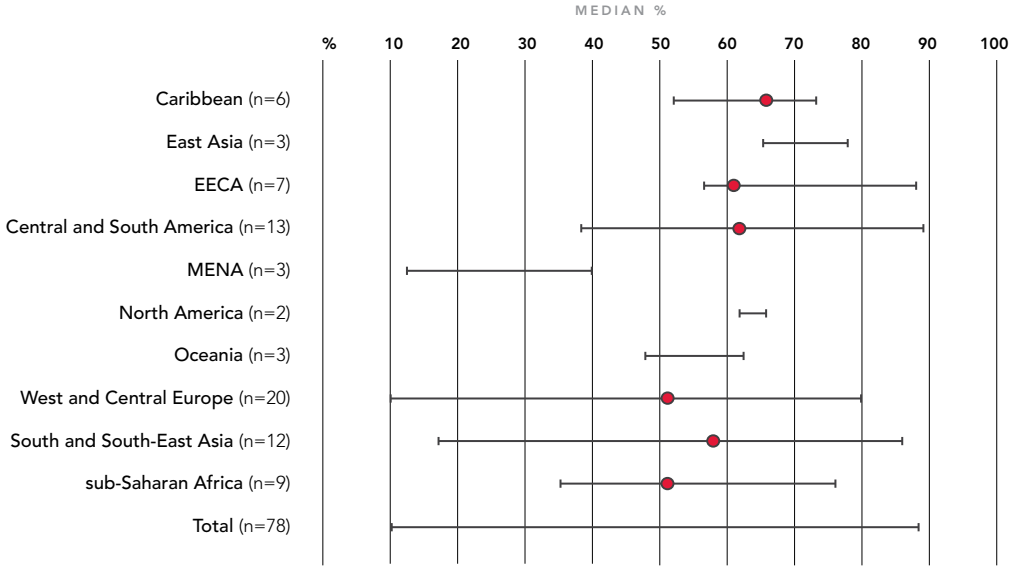
Condom use by men who have sex with men

Percentage (median and range) of men who have sex with men who used a condom at last sex by geographical region, 2010.

Source: Country Progress Reports 2010

Median

Medians were not calculated where number of countries was 5 or less



Structural approaches to HIV prevention

Tackling the social and economic drivers of HIV risk and vulnerability can significantly influence the epidemic if these approaches are implemented systematically.

One example of social change that could directly reduce the number of new HIV infections is reducing the violence faced by people who inject drugs. Moving beyond the availability of sterile needles and syringes and treatment programmes to reduce HIV for people who inject drugs—changes in the social, economic and policy environment can also have a marked effect. For example, an association has been observed between police violence against people who inject drugs and specific types of higher-risk behaviour such as using preloaded syringes. Building on this association, recent modelling has estimated the number of HIV infections that could be averted if police violence against people who inject drugs was eliminated (Figure 3.9).

Another approach is the IMAGE Programme in South Africa, which combines microfinance for women with gender training and community mobilization. The programme was evaluated as a randomized trial and found positive effects on household economic well-being and women's empowerment, a 50% reduction in intimate partner violence, and reduced HIV risk behaviour among young women participants. The programme has scaled up to reach more than 12 000 women in South Africa.

Schooling for girls has the potential to reduce HIV risk. The positive effects of both school participation and HIV programmes in schools on HIV-related risks have been well established (22). Age-disparate partnerships, in which young women are in relationships with men at least five years older, are also associated with elevated risk of HIV infection (23). Cash transfers are emerging as a potential intervention to mitigate certain social or economic drivers of HIV vulnerability.

Several recent studies provide evidence of the effectiveness of cash transfers in educational retention and HIV prevention. In Zomba, Malawi, for example, both conditional and unconditional cash transfers for adolescent girls resulted in increased school attendance among beneficiaries (24). Early marriage, pregnancy, and self-reported sexual activity declined notably among beneficiaries of both types of cash transfers. According to the evidence, observed changes in self-reported sexual `account for less than half of the programme's effects on HIV, with the rest due to a change in the risk profile of the girls' sexual partners (25). These results suggest that structural interventions such as cash transfers might be a promising tactic for overcoming age-disparate sex, a key driver of the epidemic in several countries.

In addition, structural approaches that strengthen solidarity and collective action `can play a critical role in enhancing resilience to HIV among marginalized groups, including sex workers. Avahan, the India AIDS Initiative funded by the Bill & Melinda Gates Foundation (19), has found that structural activities can be feasible and cost-effective, and can contribute to more sustainable HIV prevention when integrated into a package of prevention activities. Pathfinder International, a key partner of Avahan, and its local implementing nongovernmental organization partner in Kolhapur are implementing a structural intervention that provides supported peer-led outreach, crisis response services and community mobilization to street-based sex workers, whose visibility makes them vulnerable to arrest and to violence from police, clients, and gangs (26).

Food insecurity is widespread globally (more than 1 billion people are undernourished) and forces people to use various types of coping behaviour, some of which increase the likelihood of engaging in unprotected sex, particularly sexual risk-taking among women, as they may engage in transactional sex to procure food for themselves and their children. A study, conducted in Botswana and Swaziland, showed that food insecurity was associated with inconsistent condom use with a "non-primary" partner: women reporting food insufficiency in the previous 12 months had 80% increased odds of selling sex for money or resources, 70% increased odds of engaging in unprotected sex and reporting lack of sexual control and 50% increased odds of intergenerational sex (27). Similarly, a study in Uganda that investigated the relationship between food insecurity and transactional sex showed the negative effects of food insecurity on control over condom use and the risk of staying in abusive relationships (28). Gender inequality, often reinforced by intergenerational sex, further weakens women's negotiating power. A study from Nigeria reported that 35% of female sex workers said that poverty and lack of means to obtain food caused them to join the sex trade, and to engage in unprotected sex with clients (29). These associations remained even when controlling for other markers of socioeconomic status.

