

AIDS

epidemic update

December 2005



Joint United Nations Programme on HIV/AIDS

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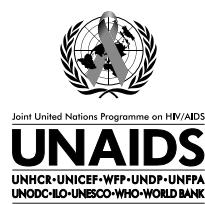
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AIDS epidemic update

Special Report on HIV Prevention

December 2005



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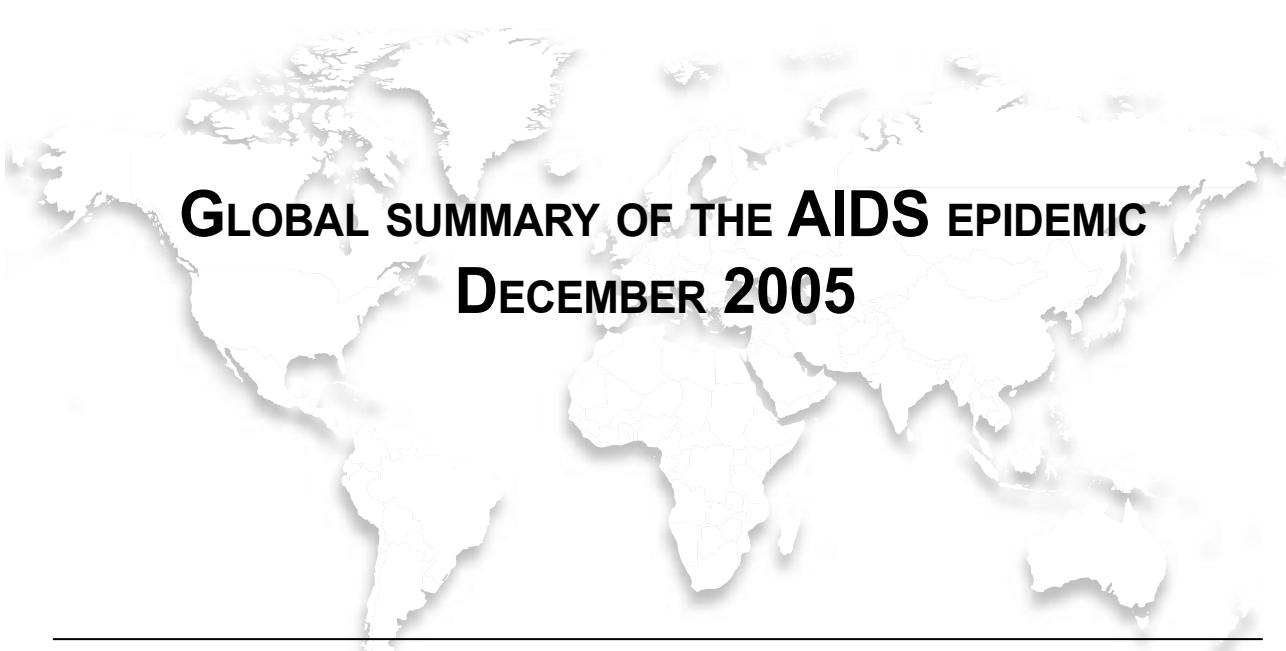
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AIDS epidemic update: December 2005





GLOBAL SUMMARY OF THE AIDS EPIDEMIC

DECEMBER 2005

Number of people living with HIV in 2005

Total	40.3 million (36.7–45.3 million)
Adults	38.0 million (34.5–42.6 million)
Women	17.5 million (16.2–19.3 million)
Children under 15 years	2.3 million (2.1–2.8 million)

People newly infected with HIV in 2005

Total	4.9 million (4.3–6.6 million)
Adults	4.2 million (3.6–5.8 million)
Children under 15 years	700 000 (630 000–820 000)

AIDS deaths in 2005

Total	3.1 million (2.8–3.6 million)
Adults	2.6 million (2.3–2.9 million)
Children under 15 years	570 000 (510 000–670 000)

The ranges around the estimates in this table define the boundaries within which the actual numbers lie, based on the best available information.

INTRODUCTION

Acquired Immunodeficiency Syndrome (AIDS) has killed more than 25 million people since it was first recognized in 1981, making it one of the most destructive epidemics in recorded history. Despite recent, improved access to antiretroviral treatment and care in many regions of the world, the AIDS epidemic claimed 3.1 million [2.8–3.6 million] lives in 2005; more than half a million (570 000) were children.

The total number of people living with the human immunodeficiency virus (HIV) reached its highest level: an estimated 40.3 million [36.7–45.3 million] people are now living with HIV. Close to 5 million people were newly infected with the virus in 2005.

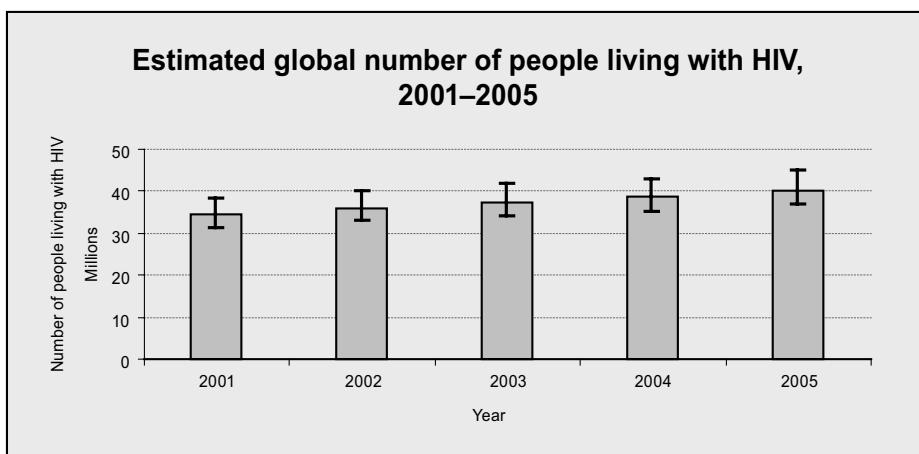


Figure 1

There is ample evidence that HIV does yield to determined and concerted interventions. Sustained efforts in diverse settings have helped bring about decreases in HIV incidence among men who have sex with men in many Western countries, among young people in Uganda, among sex workers and their clients in Thailand and Cambodia, and among injecting drug users in Spain and Brazil. Now there is new evidence that prevention programmes initiated some time ago are finally helping to bring down HIV prevalence in Kenya and Zimbabwe, as well as in urban Haiti.

The number of people living with HIV has increased in all but one region in the past two years. In the Caribbean, the second-most affected region in the world, HIV prevalence overall showed no change in 2005, compared with 2003.

Sub-Saharan Africa remains hardest-hit, and is home to 25.8 million [23.8–28.9 million] people living with HIV, almost one million more than in 2003. Two thirds of all people living with HIV are in sub-Saharan Africa, as are 77% of all women with HIV (see pages 17–30). An estimated 2.4

million [2.1–2.7 million] people died of HIV-related illnesses in this region in 2005, while a further 3.2 million [2.8–3.9 million] became infected with HIV.

Growing epidemics are underway in Eastern Europe and Central Asia (see pages 45–53), and in East Asia. In the former, the number of people living with HIV has increased by one quarter (to 1.6 million) since 2003, and the number of AIDS deaths almost doubled (to 62 000) in the same period. In East Asia, the number of people living with HIV in 2005 increased by one fifth (to 870 000), compared with two years earlier.

The increase in the proportion of women being affected by the epidemic continues. In 2005, 17.5 million [16.2–19.3 million] women were living with HIV—one million more than in 2003. Thirteen and a half million [12.5–15.1 million] of those women live in sub-Saharan Africa. The widening impact on women is apparent also in South and South-East Asia (where almost two million women now have HIV) and in Eastern Europe and Central Asia.

Regional HIV and AIDS statistics and features, 2003 and 2005

	Adults and children living with HIV	Adults and children newly infected with HIV	Adult prevalence (%)*	Adult and child deaths due to AIDS
Sub-Saharan Africa				
2005	25.8 million [23.8–28.9 million]	3.2 million [2.8–3.9 million]	7.2 [6.6–8.0]	2.4 million [2.1–2.7 million]
2003	24.9 million [23.0–27.9 million]	3.0 million [2.7–3.7 million]	7.3 [6.7–8.1]	2.1 million [1.9–2.4 million]
North Africa and Middle East				
2005	510 000 [230 000–1.4 million]	67 000 [35 000–200 000]	0.2 [0.1–0.7]	58 000 [25 000–145 000]
2003	500 000 [200 000–1.4 million]	62 000 [31 000–200 000]	0.2 [0.1–0.7]	55 000 [22 000–140 000]
South and South-East Asia				
2005	7.4 million [4.5–11.0 million]	990 000 [480 000–2.4 million]	0.7 [0.4–1.0]	480 000 [290 000–740 000]
2003	6.5 million [4.0–9.7 million]	840 000 [410 000–2.0 million]	0.6 [0.4–0.9]	390 000 [240 000–590 000]
East Asia				
2005	870 000 [440 000–1.4 million]	140 000 [42 000–390 000]	0.1 [0.05–0.2]	41 000 [20 000–68 000]
2003	690 000 [350 000–1.1 million]	100 000 [33 000–300 000]	0.1 [0.04–0.1]	22 000 [11 000–37 000]
Oceania				
2005	74 000 [45 000–120 000]	8200 [2400–25 000]	0.5 [0.2–0.7]	3600 [1700–8200]
2003	63 000 [38 000–99 000]	8900 [2600–27 000]	0.4 [0.2–0.6]	2000 [910–4900]
Latin America				
2005	1.8 million [1.4–2.4 million]	200 000 [130 000–360 000]	0.6 [0.5–0.8]	66 000 [52 000–86 000]
2003	1.6 million [1.2–2.1 million]	170 000 [120 000–310 000]	0.6 [0.4–0.8]	59 000 [46 000–77 000]
Caribbean				
2005	300 000 [200 000–510 000]	30 000 [17 000–71 000]	1.6 [1.1–2.7]	24 000 [16 000–40 000]
2003	300 000 [200 000–510 000]	29 000 [17 000–68 000]	1.6 [1.1–2.7]	24 000 [16 000–40 000]
Eastern Europe and Central Asia				
2005	1.6 million [990 000–2.3 million]	270 000 [140 000–610 000]	0.9 [0.6–1.3]	62 000 [39 000–91 000]
2003	1.2 million [740 000–1.8 million]	270 000 [120 000–680 000]	0.7 [0.4–1.0]	36 000 [24 000–52 000]
Western and Central Europe				
2005	720 000 [570 000–890 000]	22 000 [15 000–39 000]	0.3 [0.2–0.4]	12 000 <15 000
2003	700 000 [550 000–870 000]	20 000 [13 000–37 000]	0.3 [0.2–0.4]	12 000 <15 000
North America				
2005	1.2 million [650 000–1.8 million]	43 000 [15 000–120 000]	0.7 [0.4–1.1]	18 000 [9 000–30 000]
2003	1.1 million [570 000–1.8 million]	43 000 [15 000–120 000]	0.7 [0.3–1.1]	18 000 [9 000–30 000]
TOTAL				
2005	40.3 million [36.7–45.3 million]	4.9 million [4.3–6.6 million]	1.1 [1.0–1.3]	3.1 million [2.8–3.6 million]
2003	37.5 million [34.0–41.9 million]	4.6 million [4.0–6.0 million]	1.1 [1.0–1.2]	2.8 million [2.5–3.1 million]

Regional HIV statistics and features for women, 2003 and 2005

		Number of women (15–49) living with HIV	Percent of adults (15–49) living with HIV who are women (%)
Sub-Saharan Africa	2005	13.5 million [12.5–15.1 million]	57
	2003	13.1 million [12.1–14.6 million]	57
North Africa and Middle East	2005	220 000 [83 000–660 000]	47
	2003	230 000 [78 000–700 000]	50
South and South-East Asia	2005	1.9 million [1.1–2.8 million]	26
	2003	1.6 million [950 000–2.4 million]	25
East Asia	2005	160 000 [82 000–260 000]	18
	2003	120 000 [59 000–190 000]	17
Oceania	2005	39 000 [20 000–62 000]	55
	2003	27 000 [14 000–43 000]	44
Latin America	2005	580 000 [420 000–770 000]	32
	2003	510 000 [370 000–680 000]	32
Caribbean	2005	140 000 [88 000–250 000]	50
	2003	140 000 [87 000–250 000]	50
Eastern Europe and Central Asia	2005	440 000 [300 000–620 000]	28
	2003	310 000 [210 000–430 000]	26
Western and Central Europe	2005	190 000 [140 000–240 000]	27
	2003	180 000 [150 000–220 000]	27
North America	2005	300 000 [150 000–440 000]	25
	2003	270 000 [130 000–400 000]	25
TOTAL	2005	17.5 million [16.2–19.3 million]	46
	2003	16.5 million [15.2–18.2 million]	47

NEW DEVELOPMENTS

The epidemic continues to intensify in southern Africa (see pages 20–25). HIV infection levels among pregnant women are 20%—or higher—in six southern African countries (Botswana, Lesotho, Namibia, South Africa, Swaziland and Zimbabwe). In two of them (Botswana and Swaziland), infection levels are around 30%. South Africa's epidemic,

in Zimbabwe, though infection levels in pregnant women remain exceptionally high (at 21% in 2004). Great effort will be needed to sustain the overall downward trend.

In East Africa, where historically HIV prevalence has been considerably lower than in countries

Indications are that some of the treatment gaps will narrow further in the immediate years ahead, but not at the pace required to effectively contain the epidemic... gaining the upper-hand against AIDS epidemics around the world will require rapid and sustained expansion in HIV prevention.

one of the largest in the world, shows no sign of relenting. In neighbouring Mozambique, HIV infection levels are rising alarmingly. There are hopeful signs of declining national HIV prevalence

further south, the decline in HIV prevalence among pregnant women seen in Uganda since the mid-1990s is now evident in urban parts of Kenya, where infection levels are dropping. In

both countries, behavioural changes probably have contributed to these trends. They remain exceptional cases, though: elsewhere in East (as in West and Central) Africa, HIV prevalence has remained stable in the past several years.

Several of the epidemics in Asia and Oceania are increasing (see pages 31-44 and 74-75), particularly in China, Papua New Guinea and Viet Nam.

However, over one million people in low-and middle-income countries are now living longer and better lives because they are on antiretroviral treatment. Because of the recent treatment scale-up since the end of 2003, between 250 000 and 350 000 deaths were averted in 2005. The full effects of the dramatic treatment scale-up during 2005 will only be seen in 2006 and subsequent years.

Achieving universal access will require coordination of different approaches.

There are also alarming signs that other countries—including Pakistan and Indonesia—could be on the verge of serious epidemics. Across Asia, the epidemics are propelled by combinations of injecting drug use and commercial sex. Only a handful of countries are making serious-enough efforts to introduce programmes focusing on these risky behaviours on the scale required. The same applies in Eastern Europe and Central Asia, where the number of people living with HIV rose in 2005, and in the Americas, where growing numbers of women, especially those living in poverty, are being affected (see pages 45-52 and 65-69).

NARROWING THE GAPS

AIDS responses have grown and improved considerably over the past decade. But they still do not match the scale or the pace of a steadily-worsening epidemic.

In the past two years, access to antiretroviral treatment has improved markedly. It is no longer only in the wealthy countries of North America and Western Europe that persons in need of treatment have a reasonable chance of receiving it. Treatment coverage in countries such as Argentina, Brazil, Chile and Cuba now exceeds 80%. Despite progress in some places, however, the situation is different in the poorest countries of Latin America and the Caribbean, in Eastern Europe, most of Asia and virtually all of sub-Saharan Africa. At best, one in ten Africans and one in seven Asians in need of antiretroviral treatment were receiving it in mid-2005.

Indications are that some of the treatment gaps will narrow further in the immediate years ahead, but not at the pace required to effectively contain the epidemic. It has long been recognized that gaining the upper hand against AIDS epidemics around the world will require rapid and sustained expansion in HIV prevention. In fact, the goal must be to ensure that countries everywhere come as close as possible to achieving universal access to HIV prevention, treatment, care and impact mitigation.

Achieving universal access will require co-ordination of different approaches. Prevention, treatment, care and impact mitigation goals will have to be pursued simultaneously, not sequentially or in isolation from each other. Countries will need to focus on programme implementation, including strengthening of human and institutional resources, and initiate strategies that allow for the greatest possible level of integration of services.

All of this must be done with great urgency. But it forms part of a larger, more long-term challenge. Bringing AIDS under control will require tackling with greater resolve the underlying factors that fuel these epidemics—including societal inequalities and injustices. It will require overcoming the still serious barriers to access that take the form of stigma, discrimination, gender inequality and other human rights violations. It will also require overcoming the new injustices created by AIDS, such as the orphaning of generations of children and the stripping of human and institutional capacities. These are extraordinary challenges that demand extraordinary responses.

INTENSIFYING PREVENTION: THE ROAD TO UNIVERSAL ACCESS



In 2005, there were close to five million new HIV infections worldwide, 3 200 000 of these in sub-Saharan Africa alone. In the same year, three million people died of AIDS-related diseases; more than half a million (570 000) were children. Today the total number of people living with HIV stands at 40.3 million, double the number (19.9 million) in 1995. Despite progress made in a small but growing number of countries, the AIDS epidemic continues to outstrip global efforts to contain it.

The inescapable fact is that, as more people become infected with HIV, more people will die of AIDS. The number of people receiving HIV antiretroviral therapy in low and middle income countries has tripled since the end of 2001. Yet, at best, only one person in ten in Africa and one in seven in Asia in need of antiretroviral treatment were receiving it in mid-2005. Efforts to rapidly expand and sustain access to antiretroviral treatment and care will be undermined if the spiralling cycle of new HIV infections is not broken.

To get ahead of the epidemic, there is growing recognition that HIV prevention efforts must be scaled up and intensified (UNAIDS, 2005), as part of a comprehensive response that simultaneously expands access to treatment and care. Only through these fundamental efforts coupled with increased global and national commitment will the world be able to achieve universal access, and truly begin to get ahead of AIDS.

HIV PREVENTION WORKS—BUT NEEDS INTENSIFYING

The challenges are immense. Worldwide, less than one in five people at risk of becoming infected with HIV has access to basic prevention services (UNAIDS, 2004). Of people living with HIV only one in ten has been tested and knows that he or she is infected.

There is ample evidence that HIV does yield to determined and concerted intervention. Sustained efforts in diverse settings have helped bring decreases in HIV incidence among men who have sex with men in many Western countries, among young people in Uganda, among sex workers and their clients in Thailand and Cambodia, and among injecting drug users in Spain and Brazil. Now there is new evidence that prevention programmes initiated some time ago are currently helping to bring down HIV prevalence in Kenya and Zimbabwe, as well as in urban Haiti.

But too often, prevention strategies are lacking sufficiency of scale, intensity and long-term vision. For prevention interventions to give the results necessary to get ahead of the epidemic, projects with short-term horizons must translate into long-term programmatic strategies.

microbicides and the improvement of existing products such as the female condom—that will provide additional options for the response and should become part of comprehensive prevention strategies. Longer-term vaccine development is also necessary.

Where intensive efforts have worked

Studies show that HIV prevention efforts work best when they are intensive, i.e. comprehensive and long term. For example, intensive prevention programmes in the Mbeya region of Tanzania led to an increase in the use of condoms and the treatment of sexually transmitted infections between 1994 and 2000. Those changes were accompanied by a decline in HIV prevalence among 15–24 year-old women from 21% to 15% in the same period (Jordan-Harder et al., 2004). But in the Mwanza region of the country, less intensive and isolated HIV prevention efforts did not yield similar results; in fact, HIV prevalence increased in this area from 6% in 1994–1995, to 8% in 1999–2000 (Mwaluko et al., 2003).

There is no single AIDS epidemic. Even within a country itself, epidemics can be extremely diverse. Therefore prevention strategies need to address the diversity of epidemics and must be evidence informed, through accurate epidemiological and behavioural information.

To ensure a comprehensive response to HIV, treatment and prevention efforts should be accelerated simultaneously.

However, fundamental to all settings are comprehensive prevention strategies that include scale, intensity, consistency and sustainability as core requirements. All strategies must also recognize that HIV prevention and treatment are interlinked and that both should be simultaneously accelerated.

There are other basic approaches that can be applied to all HIV prevention efforts. First is the need to acknowledge that HIV prevention is a classic “public good” intervention that requires national governments to take the lead (including resource allocation) in building a strong response to the epidemic.

Second is the need to ensure that all HIV prevention strategies take into account the growing linkages between AIDS and factors that put people at greater risk of HIV infection, such as poverty, gender inequality, and social marginalization of specific populations.

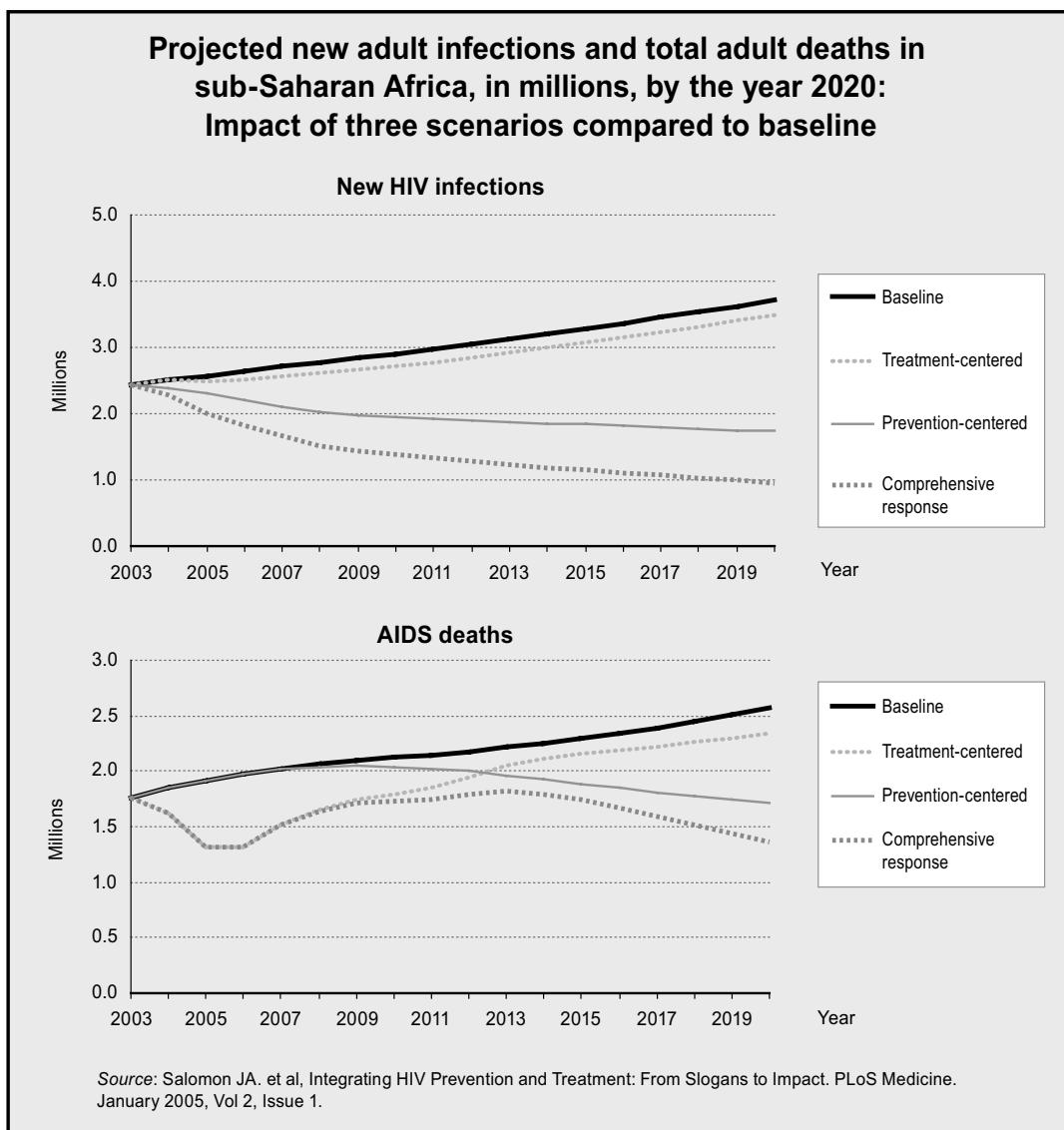
Equally important is the development and implementation of new technologies—such as

A broad approach across all prevention strategies also requires that stigma and discrimination is addressed, that those most at risk of HIV infection are effectively reached, and that people living with HIV are engaged more fully in the AIDS response.