Figure 3.8

Condom use and HIV prevalence among sex workers in Cambodia

Percentage of sex workers using condoms and HIV prevalence among brothel-based sex workers in Cambodia by length of time involved in sex work, 1998–2007.

Source: M Mahy, C Chhea, T Saliuk, O Varetska, R Lyerla (2010). A proxy measure for HIV incidence among populations at increased risk to HIV Vol 2(1):8, Journal of HIV/AIDS Surveillance and Epidemiology.

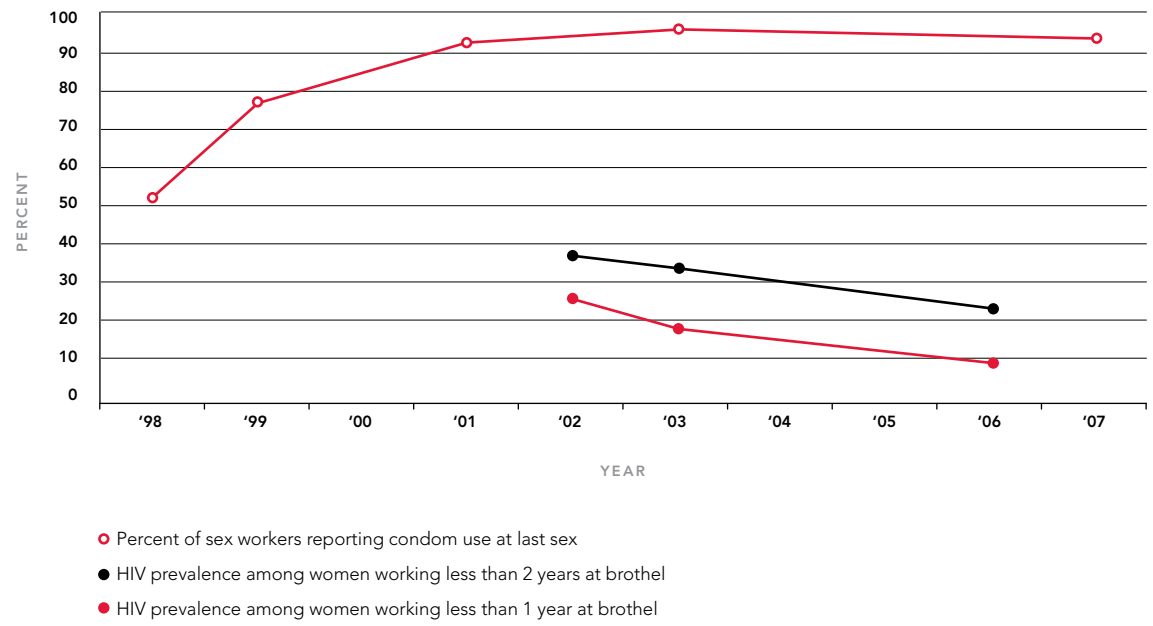
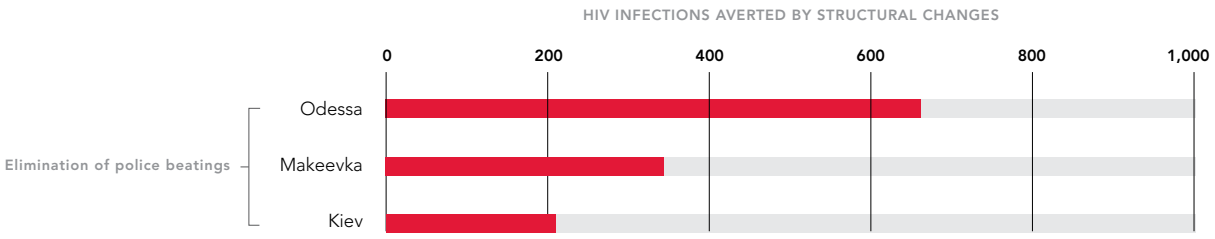


Figure 3.9

Averting HIV infection by eliminating police beatings of people who inject drugs, Ukraine

HIV infections that could be averted by eliminating police beatings of people who inject drugs in three cities in Ukraine

Source: Strathdee et al 2010



[2] Countries with the largest number of pregnant women living with HIV in 2009: Angola, Botswana, Burkina Faso, Burundi, Cameroon, Chad, Cote d'Ivoire, Democratic Republic of the Congo, Ethiopia, Ghana, India, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Rwanda, South Africa, Sudan, Swaziland, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

Significant strides in preventing mother-to-child transmission

Preventing mother-to-child transmission of HIV has been a fundamental advance in the AIDS response for the past decade. Infection rates among children born to mothers living with HIV have dropped significantly in recent years, from 500 000 [320 000–680 000] in 2001 to 370 000 [230 000–510 000] children infected with HIV in 2009.