PREVENTION AND TREATMENT ARE ESSENTIAL PARTNERS

To ensure a comprehensive response to HIV, treatment and prevention efforts should be accelerated simultaneously. Mathematical modelling comparing a range of scenarios shows that in the scenario in which effective prevention and treatment are scaled up jointly, the benefits, both in terms of new HIV infections and deaths averted are greatest (Salomon et al., 2005) The conclusions are clear:

- successful HIV treatment can create a more effective environment for HIV prevention;
- intensified HIV prevention is needed to make HIV treatment affordable and sustainable; and
- sustained progress in the response against AIDS will only be attained by intensifying HIV prevention and treatment simultaneously.

**Figure 2**

In sub-Saharan Africa, a comprehensive prevention and treatment package would avert 55% of the new infections that otherwise could be expected to occur until 2020 (see Figure above from Salomon et al., 2005).

Evidence and experience show that rapidly increasing the availability of antiretroviral therapy leads to greater uptake of HIV testing. Kenya, for example, has seen a dramatic increase in testing and counselling uptake in 2000–2004, while in Brazil uptake increased more than threefold in 2001–2003 (WHO, “3 by 5” Progress Report, June 2005). Uganda has had similar experiences. After being forced to close due to a lack of clients, a counselling and testing clinic in Masaka, Uganda, reopened in 2002 when an antiretroviral treatment programme began at the same hospital. Within a few months, more than 5000 people had sought

and received voluntary counselling and testing—a seventeenfold increase over the figure for the year 2000 (Mpiima et al., 2003). This provided health workers with opportunities to educate people about HIV prevention, tailored to their HIV test results.

Availability of treatment and enhanced community outreach can lead to more openness about AIDS, which can help break down stigma and discrimination. A health survey conducted after the introduction of an antiretroviral programme in Khayelitsha, South Africa, found higher condom use, willingness to join AIDS clubs, and readiness to be tested for HIV than in any of the seven other sites surveyed (WHO, 2003).

But greater treatment access also brings new challenges. There is evidence of increases in

unsafe sexual behaviour coinciding with wide-scale antiretroviral access in several high income countries (U.S. Centers for Disease Control and Prevention, 2002; Stolte et al., 2004). There is a need for stronger operational research to improve our understandings of changing prevention needs, challenges and opportunities.

PUTTING HIV INTO CONTEXT

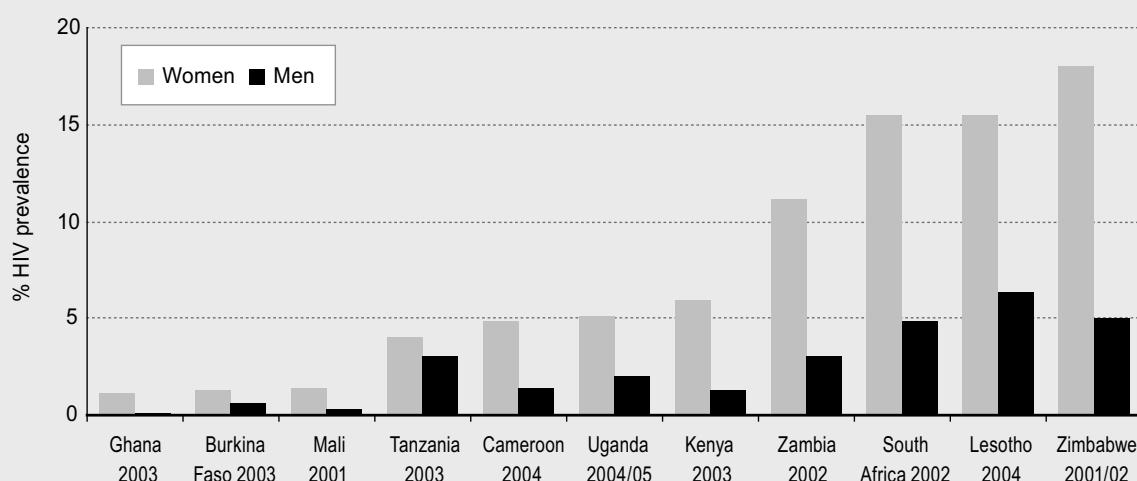
To be effective, HIV prevention programmes must address the contexts in which people live their lives.

The rights and status of women and young girls deserve special attention. Around the world—

are women (WHO Regional Office for Africa, 2003; Reproductive Health Research Unit and Medical Research Unit, 2004), while in sub-Saharan Africa overall, young women between 15 and 24 years old are at least three times more likely to be HIV-positive than young men (UNAIDS, 2004).

In many countries, marriage, and women's own fidelity are not enough to protect them against HIV infection. Among women surveyed in Harare (Zimbabwe), Durban and Soweto (South Africa), 66% reported having one lifetime partner, 79% had abstained from sex at least until the age of 17 (roughly the average age of first sexual encounter in most countries in the world). Yet, 40% of the young women were HIV-positive (Meehan et al.,

HIV prevalence among 15–24 year-old men and women, selected countries in sub-Saharan Africa, 2001–2005



Sources: Demographic and Health Surveys. ORC Macro (Ghana, Burkina Faso, Mali, United Republic of Tanzania, Cameroon, Lesotho, Kenya, Zambia); Department of Health, Uganda HIV/AIDS sero-behavioural survey 2004–2005 (Uganda); Ministry of Health and Child Welfare, Zimbabwe National Family Planning Council, National AIDS Council, and CDC, The Zimbabwe Young Adult Survey 2001–2002 (Zimbabwe); Pettifor AE, et al. HIV and sexual behaviour among young South Africans: a national survey of 15–24 year olds (South Africa).

Figure 3

from sub-Saharan Africa and Asia to Europe, Latin America and the Pacific—an increasing number of women are being infected with HIV. It is often women with little or no income who are most at risk. Widespread inequalities including political, social, cultural and human security factors also exacerbate the situation for women and girls.

In several southern African countries, more than three quarters of all young people living with HIV

2004). Many had been infected despite staying faithful to one partner. In Colombia, 72% of the women who tested HIV-positive at an antenatal site reported being in stable relationships. In India, a significant proportion of new infections is occurring in women who are married and who have been infected by husbands who (either currently or in the past) frequented sex workers. (see Asia chapter following).

Evidence suggests that sexual and other forms of abuse against women and girls—whether at the hands of intimate partners or strangers—increase their chances of becoming infected with HIV. High levels of sexual violence against women and girls have been reported in countries around the world. When surveyed, between one third and one half of women in Bangladesh, Brazil, Ethiopia, Namibia and Thailand, for example, said their partners had physically and/or sexually assaulted them (WHO, 2005). If HIV-prevention activities are to succeed, they need to occur alongside other efforts, such as legal reform (including property rights) and the promotion of women's rights that address and reduce violence against women and girls (Maman et al., 2000).

HIV stigma and the resulting actual or feared discrimination have proven to be perhaps the most difficult obstacles to effective HIV prevention.

It is equally important to engage men and boys in HIV prevention efforts for a long-standing impact on gender inequalities. Involving men is important not only because they often control women's and girl's degrees of vulnerability to HIV but also because societal norms about masculinity and gender may heighten men's vulnerability to HIV if they encourage men to engage in behaviours that put their health at risk and deny them needed protective information and services. Men, like women, are influenced by traditional gender norms. These need to be challenged and changed if both men and women are to be protected from HIV infection and if men are to be encouraged to play a more responsible role in HIV prevention. Special attention needs to be paid to boys in terms of their socialization towards gender norms (UNAIDS, 2005).

Prevention programme efforts must also address people of all ages to be fully effective. An emerging trend of rising infection rates among older generations in some countries may point to an important gap in prevention efforts with this age group. In South Africa, the rise in HIV prevalence among women older than 34 years is particularly striking and in Botswana, similar patterns are emerging—among pregnant women aged 15–24, HIV infections have remained steady

since 1999, but among their counterparts 25 years and older, prevalence has been rising constantly since 1992 and reached 43% when last measured in 2003. Infection levels among older men and women in Botswana were unexpectedly high: 29% for those 45–49 years old and 21% for those in their early 50s.

STIGMA AND DISCRIMINATION: THE UNDERMINING FACTOR

HIV stigma and the resulting actual or feared discrimination have proven to be perhaps the most difficult obstacles to effective HIV prevention. Stigma and discrimination simultaneously

reduce the effectiveness of efforts to control the global epidemic and create an ideal climate for its further growth.

HIV stigma stems from fear as well as associations of AIDS with sex, disease and death, and with behaviours that may be illegal, forbidden or taboo, such as pre- and extramarital sex, sex work, sex between men, and injecting drug use. Stigma also stems from lack of awareness and knowledge about HIV. Such stigma can fuel the urge to make scapegoats of, and blame and punish, certain people or groups. Stigma taps into existing prejudices and patterns of exclusion and further marginalizes people who might already be more vulnerable to HIV infection. Fear of stigma can also dissuade people living with HIV from playing a vital front role in HIV prevention efforts.

Stigma prompts people to act in ways that directly harm others and deny them services or entitlements—actions that take the form of HIV-related discrimination. Stigma prevents many people from negotiating safer sex, taking an HIV test, disclosing their status to their partners or seeking treatment, even when prevention services are made available. In Uganda, for example, more than half the women and just under half the men surveyed indicated that they would prefer not to

Involvement of people living with HIV in prevention efforts

People living with HIV are some of the greatest champions for HIV prevention. Since the beginning of the epidemic prevention strategies have been more effective when they have meaningfully involved people living with HIV in their design, implementation and evaluation. The principle of the Greater Involvement of People Living with HIV/AIDS (GIPA) in the AIDS effort was formally recognized at the 1994 Paris AIDS Summit, when 42 countries agreed that ensuring their full involvement at national, regional and global levels will stimulate the creation of supportive political, legal and social environments. HIV prevention strategies have, however, often failed to address the distinct prevention needs of people diagnosed with HIV or to build capacity for their meaningful participation. Their involvement has often been relegated to little more than tokenism. An effective response requires that this should change.

The aim of prevention for people living with HIV is to empower them to avoid acquiring new sexually transmitted infections, delay HIV disease progression and avoid passing HIV to others. Prevention counselling strategies increase knowledge of HIV transmission and improve safer sex negotiation skills. Other HIV prevention strategies also include scaling up, focusing and improving services and commodity delivery; services for serodiscordant couples; protecting human rights; strengthening community capacity for mobilization; and supporting advocacy, policy change and community awareness (International HIV/AIDS Alliance, 2003). These strategies do not stand alone, but work in combination.

disclose their HIV status to a family member (Ministry of Health Uganda, 2005). A survey of young people in Nairobi, Kenya, and in Kampala and Masaka, Uganda, indicated that real and perceived lack of confidentiality was as much a deterrent to using voluntary testing and counselling services as affordability.

PREVENTING HIV AMONG MARGINALIZED GROUPS

Those pushed to the margins of society are at particular risk. Preventing infections here can play a significant role in stemming the rate of spread in many parts of the world. Key marginalized populations include sex workers, injecting drug users, prisoners, and men who have sex with men.

Sex-worker projects such as those pioneered in the Sonagachi area of Kolkata, India, have shown that intensive, targeted programming can lead to the reduction of risk of HIV infection (see pages 33 to 34). On a larger scale, Thailand managed to reduce new HIV infections from 140 000 in 1991 to 21 000 in 2003 by focusing its HIV strategy on reducing risky commercial sex (see page 40). Similar, though less dramatic accomplishments are evident in Cambodia (where adult national HIV prevalence declined from 3% in 1997 to 1.9% in 2003) and Senegal (where HIV prevalence

has been kept low and steady for a decade now) where intensive programming for sex workers was also implemented. However, despite islands of success, global prevention coverage for sex workers is low. In the Eastern Mediterranean, for example, only 0.5% of sex workers are covered by any HIV-prevention programme (USAID et al., 2004).

Injecting drug use is propelling epidemics in numerous countries, including India, Indonesia, Iran, Libya, Pakistan, Spain, Ukraine, Uruguay and Viet Nam. Overlapping networks of sex workers and clients and injecting drug users are providing additional momentum in some countries. However, despite some evidence of the success of harm-reduction programmes in countries such as Brazil and Spain, prevention strategies for injecting drug users are not being implemented on a wide enough scale to make a lasting difference in many countries. Comprehensive strategies that include elements such as condom provision and substitution therapy, aimed at injecting drug users as well as their sexual partners, need to be scaled up urgently.

Approximately 10 million people are in prisons across the world today. In most countries, the levels of HIV infection among prison populations tend to be significantly higher than in the general population. In the Russian Federation, the prison system has been disproportionately affected by

the epidemic. HIV prevalence in the country's prisons is estimated to be at least four times higher than in the wider population. In Iran, incarceration appears to be the biggest risk factor for HIV infection. These findings underscore the need to introduce a comprehensive response to HIV within prisons (see the following Eastern Europe and Central Asia chapter).

The prominent role that sex between men plays in many epidemics—including in Latin America, the Caribbean, Asia, Central Europe and, possibly to a lesser extent, in Eastern Europe and Africa—is not adequately studied or addressed.

Public information campaigns about sexually transmitted infections and the spread of HIV should be strengthened.

Most parts of the world lack the epidemiological and behavioural data needed to inform effective prevention programmes for men who have sex with men. What data do exist indicate high levels of infection levels among men who have sex with men. HIV prevalence as high as 17% has been found in men who have sex with men in Bangkok, Thailand, and Mumbai, India, for example, while in Bogotá, Colombia, prevalence of 20% has been found (Montano et al., 2005). Even in places where data exist indicating men who have sex with men are severely affected by HIV, their prevention needs have been largely ignored in many countries.

Other populations including young people, women and girls, people living in poverty, migrant labourers, people in conflict and post-conflict situations, and refugees and internally displaced persons also need scaled-up interventions that increase their access to prevention, treatment and care information and services, taking into account their special vulnerabilities.

SEXUALLY TRANSMITTED INFECTIONS AND THE SPREAD OF HIV

Preventing and treating sexually transmitted infection reduces the risk of HIV transmission. This is especially true for members of populations who are most likely to have a high number of sex partners, such as sex workers and their clients. Yet

prevention and treatment of sexually transmitted infections remain a poorly exploited element of potentially successful prevention strategies, not least in sub-Saharan Africa.

Infection with other sexually transmitted infections—such as syphilis, gonorrhoea, Chlamydia, trichomoniasis and genital herpes—increases the chance that HIV will be transmitted during unprotected sex between an infected and an uninfected partner. In sub-Saharan Africa, for example, infection with the viral HSV2 (herpes simplex virus type 2) appears to be strongly associated with HIV infection (Auvert et al.,

Public information campaigns about sexually transmitted infections and the spread of HIV should be strengthened.

2001; Hayes et al., 1998; McFarland et al 1999). HSV2, which is incurable, causes periodic genital ulcers throughout life. Studies in Zimbabwe and Tanzania suggest that the two viruses favour each other, with each boosting the odds that a person will contract and transmit the other (McFarland et al., 1999; Del Mar et al., 2002). Some studies have also suggested an association exists between infection with bacterial vaginosis (a common vaginal infection in women of childbearing age) and HIV. New research from South Africa suggests that infection with bacterial vaginosis could double a woman's susceptibility to HIV infection (Myer et al., 2005).

The male latex condom is the most efficient available technology to reduce the sexual transmission of HIV and other sexually transmitted infections (UNAIDS/UNFPA/WHO, 2004). Most genital infections can be prevented by using condoms and many bacterial sexually transmitted infections (such as syphilis, gonorrhoea and Chlamydia) are easily and inexpensively treatable with antibiotics (UNAIDS, 2004a). Unfortunately, treatment programmes for sexually transmitted infections are in uneven operation in much of sub-Saharan Africa; most countries in the region are therefore not benefiting from the potential containing effect of sexually transmitted infection diagnosis and treatment on HIV infection rates. Young people in particular tend to know very little about sexually transmitted infections. Those who suspect they might be infected are often

reluctant to seek treatment—for a multitude of reasons that include embarrassment, fear that their confidentiality would not be respected, anticipation of a reproaching and judgmental response from healthcare providers, and occasionally high treatment cost.

Public information campaigns about sexually transmitted infections and the spread of HIV should be strengthened, especially those directed at young people. Steps need to be taken to: ensure confidentiality at sexually transmitted infection treatment clinics; promote youth-friendly services; increase the numbers of treatment sites; and to integrate diagnosis and treatment of sexually transmitted infections into family planning and reproductive health services.

FOCUSING ON CHILDREN: STARTING LIFE FREE OF HIV

Without HIV prevention measures, about 35% of children born to HIV-positive women will contract the virus. The key to protecting children is preventing infection in parents. Prevention of mother-to-child transmission is a crucial entry point for primary prevention, treatment, care and support for mothers, their children and families. Ensuring availability of family planning services, provision of antiretroviral medicines to the mother and the newborn, safe delivery options, infant feeding counselling, and support are the key components of prevention of mother-to-child transmission programmes. Implementation of such a comprehensive approach has virtually eliminated HIV transmission from mothers to their infants in industrialized countries. In high-prevalence countries, however, AIDS is responsible for an increasing share of under-five mortality. In Africa, its share rose from 2% in 1990 to 6.5% in 2003 (WHO, 2005a).

Prevention of mother-to-child transmission services coverage is improving in many places (including Barbados, Botswana, Thailand, Ukraine, Uruguay and Zambia). However, it still falls far short in most of sub-Saharan Africa where prevention service coverage was about 5% in the 30 African countries with the highest HIV prevalence in 2003.

Obstacles to expanding prevention of mother-to-child transmission include inadequate prenatal care services, low knowledge of HIV status among pregnant women, and stigma and discrimination (UNAIDS, 2004a). Inadequate access to antiretroviral prophylaxis remains a major concern. In South Africa, for example, of some 33 000 pregnant women testing HIV-positive only 18 857 received antiretroviral prophylaxis. In Kenya and Mozambique, the proportion was similar. By contrast, in Uganda, Zambia and Zimbabwe almost all the women testing positive were reported to have received antiretroviral prophylaxis.

Other hurdles are even more basic. Large proportions of women offered prevention of mother-to-child transmission services are not receiving pre-test counselling. In Ghana and Tanzania, roughly one half the women received the counselling, while in Nigeria only one quarter did. In Burkina Faso, the proportion was a mere 18% and in Zambia just 13%. Notable exceptions were Benin, Kenya, Rwanda, South Africa, Uganda and Zimbabwe—where upwards of 70% of women offered prevention of mother-to-child transmission services also received pre-test counselling. In addition, considerable numbers of women in high-prevalence countries still do not know that HIV can be passed from mother to child. Such lack of knowledge complicates counselling, often in circumstances where health providers are already overburdened and short of time.

To avoid new infections among children, prevention of mother-to-child transmission services should be scaled up to ensure that there is high-quality national coverage.

ACCESS FOR ALL

In recent years, international consensus on the need for a comprehensive response to HIV comprising prevention, treatment and care has strengthened. Political will has increased, as has advocacy by civil society groups. International and national funding available to the response to AIDS has greatly increased. These advances present an important opportunity to further intensify efforts and increase the momentum towards universal

access to prevention, treatment and care for all countries affected by AIDS.

In June 2005, the UNAIDS governing Board comprising member states, cosponsoring UN agencies and civil society endorsed a policy position paper for intensifying HIV prevention

with the ultimate aim of achieving universal access to HIV prevention, treatment and care. This policy position paper included a compendium of proven programmes and actions that could be used to close the prevention gap as well as 12 essential policy actions that would be needed to ensure universal access (see below).

The UNAIDS Policy Position Paper for Intensifying HIV Prevention details essential policy and programmatic actions for HIV prevention.

Essential policy actions for HIV prevention

1. Ensure that human rights are promoted, protected and respected and that measures are taken to eliminate discrimination and combat stigma.
2. Build and maintain leadership from all sections of society, including governments, affected communities, nongovernmental organizations, faith-based organizations, the education sector, media, the private sector and trade unions.
3. Involve people living with HIV, in the design, implementation and evaluation of prevention strategies, addressing the distinct prevention needs.
4. Address cultural norms and beliefs, recognizing both the key role they may play in supporting prevention efforts and the potential they have to fuel HIV transmission.
5. Promote gender equality and address gender norms and relations to reduce the vulnerability of women and girls, involving men and boys in this effort.
6. Promote widespread knowledge and awareness of how HIV is transmitted and how infection can be averted.
7. Promote the links between HIV prevention and sexual and reproductive health.
8. Support the mobilization of community-based responses throughout the continuum of prevention, care and treatment.
9. Promote programmes targeted at HIV prevention needs of key affected groups and populations.
10. Mobilizing and strengthening financial, and human and institutional capacity across all sectors, particularly in health and education.
11. Review and reform legal frameworks to remove barriers to effective, evidence based HIV prevention, combat stigma and discrimination and protect the rights of people living with HIV or vulnerable or at risk to HIV.
12. Ensure that sufficient investments are made in the research and development of, and advocacy for, new prevention technologies.

Essential programmatic actions for HIV prevention

1. Prevent the sexual transmission of HIV.
2. Prevent mother-to child transmission of HIV.
3. Prevent the transmission of HIV through injecting drug use, including harm-reduction measures.
4. Ensure the safety of the blood supply.

5. Prevent HIV transmission in healthcare settings.
6. Promote greater access to voluntary HIV counselling and testing while promoting principles of confidentiality and consent.
7. Integrate HIV prevention into AIDS treatment services.
8. Focus on HIV prevention among young people.
9. Provide HIV-related information and education to enable individuals to protect themselves from infection.
10. Confront and mitigate HIV-related stigma and discrimination.
11. Prepare for access and use of vaccines and microbicides.

The UNAIDS Board's view has been underscored by recent global political commitments. At the 2005 G8 Summit in Gleneagles, members committed to develop and implement a package of HIV prevention, treatment and care, with the aim of achieving as closely as possible universal access to treatment for all those who need it by 2010. The United Nations General Assembly 2005 World Summit Outcome Document also adopted the concept of scaling up towards universal access.

These statements reinforce the view that intensifying prevention efforts while expanding treatment and care goals must happen simultaneously, not sequentially or one in isolation from the other.

The sustained availability of a comprehensive range of programmes and tools known to be effective is key to ensuring universal access. Programmes should be selected and implemented based on in-country experience and evidence, as well as the adaptation of "best practice" approaches

from other countries. It has been estimated that implementation of comprehensive HIV prevention programmes could avert 29 million (or 63%) of the 45 million new infections expected to occur between 2002 and 2010 (Stover et al., 2002)). Comprehensive HIV prevention programmes, when jointly undertaken with comprehensive provision of treatment and care, have the greatest impact in terms of averting new HIV infections and deaths (Salomon et al., 2005).

AIDS requires an intelligent, forceful and exceptional response. Uncoordinated efforts or those that provide only partial solutions will not bring about a significant reduction in the number of new infections. Slowing and stopping the spread of this global epidemic urgently requires universal access to prevention, treatment and care together. If the world mobilizes in this way to simultaneously and aggressively expand HIV prevention, treatment and care, we could achieve a truly comprehensive approach to AIDS that could contain and reverse the epidemic.

New prevention methods: innovation for Universal Access

Female condoms

Although shown to be effective in prevention of pregnancy and acceptable to users, the female condom has not achieved its full potential in national programmes because of its relatively high cost. A new version of the Reality® female condom is made of synthetic nitrile, which makes it considerably less expensive. The new device has the potential for wider acceptability and utilization. It is hoped that, if high utilization rates of the new device can be achieved, it will make a substantial contribution to prevention of unwanted pregnancy and sexually transmitted infections, including HIV. In addition to the new female condom, trials are also under way to test the effectiveness of diaphragms and other methods of protecting the cervix for HIV/STI prevention. Results are expected in 2006.