Several countries have advanced efforts to prevent the mother-to-child transmission of HIV. Botswana, Namibia, South Africa and Swaziland have achieved more than 80% coverage of antiretroviral prophylaxis to prevent mother-to-child transmission. Seven other countries in sub-Saharan Africa have coverage levels of 50% to 80%. Sub-Saharan Africa as a whole achieved 54% [40%–84%] coverage. In East and Southern Africa, 68% [53%–95%] of pregnant women living with HIV received antiretroviral medication to prevent mother-to-child transmission in 2009 (up substantially from 15% in 2005). In West and Central Africa, however, coverage lags at 23% [16%–44%] (30).

Worldwide, 53% [40%–79%] of women in low- and middle-income countries received antiretroviral medication to prevent the mother-to-child transmission of HIV in 2009, versus 45% [37%–57%] in 2008 and 15% in 2005 (31). The gap in reaching the target of 80% coverage of antiretroviral prophylaxis for preventing mother-to-child transmission is becoming more concentrated in a handful of countries, with 14 countries comprising more than 80% of the global gap. Nigeria alone now contributes to 32% of the gap, with the Democratic Republic of the Congo next, contributing 7% of the gap (Figure 3.10, Figure 3.11).

The proportion of pregnant women in low- and middle-income countries who received an HIV test reached 26%, up from 21% in 2008 and 7% in 2005 (31)—progress, but still a low figure, on the path towards the UNAIDS goal of virtually eliminating the mother-to-child transmission of HIV by 2015. In the 25 countries with the greatest number of pregnant women living with HIV,[2] the percentage receiving HIV testing and counselling varied greatly—from more than 95% in South Africa and Zambia to 9% in the Democratic Republic of the Congo and 6% in Chad (31).

Coverage for services for preventing mother-to-child transmission has lagged behind antenatal care access (Figure 3.12). In addition, women living with HIV continue to have a high unmet need for family planning: in some countries, more than one quarter of women living with HIV do not desire their current pregnancy or would like to delay their next pregnancy by two years. Strengthening family planning services and the delivery of maternal, newborn and child health care would produce better outcomes for babies and their mothers.

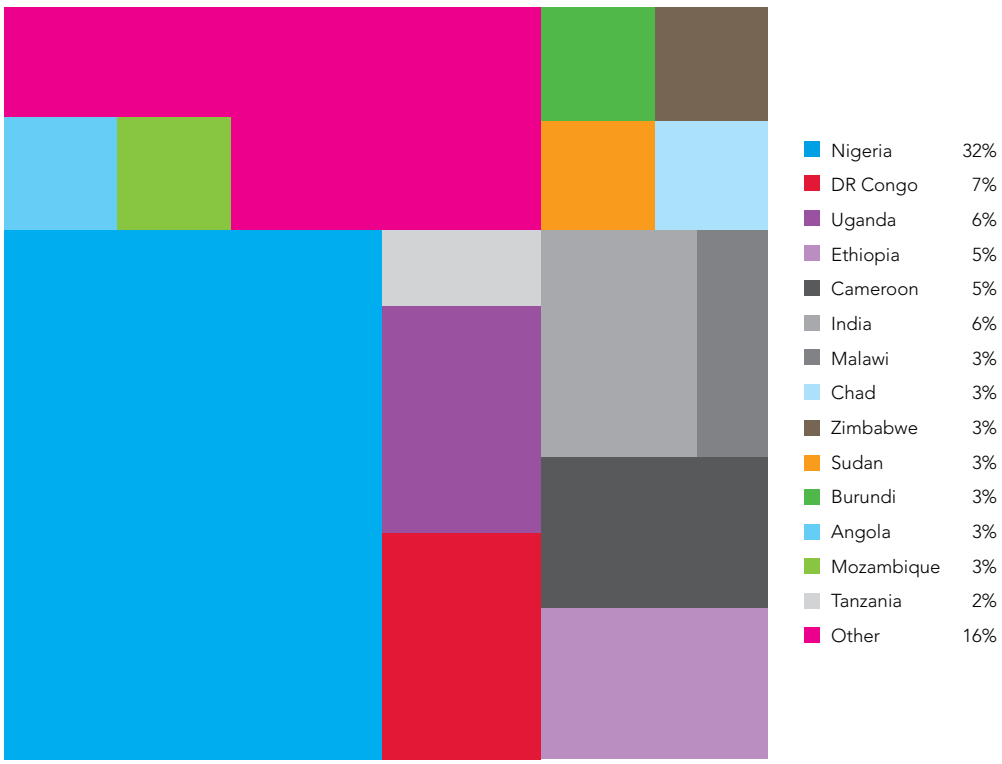
The efficacy of antiretroviral drugs in preventing mother-to-child transmission of HIV varies with the type of regimen used and the duration over which it is given. Combination regimens which include different types of antiretroviral drugs are more efficacious than monotherapies. Monotherapies are also prone to building antiretroviral resistance in the virus, which may limit future therapeutic options when treatment is needed. According to the 2010 WHO

Figure 3.10

Gaps in antiretroviral therapy to prevent mother-to-child transmission

Global gap in providing antiretroviral therapy to 80% of mothers to prevent mother-to-child transmission in low- and middle-income countries.

Source: WHO Towards Universal Access 2010.