Male circumcision

A recent study in South Africa found that circumcised men were at least 60% less likely to become infected than uncircumcised men. These promising results must be confirmed in ongoing studies in Kenya and Uganda before male circumcision can be promoted as a specific HIV prevention tool. If proven effective, male circumcision may help increase available proven options for HIV prevention, but should not cause the abandonment of existing effective strategies such as correct and consistent condom use, behavioural change and voluntary testing and counselling. Male circumcision does not eliminate the risk of HIV for men and the effects of male circumcision on women's risk of HIV are not known. It also remains to be demonstrated whether and to what degree circumcision could reduce HIV transmission in cultures where it is not currently practised.

Microbicides

Microbicides offer the best promise of a prevention tool women can control. They could have a substantial impact on the epidemic. Currently, the HIV microbicide field has four candidate microbicides entering or in phase III trials, five in phase II, and six in phase I. They include soaps, acid buffering agents, seaweed derivatives and anti-HIV compounds. Modelling indicates that even a 60%-efficacious microbicide could have considerable impact on HIV spread. If used regularly by just 20% of women in countries with substantial epidemics, hundreds of thousands of new infections could be averted over three years (Rockefeller, 2001).

Pre-exposure prophylaxis

Pre-exposure prophylaxis (PrEP) to prevent sexual—and possibly parenteral—transmission of HIV holds promise for serodiscordant couples, sex workers, men who have sex with men and injecting drug users who may be exposed to HIV despite using precautions. Small-to-medium sized phase II trials are under way in Atlanta and San Francisco, with larger phase II/III studies under way or planned in Botswana, Ghana, and possibly Thailand. Some of these studies have been dogged by controversy. The main issues were the adequacy of pre-trial community consultation and informed consent, linkages to HIV treatment programmes for those found to be infected at baseline or in the course of the study, and—in the case of Thailand—the lack of access to sterile needles in a study designed to examine HIV transmission among injecting drug users. Two PrEP studies were cancelled (Cambodia, Nigeria) and another (Cameroon) postponed. A consultation in Seattle and a series of consultations led by UNAIDS in two African regions, Asia and Geneva involving community activists, researchers, sponsors and others helped identify the problems in trial design in this promising research area. Trials have moved forward in six other sites.

Vaccines

A vaccine to overcome HIV is our most compelling hope. But developing a vaccine remains an enormous challenge for reasons related to inadequate resources, clinical trial and regulatory capacity concerns, intellectual property issues and scientific challenges. There are now 17 vaccine candidates in phase I trials and four vaccines in phase I/II (including the promising Merck adenovirus vector vaccine now in phase IIb, which may stimulate anti-HIV cell-mediated immunity). There is only one in phase III (the NIH/Department of Defense's ALVAC vCP 1521 canary pox vector/AIDSVAX prime-boost vaccine trial now under way in Thailand). The Global HIV Vaccine Enterprise has rallied scientists, activists, funders and others worldwide around a Strategic Scientific Plan to rapidly advance progress towards effective HIV vaccines, the world's best long-term hope for bringing the global HIV epidemic under control.

Sub-Saharan Africa

HIV and AIDS statistics and features, in 2003 and 2005

	Adults and children living with HIV	Number of women living with HIV	Adults and children newly infected with HIV	Adult prevalence (%)[*]	Adult and child deaths due to AIDS
2005	25.8 million [23.8–28.9 million]	13.5 million [12.5–15.1 million]	3.2 million [2.8–3.9 million]	7.2 [6.6–8.0]	2.4 million [2.1–2.7 million]
2003	24.9 million [23.0–27.9 million]	13.1 million [12.1–14.6 million]	3.0 million [2.7–3.7 million]	7.3 [6.7–8.1]	2.1 million [1.9–2.4 million]

Sub-Saharan Africa has just over 10% of the world's population, but is home to more than 60% of all people living with HIV—25.8 million [23.8 million–28.9 million]. In 2005, an estimated 3.2 million [2.8 million–3.9 million] people in the region became newly infected, while 2.4 million [2.1 million–2.7 million] adults and children died of AIDS. Among young people aged 15–24 years, an estimated 4.6% [4.2–5.5%] of women and 1.7% [1.3–2.2%] of men were living with HIV in 2005.

Declines in adult national HIV prevalence appear to be underway in three sub-Saharan African countries: **Kenya**, **Uganda** and **Zimbabwe**.¹ With the exception of Zimbabwe, countries of southern Africa show little evidence of declining epidemics. HIV prevalence levels remain exceptionally high (except for Angola), and might not yet have reached their peak in several countries—as the expanding epidemics in **Mozambique** and **Swaziland** suggest. West and Central Africa (where estimated national

HIV prevalence is considerably lower than in the south and east of the region) also show no signs of changing HIV infection levels, except for urban parts of **Burkina Faso** (where prevalence appears to be declining).

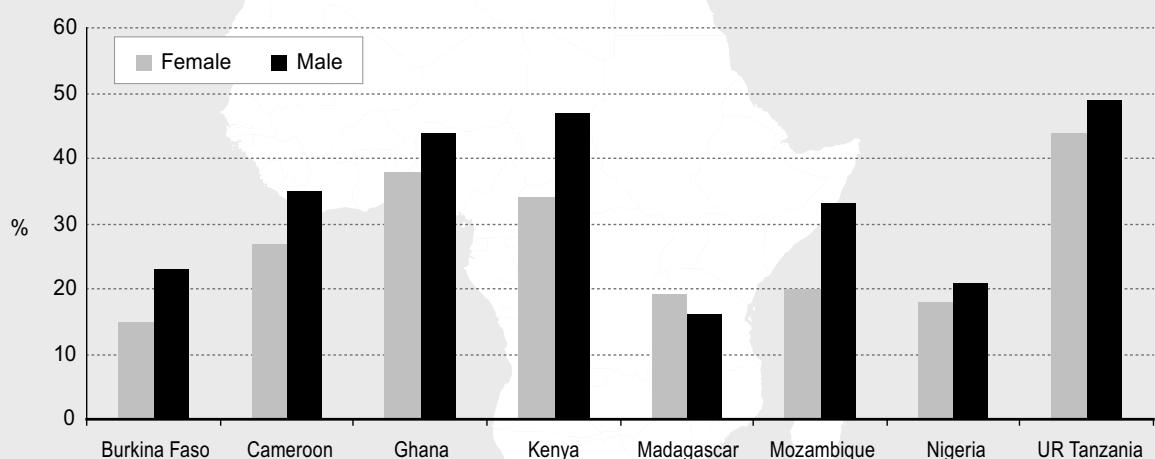
Just as it is inaccurate to speak of a single 'African' AIDS epidemic, national-level HIV prevalence data can sometimes prompt incomplete pictures of the actual state of affairs. In most countries, HIV prevalence observed among pregnant women attending antenatal clinics, for example, differ by wide margins, depending on the location. Such localized variance also highlights the adaptability of the epidemics, and their sensitivity to contextual factors—which prevention, treatment, care and impact-alleviating strategies need to reflect if they are to prove more effective. Prominent among those factors is the social and socioeconomic status of women, who remain disproportionately affected by HIV in this region and, at the same time, poorly informed about the epidemics (see box following).

¹ It is important to bear in mind that HIV prevalence presents a delayed picture of the epidemics, since they reflect HIV incidence patterns of several years previously. (HIV prevalence describes the total number of people living with HIV, irrespective of when they have been infected; incidence, on the other hand, refers to the rate at which new infections are occurring.) When epidemics have grown as intense and mature as they have in much of East and southern Africa, HIV prevalence data can yield ambiguous and confusing pictures of the epidemics. In such instances, stabilization of HIV prevalence does not necessarily mean the epidemic is slowing: it could signal a grievous equilibrium, where roughly equal numbers of people are being newly infected with HIV and are dying of AIDS.

Still too little knowledge

In much of sub-Saharan Africa, knowledge about HIV transmission routes is still low. Generally, women are less well-informed about HIV than are men; this is also true of rural areas compared with those living in cities and towns. This is the case even in the ten countries where more than one out of ten adults is infected.² In 24 sub-Saharan countries (including Cameroon, Côte d'Ivoire, Kenya, Nigeria, Senegal and Uganda), two thirds or more of young women (aged 15–24 years) lacked comprehensive knowledge of HIV transmission (various surveys, 2000–2004). Data from 35 of the 48 countries in sub-Saharan Africa show that, on average, young men were 20% more likely to have correct knowledge of HIV than young women. Education levels make a huge difference, too (UNICEF, 2004). For example, young women in Rwanda with secondary or higher education were five times as likely to know the main HIV transmission routes than were young women who with no formal education (Ministère de la santé Rwanda, 2001).

Percentage of young people aged 15–24 years who correctly identified major ways of preventing the sexual transmission of HIV*, 2003



*Using condoms and limiting sex to one faithful, uninfected partner, who reject the two most common local misconceptions about HIV transmission, and who know that a healthy looking person can transmit HIV.

Sources: Demographic and Health Surveys. ORC Macro (Burkina Faso, Cameroon, Ghana, Kenya, Madagascar, Mozambique and Nigeria); Tanzania HIV/AIDS Indicator Survey 2003–2004, TACAIDS, NBS, and ORC Macro (UR Tanzania)

Figure 4

Methodological issues

There is no practical way to determine *exactly* how many people in any given country are being infected with a virus such as HIV. Scientists gather pertinent data, refine various assumptions about the routes and pace of HIV transmission, and calibrate mathematical models that can approximate how many people are acquiring HIV and dying as a result of AIDS, for example (Ward et al., 2004). In mainly heterosexual AIDS epidemics, such as those in sub-Saharan Africa, the most commonly-used data for such calculations are gathered at a sample of antenatal clinics, where blood samples of pregnant women are anonymously tested for HIV. By definition, though, the data only reflect HIV prevalence among women who have had unprotected sex. Because of this, they are prone to overestimating HIV prevalence among young women (15–24 years old), significant proportions of whom are not yet sexually active. The data also do not provide *direct* evidence of prevalence among

² Botswana, Central African Republic, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, United Republic of Tanzania.