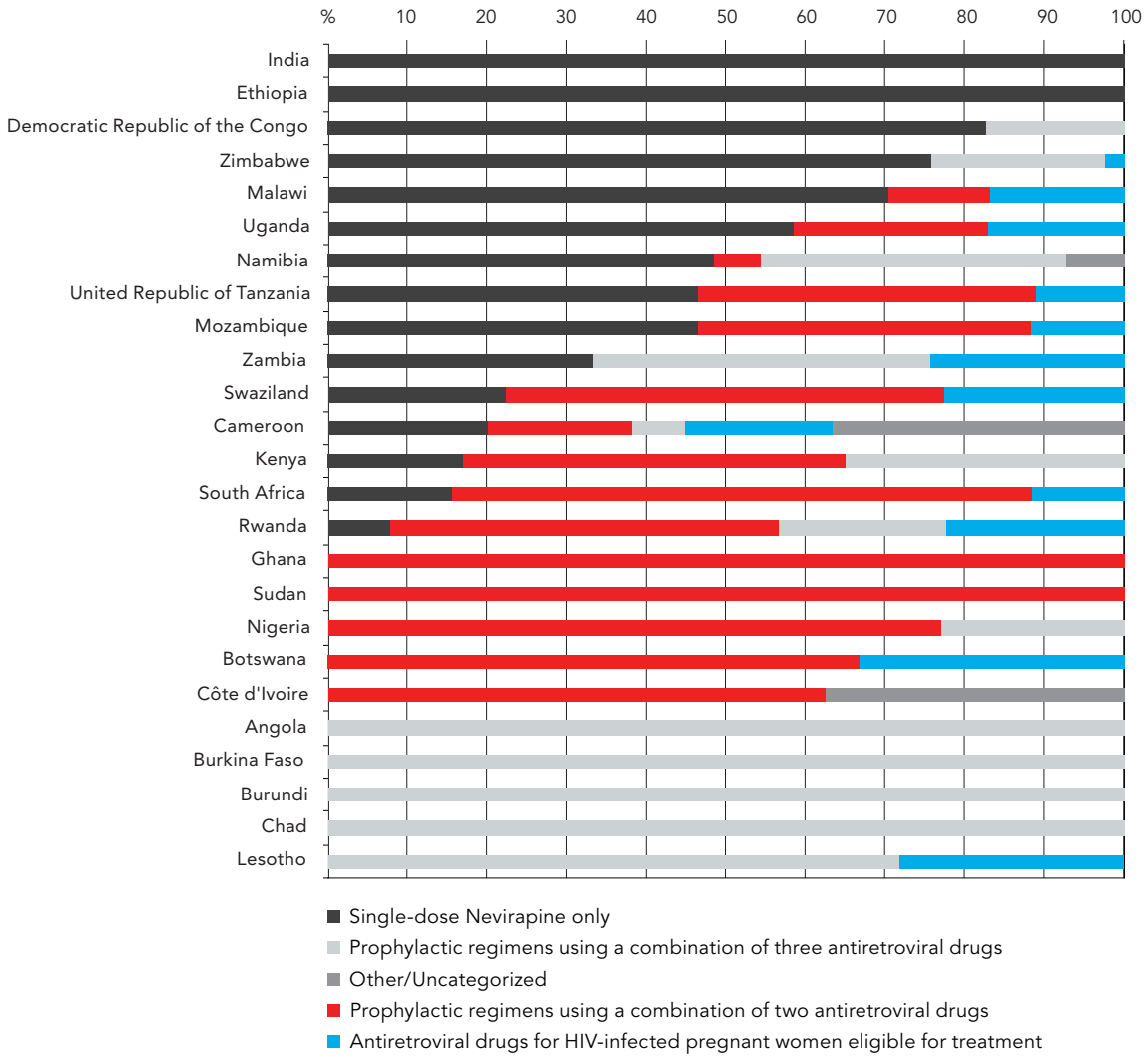
treatment guidelines it is recommended that pregnant women living with HIV and their exposed infants receive combination therapy rather than single-dose Nevirapine. Antiretroviral prophylaxis is also recommended during breastfeeding in settings where breastfeeding is judged to be the safest infant feeding option. In addition, all women eligible for treatment under WHO guidelines should receive an appropriate combination therapy for their own health.

In the 59 low- and middle-income countries that provided disaggregated data for their prevention of mother-to-child regimens around 30% of pregnant women received single-dose Nevirapine, while 54% received a combination regimen to avoid mother-to-child transmission of HIV. About 15% of all mothers received ongoing antiretroviral therapy based on eligibility criteria for treatment. Figure 3.11 shows the distribution of regimens given for the prevention of mother-to-child transmission in 2009 for the 25 countries with the greatest number of HIV positive pregnant women. Of those countries 10 have moved from using single-dose Nevirapine to providing more efficacious combination regimens.

Figure 3.11

Distribution of prophylactic regimens for the prevention of mother-to-child transmission

Source: Country Progress Reports 2010



However, in India, Ethiopia, the Democratic Republic of Congo, Zimbabwe and Malawi over two thirds of women who were provided with antiretrovial drugs for the prevention of mother-to-child transmission were still offered single dose Nevirapine. In these countries there is an urgent need to update the regimens in line with the global standards.