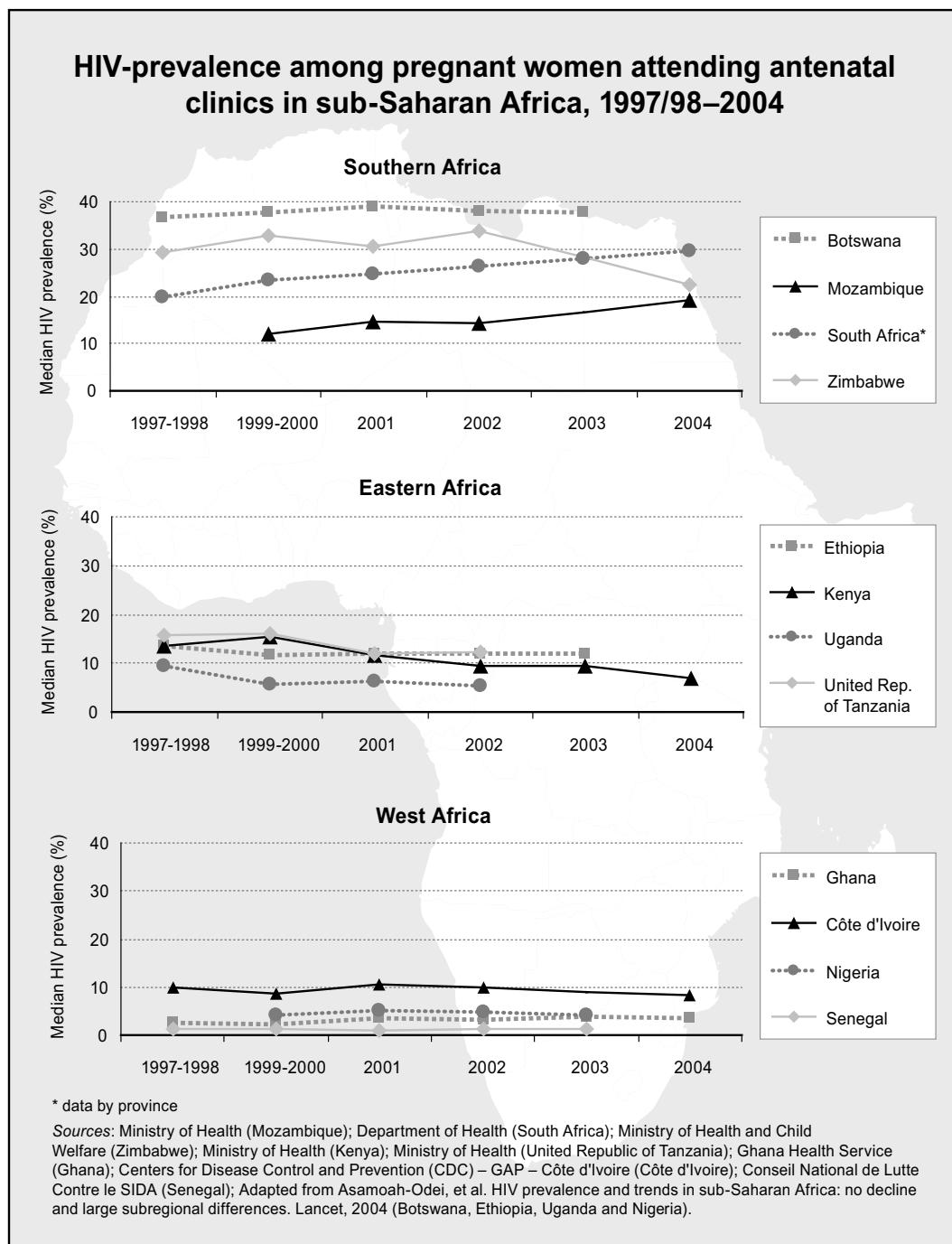


Figure 5

men, among women younger and older than child-bearing ages, nor among women who are not having unprotected sex. Often the sampled clinics are predominantly urban or peri-urban. These factors can lead to an overestimation of HIV infections. On the other hand, because HIV reduces fertility, data gathered by testing pregnant women might not reflect large numbers of women who are infected with the virus and are not able to become pregnant. Once adjusted accordingly with other relevant information and evidence-based assumptions, the data offer a basis for reasonably accurate estimations, which are presented within 'plausibility bounds' or 'ranges of uncertainty'.

Household surveys that include testing for HIV provide countrywide data on HIV prevalence for both sexes and for various age groups, and include samples from remote rural areas. They, too, are sometimes prone to inaccuracy. If a significant share of respondents refuse to be tested, or answer



only certain questions or are absent at the time of the survey, a potential bias is introduced into the survey data. This has been a recurrent issue in most of the household surveys carried out in African countries in recent years, where non-response rates of 8–42% have been reported. The estimates can be adjusted if the salient characteristics of non-responders are known. The surveys, however, usually do not reveal the possible association between a person's absence or refusal to participate, and that person's HIV status. It might be that a person's refusal to participate or his/her absence from the household is correlated with a stronger likelihood of HIV infection. There is a likelihood, therefore, that high non-response rates in household-based surveys could lead to underestimation of HIV prevalence.

Each of these methods has its strengths and weaknesses. Generally, estimates based on antenatal clinic data are a useful gauge of HIV infections trends among 15–49 year-olds. National household surveys, on the other hand, can reveal important information about the national prevalence level and about the spread of HIV, particularly among young people, men and residents in rural areas. Considered together, the various data can yield more accurate estimates of HIV infection levels and rates (and of other estimates, such as AIDS-related deaths). However, HIV and AIDS estimates (whether derived from household surveys or sentinel surveillance data) need to be assessed carefully, and the data and assumptions reviewed continually. The regional estimates presented in this chapter have incorporated both sources of information.

SOUTHERN AFRICA

Southern Africa remains the epicentre of the global AIDS epidemic. However, for the first time there are signs that one of the epidemics here could be ebbing.

New evidence shows a declining trend in national adult HIV prevalence in **Zimbabwe**. Recent data from the national surveillance system show a decline in HIV prevalence among pregnant women from 26% in 2002 to 21% in 2004. Other data indicate that the decline had already started

women (15–24 years)—which fell from 29% to 20% in 2000–2004—suggests that the rate of new HIV infections (incidence) could be slowing, too. Comparison of estimates of HIV incidence from studies among postnatal women and male factory workers in Harare, and low contemporary estimates for HIV incidence in rural Manicaland, all seem to confirm this trend (Hargrove et al., 2005; Mugurungi et al., 2005).

Changes in sexual behaviour appear to have contributed to the declines in HIV prevalence.

Changes in sexual behaviour appear to have contributed to the declines in HIV prevalence.

in 2000 (Ministry for Health and Child Welfare Zimbabwe, 2004 and 2005, forthcoming). Findings from local studies reinforce the national evidence. In Harare, HIV prevalence in women attending antenatal or postnatal clinics fell from 35% in 1999 to 21% in 2004. In rural eastern Zimbabwe, declines in HIV prevalence in pregnant women were also reflected in declines among both men and women in the general population (Mundandi et al., 2004). A significant decline in HIV prevalence among pregnant young

Condom use within casual partnerships has reached high levels (86% among men, and 83% among women) and data from recent national and local surveys indicate that there could have been a reduction in the reported number of sexual partners in recent years (Mahomva, 2004). Mortality rates are levelling off in some parts of the country, which further supports the view that declines in HIV incidence accelerated by changes in sexual behaviour are driving the apparent decline in prevalence.

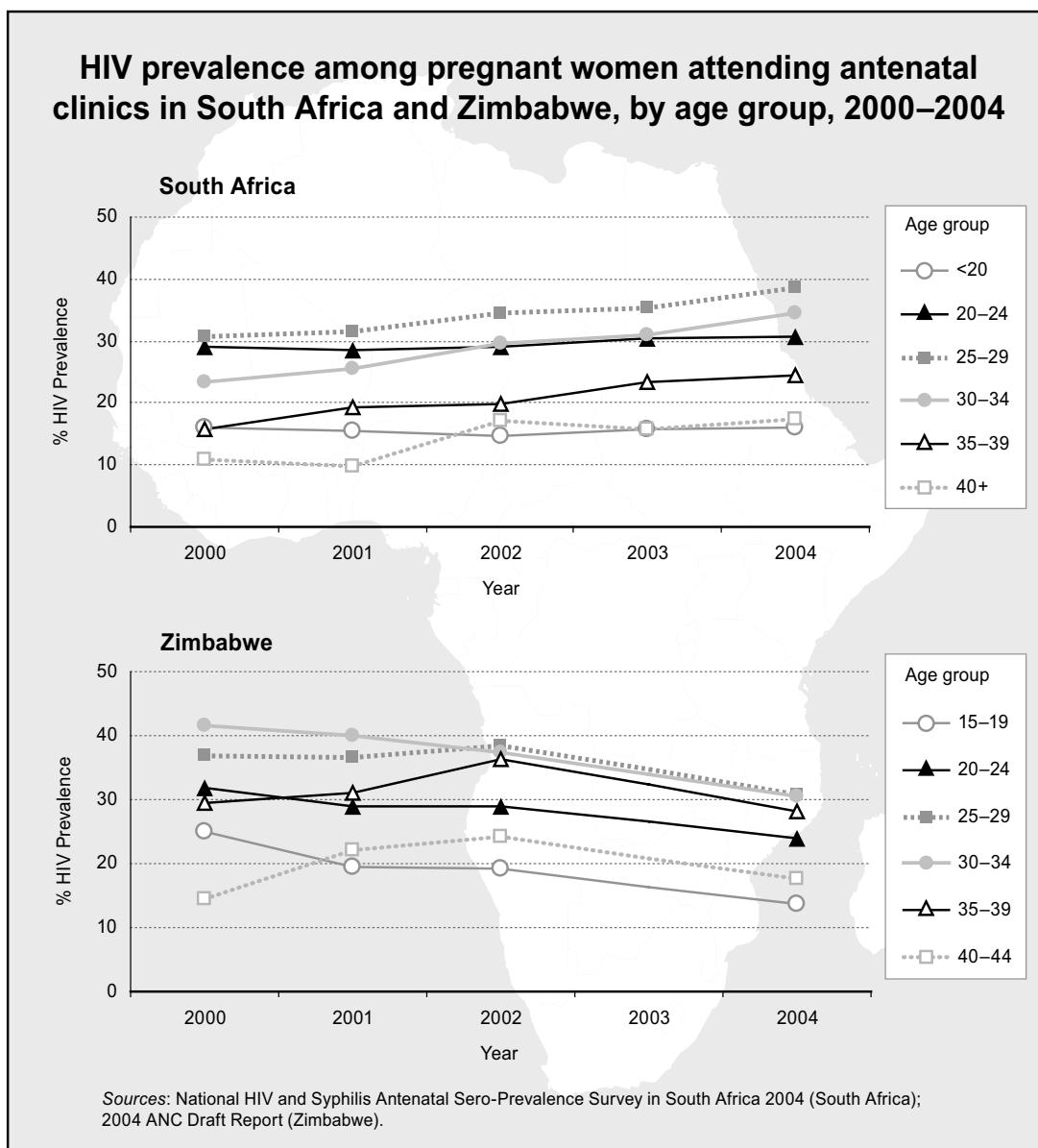


Figure 6

With over one in five pregnant women still testing HIV-positive, infection levels nevertheless remain among the highest in the world, underscoring the need to bolster prevention activities. Of special concern is the possibility that factors such as population mobility, spousal separations and livelihood insecurity following the forced displacement of several hundred thousand Zimbabweans in 2005 could reverse these recent trends (Human Rights Watch, 2005).

Unfortunately, there is no evidence yet of a national decline in other epidemics in southern Africa. New data from **South Africa** show HIV prevalence among pregnant women has reached its highest levels to date: 29.5% [range 28.5–30.5%] of women attending antenatal clinics

were HIV-positive in 2004 (Department of Health South Africa, 2005). Prevalence was highest among women aged 25–34 years—more than one in three of whom was estimated to be living with HIV. Among women aged 20–24 years, almost one in three was infected. In the country's worst-affected province, KwaZulu-Natal, prevalence has reached 40%, while it has remained exceptionally high at between 27% and 31% in the Eastern Cape, Free State, Gauteng, Mpumalanga and North West provinces.

These latest data underline an outstanding feature of South Africa's epidemic: the astonishing speed at which it has evolved. National adult HIV prevalence of less than 1% in 1990 rocketed to almost 25% within 10 years. Among pregnant women in their

late teens (15–19 years), HIV infection levels have remained at 15–16% since 2000, while among their 20–24 year-old counterparts those levels have stayed between 28% and 31% in 2000–2004 (Department of Health, 2005).

Having lagged behind most other epidemics in the subregion, AIDS in South Africa is now taking

no clear patterns of a decline in prevalence are evident. Swaziland's epidemic continues unabated. HIV prevalence among pregnant women soared to 43% in 2004, up from 34% four years earlier. In 1992, prevalence had stood at 4% (Ministry of Health and Social Welfare Swaziland, 2005). In Swaziland there is little regional variation in HIV prevalence measured



Figure 7

a devastating toll in human lives. A recent study of death registration data has shown that deaths among people 15 years of age and older increased by 62% in 1997–2002, with deaths among people aged 25–44 years more than doubling. Based on information from nearly 2.9 million death notification certificates, the study showed that more than one third of all deaths were among people in that age group (Statistics SA, 2005). AIDS is believed to be responsible for a large proportion of the trend shifts shown in Figure 7, above, with South Africans dying in patterns that closely match those predicted by AIDS models.

Very high HIV prevalence—often exceeding 30% among pregnant women—is still being recorded in four other countries in the region: **Botswana, Lesotho, Namibia and Swaziland**. Yet again,

among pregnant women (Ministry of Health and Social Welfare, Swaziland, 2002). There are a few, tentative signs that some young women are adopting safer behaviour (teen pregnancies seem to be on the decline, for example). However, in an epidemic this rampant, women face overwhelming odds of being infected once they do have unprotected sex; among pregnant women 25–29 years-old, as many as 56% were HIV-positive in 2004 (Ministry of Health and Social Welfare, Swaziland, 2004). Like Swaziland, HIV prevalence among pregnant women in **Lesotho** is exceptionally high, although there are indications that it could be stabilizing. Mean HIV prevalence was 27% when most recently measured among antenatal clinic attendees, slightly lower than the 29% measured in 2003 (Ministry of Health and Social Welfare Lesotho, 2005).