New tools to expanding effective HIV prevention

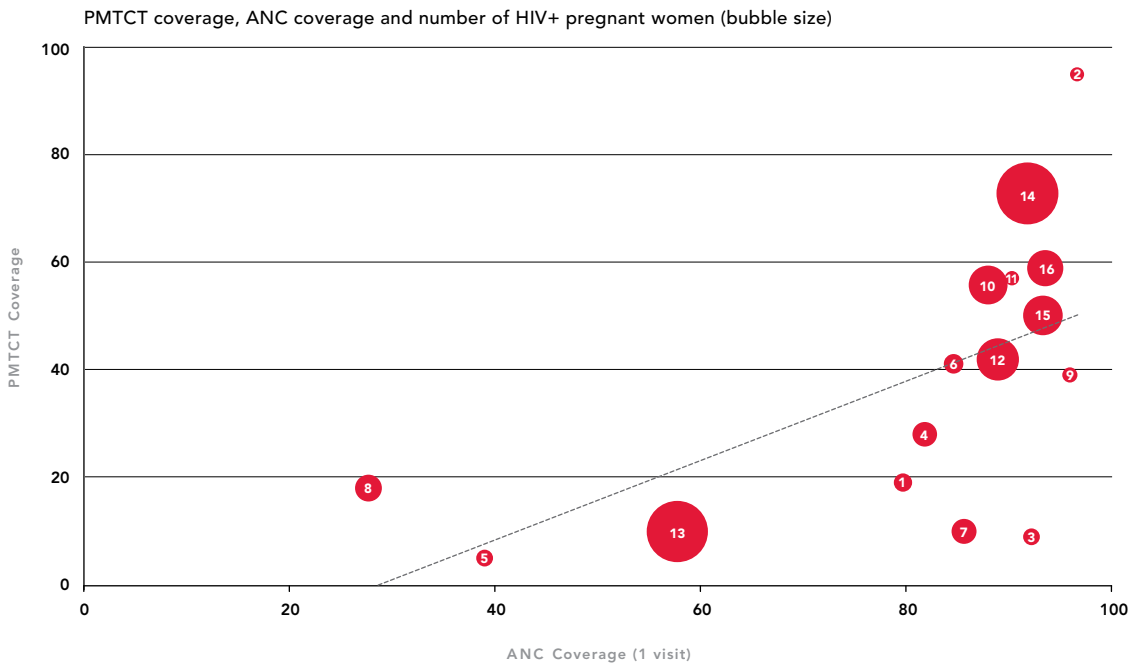
The goals and targets set at the United Nations General Assembly Special Session on HIV/AIDS (UNGASS) in 2001, which emphasize increasing knowledge and behaviour change, continue to be the mainstay of HIV prevention efforts. Since 2001, major advances in HIV prevention tools and methods have been integrated progressively into increasingly effective HIV prevention programmes.

Figure 3.12

Preventing mother-to-child transmission

Coverage of antenatal care services and services for preventing mother-to-child transmission among women living with HIV in high-prevalence countries, 2010

Source: WHO and UN Statistics Division



Among these are efforts to prevent mother-to-child transmission and to promote male circumcision. On the horizon is the potential of expanded efforts to reap the prevention benefits of access to antiretroviral therapy, topical uses of antiretroviral drugs in microbicides, and the potential expansion of the prophylactic use of antiretroviral drugs before exposure to HIV.

Male circumcision

Three clinical trials have demonstrated that adult male circumcision significantly reduces the likelihood of uninfected men acquiring HIV from an HIV-infected female sex partner. UNAIDS and WHO have recommended that male circumcision be scaled up in areas of high HIV prevalence and low rates of male circumcision. A review of nine country experiences of scaling up adult male circumcision in Southern and Eastern Africa shows significant roll-out in the Nyanza province of Kenya and considerable experience gained in other areas (Table 3.2).

Table 3.2

Scaling up male circumcision

Recent roll-out of the scaling up of adult male circumcision in nine countries.

Source: Meeting reports and presentations. Durham, NC, Clearinghouse on Male Circumcision for HIV Prevention, 2010.

	Number circumcised	Time period	Number of sites established
BOTSWANA	6 180	April 2009 – March 2010	35
KENYA	91 300 (90 000 in Nyanza alone)	2009 – June 2010	
NAMIBIA	350	September 2009 – June 2010	3
RWANDA	542	October 2009 – April 2010	9
SWAZILAND	10 000	2008 – June 2010	
UGANDA	5 340	October 2008 – March 2010	
UNITED REPUBLIC OF TANZANIA	4 700	September 2009 – May 2010	3
ZAMBIA	9 906 10 000 9 179	January – June 2010 2009 2007 – 2008	56
ZIMBABWE	6 070	May 2009 – April 2010	5

Microbicides

Recent promising results of a tenofovir-based gel have raised hopes that an additional female-initiated prevention option may soon become viable. This landmark proof-of-concept study by the Centre for the AIDS Programme of Research in South Africa (CAPRISA) (34) found that the microbicide gel studied reduced HIV infection by 39% and herpes simplex virus-2 infection by 51% and that the gel was both safe and acceptable when used once in the 12 hours before sex and once in the 12 hours after sex by women aged 18–40 years.

"RECENT PROMISING RESULTS OF A TENOFOVIR-BASED GEL HAVE RAISED HOPES THAT AN ADDITIONAL FEMALE-INITIATED PREVENTION OPTION MAY SOON BECOME VIABLE."