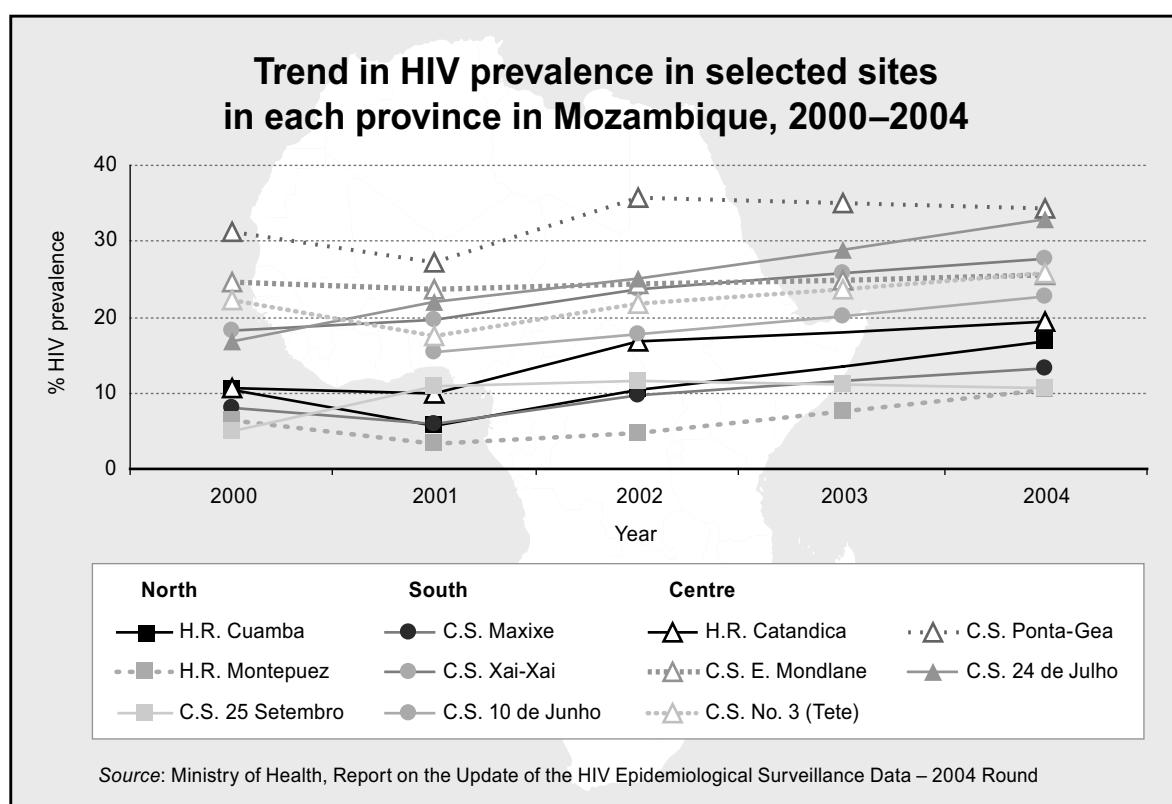
Apparently stable national HIV prevalence can hide significantly varied local patterns and trends—even in a relatively small country such as **Malawi**. Prevalence among pregnant women in Malawi ranged from just under 7% at a site in the central region to 33% at the southern tip of the country. While national prevalence among antenatal clinic attendees has remained around 20%, two more detailed trends give cause for concern. Prevalence measured at rural clinics is on the increase (up from 12.1% in 1999 to 14.5% in 2003), and prevalence among young pregnant women is high (15% among 15–19 year-olds, and 20% among 20–24 year-olds). (Ministry of Health and Population Malawi, 2003).

Mozambique's epidemic—like South Africa's—is lagging behind those of other countries in this subregion. However, latest data show a dramatically worsening epidemic overall, with rising infection levels in all regions. (HIV prevalence among pregnant women rose at 23 of the 34 clinics included in the 2004 serosurveillance round.) Estimated national adult HIV prevalence rose from 14% to just over 16% in 2002–2004, with HIV spreading fastest in provinces that contain the country's main transport links with **Malawi**, **South Africa** and **Zimbabwe**. Among pregnant

women in Caia (which lies along the main railway link with southern Malawi) HIV prevalence rose almost threefold from 7% in 2001 to 19% in 2004 (Ministry of Health, 2005). High infection levels are being seen in Gaza province, which borders Zimbabwe and South Africa (and has been a major source of migrant workers for South African industry and farms), and in Sofala province, which is split by Zimbabwe's main export route. Overall, the highest and most steeply rising HIV prevalence levels are found in Mozambique's central and southern provinces, where national (weighted) prevalence was over 18% and 20%, respectively, in 2004. Although lower in the north at 9%, HIV prevalence is rising there, too (Ministry of Health Mozambique, 2005).

HIV prevalence in Zambia remains high. National mean HIV prevalence among adult (15–44 years old) pregnant women has remained at 18–20% since 1994. The rising prevalence trends seen among 15–19 year-old antenatal clinic attendees in 1998–2002 (at, among others, Chilenje, Matero, Kasama, Kapiri Mposhi and Livingstone) suggest that new infections are still occurring at significant rates in parts of the country (Monze, 2004). Urban residents are twice as likely to be

Figure 8



HIV-infected, compared with rural residents, with the highest infection levels clustered in cities and towns that straddle major transport routes—including Kabwe, Kapiri Mposhi, Livingstone and Ndola, where 22–32% of pregnant were HIV-positive in 2002 (National HIV/AIDS Council Zambia, 2002).

Angola, which is still emerging from decades of war, has by far the lowest HIV prevalence in southern Africa. The latest round of HIV surveillance estimated that 2.8% [range 2.5–3.1%]

as it is in some of the worst-affected areas of Botswana, South Africa and Swaziland. Where declines in infection levels have been observed recently (such as in Katutura and Oshakati), HIV prevalence among pregnant women still exceeds 20%. Overall, the slight decline in national HIV prevalence recorded in Namibia's 2004 antenatal survey does not clearly indicate whether the country's epidemic has stabilized. Such a cautious interpretation seems borne out by infection levels among 15–24 year-old antenatal clinic attendees, which show

*Awareness of the epidemic is on the rise,
but specific knowledge about HIV still is inadequate.*

of pregnant women nationally were HIV-positive (Department of Health Angola, 2004). The recent expansion of HIV surveillance in Angola (data are now being collected at antenatal clinics in all 26 provinces) make comparisons with earlier national HIV estimates difficult. The best clue to current trends would be HIV prevalence among 15–24 year-old women attending antenatal clinics, whose ages mean most would have been infected relatively recently. HIV prevalence among young pregnant women was close to 3% or higher in seven provinces (Cunene, Kuando-Kubango, Luanda, Lunda Norte, Lunda Sur, Namibe, Uige). The only long-term comparable data are for the capital, Luanda, where prevalence climbed from 0.3% in the mid-1980s (1986) to 4.4% in 2004. The fact that HIV prevalence of 33% has been found among female sex workers in Luanda points to considerable potential for further growth in the epidemic (Grupo Tematico HIV/SIDA, 2002). A closer look reveals considerable regional variation, with two of the most seriously affected provinces Cunene and Kuando-Kubango on the border with Namibia (where some of the highest HIV infection levels among pregnant women have been recorded in the north of the country).

HIV prevalence in pregnant women in **Namibia** varies dramatically—from 8.5% in Opuwo (in the remote northwest) to over 42% in Katima Mulilo (in the Caprivi Strip wedged between Angola, Botswana and Zambia). In the ports of Luderitz, Swakopmund and Walvis Bay, prevalence ranged between 22% and 28%. In parts of Namibia, the epidemic is as intense

ambivalent trends, depending on the location. While there have been significant declines in prevalence among young pregnant women in Andara, Nyangana, Otjiwarongo and Tsumeb, prevalence has moved markedly in the opposite direction in places such as Nankudu, Oshakati, Rundu and Swakopmund (Ministry of Health and Social Services Namibia, 2004).

Botswana's epidemic appears to be stabilizing—but national HIV prevalence among pregnant women has stayed between 35% and 37% since 2001. Among pregnant women aged 15–24 years, HIV infection levels have remained steady since 1999, but among their counterparts 25 years of age and older, prevalence has been rising constantly since 1992 and reached 43% when last measured in 2003. Preliminary data from a new household survey in Botswana have given hope that the country's epidemic might be smaller than previously indicated (National AIDS Coordinating Agency, Botswana 2005). The survey estimated that some 25% of 15–49 year-olds were estimated to be living with HIV—considerably lower than the 37% estimate derived from antenatal clinic data (UNAIDS, 2004). However, that estimate should be interpreted with caution, since its very high non-response rate (44% of participants refused to be tested for HIV) could have skewed the results toward underestimations of HIV prevalence. Nevertheless, the survey found that more than 6% of children, aged 18 months to four years, were HIV-positive, most of which are likely due to mother-to-child transmission of the virus. Infection levels among older men

and women were unexpectedly high: 29% for those 45–49 years-old, and 21% for those in their early 50s. The gaps in HIV knowledge seem to persist. One in four respondents did not know that consistent condom use prevents transmission, and only 13% knew three ways for preventing sexual transmission of the virus (National AIDS Coordinating Agency, 2005).

National adult HIV prevalence in **Madagascar** has risen sharply in recent years, reaching an estimated 1.8% in 2005 (Ministère de la santé Madagascar, 2005). The epidemic is being driven largely by unprotected heterosexual contact. Awareness of the epidemic is on the rise, but specific knowledge about HIV still is inadequate. When surveyed in 2003-2004, fewer than one in five Madagascans could name two methods for preventing the sexual transmission of HIV and identify three misconceptions about AIDS (Ministère de l'Economie, des Finances et du Budget, 2005). Just 12% of young men and 5% of young women (aged 15–24 years) said they used a condom the last time they had sex with a casual partner (Direction Générale de la Lutte contre le SIDA et al., 2004).

Mauritius and **Seychelles** thus far have not experienced epidemics on the scale experienced elsewhere in the region. However, in Mauritius HIV is

EAST AFRICA

East Africa continues to provide the most hopeful indications that serious AIDS epidemics can be reversed. The countrywide drop in HIV prevalence among pregnant women seen in **Uganda** since the mid-1990s is now being mirrored in urban parts of **Kenya**, where infection levels are dropping, in some places quite steeply. In both countries, behavioural changes are likely to have contributed to the trend shifts. Elsewhere in East Africa, though, HIV prevalence has either decreased slightly or remained stable in the past several years.

New research and analysis is enabling a clearer understanding of Uganda's epidemic, where national HIV prevalence peaked at over 15% in the early 1990s before steadily diminishing, partly as a result of a nationwide effort to curb the epidemic. Data on behaviour suggest that the past declining prevalence trends may not continue in the future without a renewed focus on prevention. A countrywide household survey done in 2004-2005 found that men were much more likely to have multiple partners than were women—29% of men and only 4% of women said they had had more than one sexual partner in the previous 12 months. Condom use was not all that widespread: of the women and men who said they had slept

East Africa continues to provide the most hopeful indications that serious AIDS epidemics can be reversed.

spreading among injecting drug users: prevalence of 10–20% has been detected among drug injectors and the country's health authorities estimate that as many as 3000 users could be living with HIV. There are also significant infections levels (3–7%) recorded among female sex workers. A smaller epidemic is underway on the islands of Seychelles, where fewer than 400 HIV cases have been diagnosed since 1987. There, heterosexual intercourse is the main mode of HIV transmission, although there have been rising numbers of HIV diagnoses since 2000 among men who have sex with men (Seychelles Communicable Disease Control Unit, 2005). Reports of increasing drug use (including heroin) raise concerns that injecting drug use might emerge as a prominent route for HIV transmission here, as well.

with a casual partner in the previous year, roughly half used a condom the last time they had sex with that person. There is also evidence of continued HIV-related stigma: roughly half the men and women surveyed said that if a family member contracted HIV they would prefer to keep that fact secret (Ministry of Health Uganda, 2005).