Moving forward, based on these data, and making a safe and effective tenofovir gel available to women who want it will require: rapidly moving to additional trials to confirm results; determining the requirements for the approval by national drug regulatory authorities of this new indication for tenofovir; conducting the operations research needed to determine how to deliver and sustain product supplies within combination prevention programmes; determining the frequency of HIV testing needed to ensure the safe use of the microbicide gel; and accelerating studies to expand knowledge of whether the product is safe and effective for women younger than 18 years of age and pregnant women. ■

THE HIV TREATMENT AND PREVENTION CONTINUUM

When the United Nations General Assembly Special Session on HIV/AIDS was held in 2001, access to antiretroviral therapy in low- and middle-income countries was in its infancy. By 2006, Member States unanimously supported goals towards universal access to HIV prevention, treatment, care and support. This commitment was underpinned by successful country experiences in accelerating access to HIV treatment.

Antiretroviral therapy is now better seen as having several crucial roles in the AIDS response. This is especially true when prevention and treatment interact in synergy, for example in the prevention of mother-to-child transmission, in post-exposure prophylaxis, and in the beneficial results from reduced viral load at both the individual and population levels in reducing the onward transmission of HIV. Trials are also underway to examine their role in pre-exposure prophylaxis.

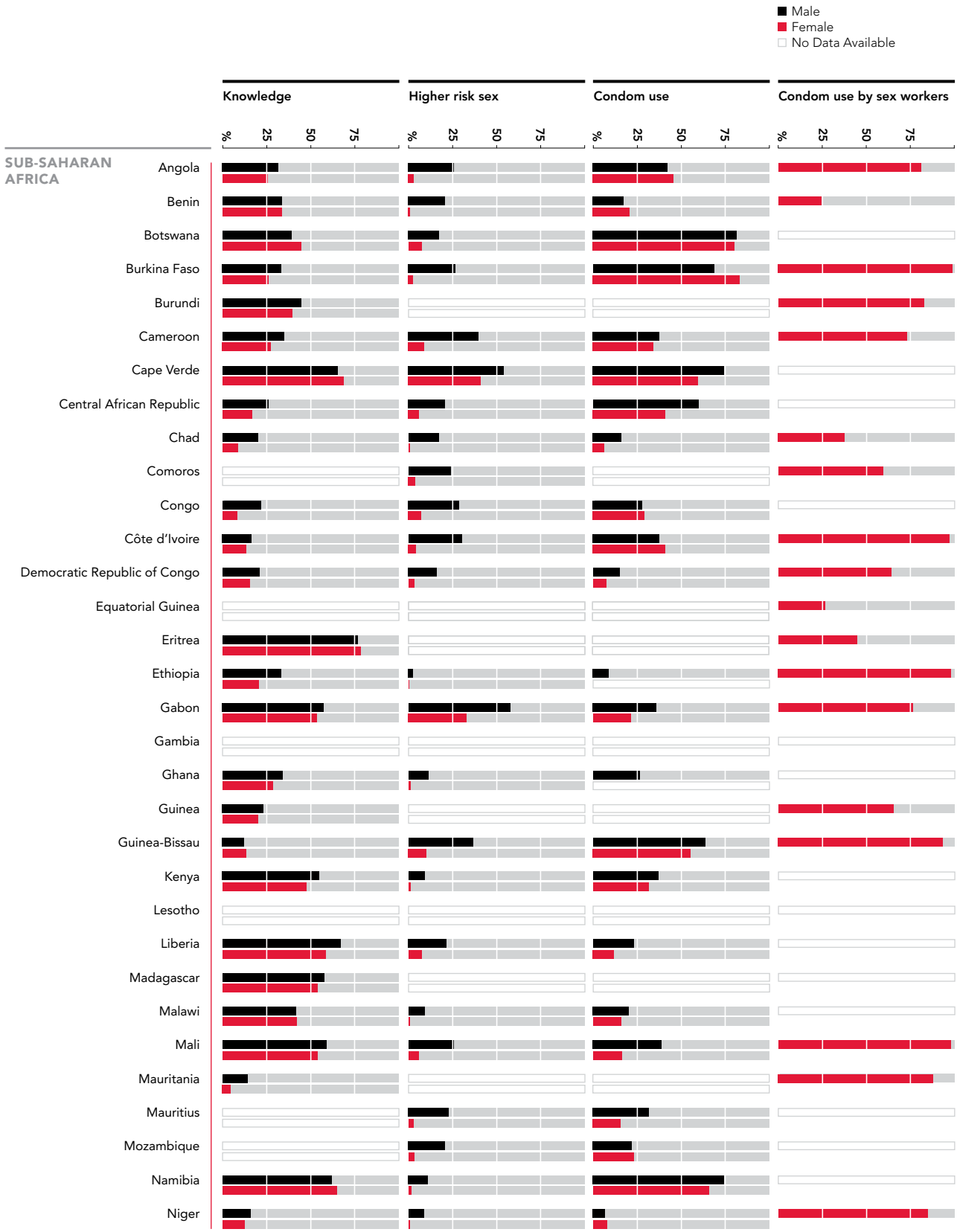
A concerted focus on bridging the gap between HIV treatment need and HIV treatment access will maximize the potential of antiretroviral therapy to contribute to secondary individual, family and population-level HIV prevention benefits. These secondary benefits will be realized where antiretroviral therapy reaches everyone in need of treatment and where people living with HIV are able to shape HIV prevention programming in a framework of "positive health, dignity and prevention". Treatment is not a "magic bullet" to bring HIV epidemics to a halt (35), but antiretroviral therapy as an element of combination HIV prevention programmes seems likely to have potentially significant secondary benefits beyond prevention programmes that do not include increased treatment access. The action agenda to build stronger prevention and treatment responses in tandem requires:

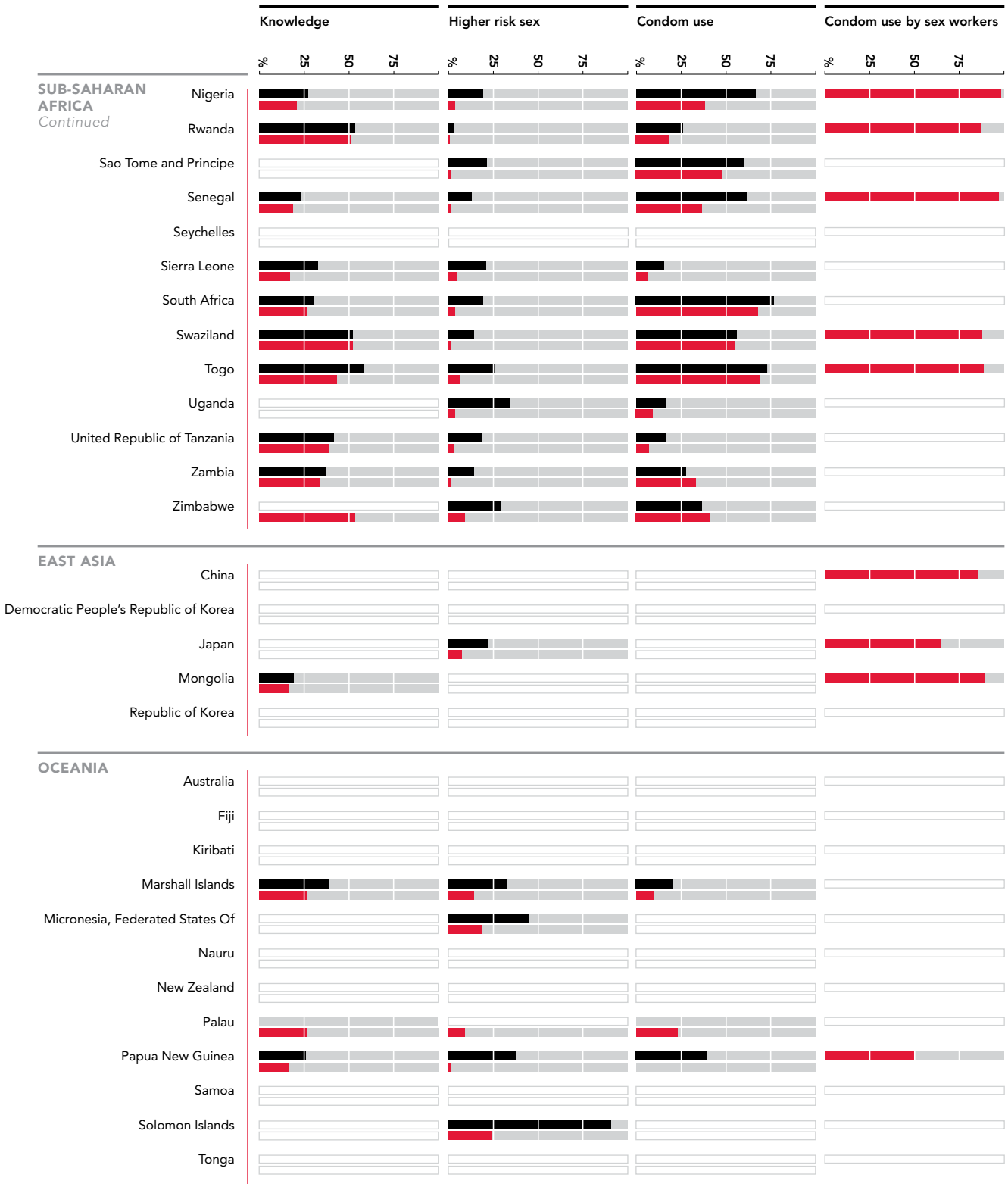
- non-stigmatizing health services;
- effective referral systems across HIV, tuberculosis, and sexually transmitted infection behaviour and social support services;
- increased investment in the capacities of people living with HIV and key affected communities to organize and empower themselves; and
- social and behavioural change communication around risk and treatment.

ACTION ITEMS

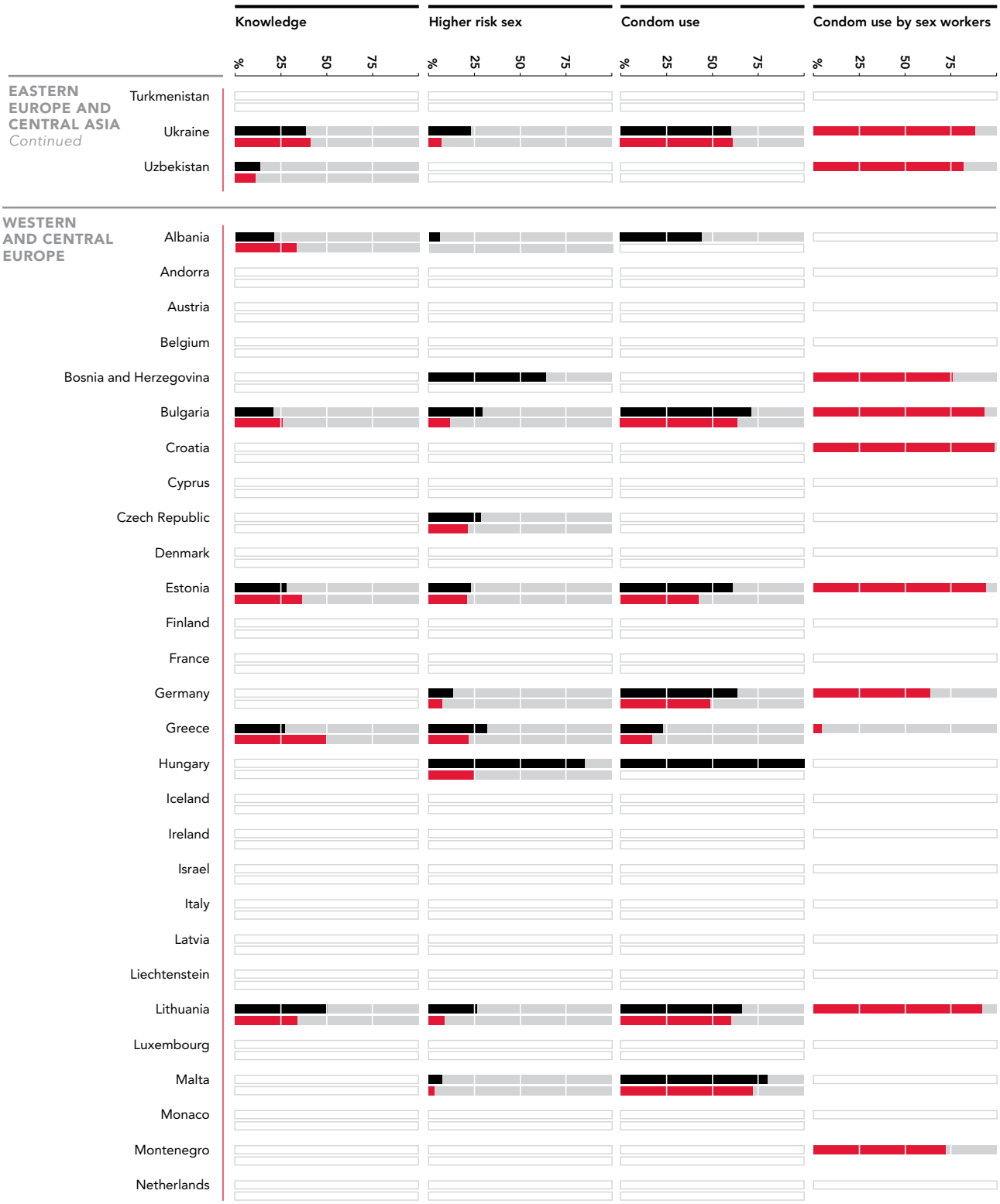
- HIV prevention programmes must be scaled up rapidly to deflect the upward trajectory of the epidemic.
- Investments in HIV prevention programmes are insufficient and should increase. National programmes should ensure that investments are given priority according to epidemic patterns to reach the populations most in need.
- HIV prevention programmes must include a combination of behavioural, biomedical, and structural responses, and these activities should operate in synergy.
- HIV prevention programmes should reach men who have sex with men, sex workers and their clients, transgender people, and people who inject drugs. Behaviour change and condom promotion efforts must work in tandem.
- The virtual elimination of mother-to-child transmission of HIV is possible. Current advances in stopping new infections among children must be accelerated by integrating services in antenatal care settings.
- New HIV prevention methods such as male circumcision must be scaled up in countries with generalized epidemics.
- The results from the CAPRISA microbicide gel trial hold promise for a woman-initiated and controlled HIV prevention option. The international community must fully support the next steps to confirm the trial results at the earliest.

SCORECARD: HIV PREVENTION




Knowledge
Higher risk sex
Condom use
Condom use by sex workers
% 25 50 75
SUB-SAHARAN AFRICA
Continued
Nigeria
Rwanda
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
South Africa
Swaziland
Togo
Uganda
United Republic of Tanzania
Zambia
Zimbabwe
EAST ASIA
China
Democratic People's Republic of Korea
Japan
Mongolia
Republic of Korea
OCEANIA
Australia
Fiji
Kiribati
Marshall Islands
Micronesia, Federated States Of
Nauru
New Zealand
Palau
Papua New Guinea
Samoa
Solomon Islands
Tonga

SCORECARD: HIV PREVENTION


Knowledge
Higher risk sex
Condom use
Condom use by sex workers
% 25 50 75
EASTERN EUROPE AND CENTRAL ASIA
Continued
Turkmenistan
Ukraine
Uzbekistan
WESTERN AND CENTRAL EUROPE
Albania
Andorra
Austria
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Latvia
Liechtenstein
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands

SCORECARD: HIV PREVENTION


Knowledge
Higher risk sex
Condom use
Condom use by sex workers
% 25 50 75
MIDDLE EAST AND NORTH AFRICA
Continued
Saudi Arabia
Somalia
Sudan
Syrian Arab Republic
Tunisia
United Arab Emirates
Yemen
CARIBBEAN
Antigua and Barbuda
Bahamas
Barbados
Cuba
Dominica
Dominican Republic
Grenada
Haiti
Jamaica
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Trinidad and Tobago
CENTRAL AND SOUTH AMERICA
Argentina
Belize
Bolivia
Brazil
Chile
Colombia
Costa Rica
Ecuador
El Salvador
Guatemala

SCORECARD: HIV PREVENTION