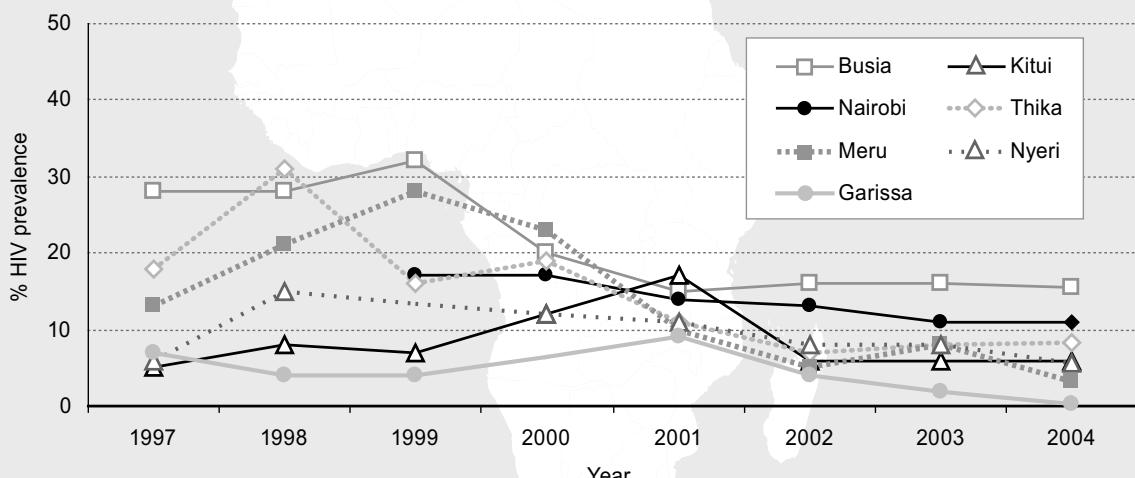
The survey estimated national adult HIV prevalence at 7%—higher than the most recent estimates derived from HIV test data at antenatal clinics. (The Ministry of Health Uganda in 2003 put national antenatal HIV prevalence at 6.2%). One in ten Ugandans aged 30–39 years was HIV-positive, according to the survey, and prevalence among middle-aged and older people was high: approximately 7% of men aged 50–59 years were infected, as were about 5% of women of the same

age. In urban areas, HIV prevalence among women was twice that among men (13% compared with 7.3%), while in rural areas it was roughly similar (7.2% versus 5.6%). Varying considerably from region to region, infection levels were found to be lowest in the West Nile (less than 3%) and highest

(more than 9%) in Kampala, and in the Central and North-Central regions (Ministry of Health Uganda, 2005).

Such findings are echoed in the ongoing longitudinal study in Rakai. That study found that more than two thirds of sexually active women

Data from select antenatal clinic sentinel surveillance sites with a declining trend in HIV prevalence, Kenya 1997–2004



Source: Ministry of Health – National AIDS/STD Control Programme (NASCOP), HIV Sentinel Surveillance 2004

Figure 9

What happened in Uganda?

Recent findings from a multi-year (1994–2003) study of 44 communities in Rakai in the south of country have helped refine understandings of the progression of Uganda's epidemic. HIV prevalence declined sharply—among women from 20% in 1994–1995 to 13% in 2003, and among men from 15% to 9% over the same period. Generally in Uganda, such declines have been attributed to behavioural change. However, in Rakai, evidence of such change has been uneven, with researchers observing no significant increases in abstinence or fidelity. The proportion of teenagers who say they have had multiple non-marital partners has increased considerably (from under 25% in 2000, to almost 35% in 2003). Condom use with casual partners, however, is now more commonplace—especially for men—and has probably helped lower HIV prevalence (Wawer et al., 2005). However, most of the momentum for Rakai's decline in prevalence appears to have derived from higher mortality rates—to such an extent that researchers' calculations suggest that approximately 5% of the observed 6.2% decline in HIV prevalence in 1994–2003 in Rakai was due to increased mortality.

It is unclear whether or to what extent the trends observed in Rakai have played out elsewhere in Uganda. In Masaka district (next to Rakai), for example, declining HIV incidence in the 1990s appeared to correlate strongly to behaviour change (Mbulaiteye et al., 2002). However, in Rakai (and in other areas of the country) there are tentative signs of a possible resurgence of HIV incidence among young men and women (aged 15–24 years). These trends underline the need for revitalized HIV prevention strategies (Wawer et al., 2005).

between the ages of 16 and 25 are married. Yet large numbers of women in that age group are being infected with HIV. More than 85% of women (and 90% of men) with HIV are currently or were previously married. Women's vulnerability to infection within marriage is underlined by the fact that most men with multiple partners are married (indeed, 45% of married men had multiple sexual partners, compared with just 5% of women). For some girls, meanwhile, abstinence was not an option: 14% of women said their first sexual experience had been coerced (Wawer et al., 2005).

Uganda has made strong strides in expanding access to treatment. It is estimated that more

in pregnant women has dropped in the capital, Nairobi, as well (Baltazar, 2005).

The declines in HIV incidence and prevalence are partially likely to have been caused by behavioural change, but two 'natural' progressions in AIDS epidemics could also have lowered prevalence. First, as the epidemic matures and greater numbers of people die of AIDS-related conditions, death rates can be higher than the rates at which new infections are occurring. As a result, the total number of people living with HIV would decrease (and prevalence would drop)—but the rate of new HIV infections would not necessarily have slowed. Second, in the early stages of the epidemic, HIV spreads primarily among those people who are

The most dramatic drops in prevalence have been among pregnant women in urban Kenya.

than one third of people in need of antiretroviral treatment were receiving it in mid-2005—the best coverage in sub-Saharan Africa, with the possible exception of Botswana (UNAIDS/WHO, 2005). Despite the admirable achievements in prevention, treatment and care in the past decade, Uganda has not overcome its epidemic. The recent research findings underline the need for renewed emphasis on comprehensive prevention strategies that can respond to the challenges posed by mature epidemics where antiretroviral treatment access is improving.

The epidemic in **Kenya** peaked in the late 1990s with an overall HIV prevalence of 10% in adults, which declined to 7% in 2003. Infection levels in urban residents peaked in the mid-1990s, before those in rural residents, which subsequently dropped, though at a slower rate than the urban residents (Ministry of Health Kenya, 2005). This is only the second time in more than two decades that a sustained decline in national HIV infection levels has been seen in a sub-Saharan African country. The most dramatic drops in prevalence have been among pregnant women in urban Kenya—especially in Busia, Meru, Nakuru and Thika, where median HIV prevalence plummeted from approximately 28% in 1999 to 9% in 2003. There have been significant declines also in Garissa, Kajiado, Kisii, Kitale, Kitui and Nyeri, while prevalence

most at-risk of acquiring and transmitting the virus. Their eventual deaths remove them from the circuits of HIV transmission and (all else being equal) could cause HIV incidence to decline, which could translate into lower prevalence, too. Behavioural change is therefore only one aspect of what affects declines in HIV incidence and prevalence.

In Kenya's case, however, there is also evidence that significant numbers of Kenyans in recent years have adopted safer sexual behaviour. Condom use with casual partners has increased, most strikingly among women: in 2003 almost 24% (23.9%) said they used a condom the last time they had casual sex, compared with 15% five years earlier (in 1998). In addition, the proportions of men and women with more than one sexual partner reduced by more than half in 1993–2003, and more young men and women are delaying sexual debut (Cheluget et al., 2004). There are also signs that other sexually transmitted infections are occurring at a slower rate. All this is occurring against the backdrop of expanded HIV information campaigns, voluntary counselling and testing programmes and gradually improving access to antiretroviral therapy. However, the declines in HIV prevalence are not yet evident across the entire country, which still exhibits considerable variance in HIV levels and trends. Prevalence at antenatal clinics varied from as low

as 2% and under (in Bamba, Garissa and Kajiado) [1.6%, 0.4% and 2%, respectively]) to as high as 14% in Chulaimbo, 16% in Busia and 30% in Suba in 2004 (Baltazar, 2005).

In the **United Republic of Tanzania**, about 7% of the mainland adult population is living with HIV, according to a new household survey. In cities and towns, HIV prevalence averaged 11%, twice the levels found in rural areas. HIV infections have increased sharply in older age groups, with prevalence reaching 13% in women aged 30–34 years (Tanzania Commission for AIDS, 2005). HIV testing of antenatal clinic attendees, meanwhile, has revealed varied patterns of infection, with prevalence ranging from almost 5% (4.8%) in Kagera to over 15% (15.3%) in Mbeya (Ministry of Health United Republic of Tanzania, 2004). It is important to bear in mind, however, that average HIV prevalence at antenatal clinics in Mbeya went beyond 20% a decade ago (1994), and reached 36% at some clinics, before receding to current levels (Jordan-Harder et al., 2004).

HIV prevalence trends among pregnant women suggest a relatively stable epidemic overall, but low infection levels among young Tanzanians and the household survey's finding that more people are practising safe sex compared with five years ago point toward a reduction in HIV transmission. Infections diagnosed at antenatal clinics have declined slightly in the Dar es Salaam and Mtwara regions since 2002, but rose in Dodoma. At the same time, about 40% of married men said they had extramarital sexual relationships, according to a recent study in rural parts of the country (Nko S et al., 2004). (For a discussion of the contrasting outcomes of prevention efforts in the Mbeya and Rukwa regions, please refer to the *AIDS epidemic update 2004*.)

Rwanda's epidemic appears to have stabilized at the national level in recent years, but differing localized trends are visible, with HIV prevalence in pregnant women rising in some places, staying stable in others, and decreasing in a few locations (such as Gikondo). Overall, prevalence is more than twice as high in urban areas (6.4% median prevalence in 2003), compared with rural areas (2.8%)—with Kigali by far the worst-affected, despite some evidence of declining infection

levels in 1998–2003 among pregnant women younger than 35 years (Kayirangwa, 2004). The expansion of the country's AIDS programme points to a welcome trend. Sites offering services to prevent mother-to-child transmission of HIV increased by one third in the past year, sites offering voluntary counselling and testing have increased, and the number of people receiving antiretroviral therapy rose from 8700 in 2004 to more than 13 200 by June 2005, a 50% increase (Binagwaho et al., 2005). There is no clear trend discernible in neighbouring **Burundi**, where HIV prevalence among pregnant women ranges from 2% (in Kiremba) to 13% (in a suburb of the capital, Bujumbura) and has been fluctuating at most sentinel surveillance sites (Ministère de la santé publique, 2004).

Although **Ethiopia**'s national HIV prevalence rate is low (an estimated 4.4%) compared with many other countries to its south (Federal Ministry of Health Ethiopia, 2004), it faces many challenges in dealing with AIDS. The country's epidemic is concentrated mainly in urban areas, where HIV prevalence among pregnant women has averaged at 12–13% since the mid-1990s. In a society where some 85% of the population lives in rural areas, rising adult prevalence in rural areas (up from 1.9% in 2000 to 2.6% in 2003) gives cause for concern. Indeed, a large part of the AIDS burden is shifting to rural communities where more people are now being infected with HIV than in urban areas (Federal Ministry of Health Ethiopia, 2004). With approximately 1.5 million people living with HIV in 2004 and more than 4.5 million orphans (including at least 500 000 children orphaned by AIDS), the country faces a huge task of providing adequate treatment, care and support to affected households (UNAIDS, 2004). In a country where AIDS caused an estimated 30% of all adult deaths in 2003, fewer than 10% of people in need of antiretroviral therapy were receiving it by mid-2005 (Federal Ministry of Health Ethiopia, 2004; UNAIDS/WHO, 2005).

Little new information has emerged regarding neighbouring **Eritrea**'s epidemic, where the 2003 HIV surveillance survey pointed to an epidemic that was stabilizing at relatively low levels (2.4% adult HIV prevalence overall). However, infection levels varied considerably across the country, and ranged from under 2%

in the west to more than 7% in the south-east (Ministry of Health Eritrea, 2004).

Until very recently, little was known about the extent of HIV transmission in **Somalia**, but a survey carried out in 2004 indicates that the virus is present in most of the country, although infection levels are still low. The survey found that HIV prevalence among pregnant women nationally was 0.6%, with the highest infections levels in the capital Mogadishu (0.9%) and the lowest in Merca where hardly any infections were detected (WHO, 2005). On the other hand, 4% of people seeking treatment for sexually transmitted infections were found to be HIV-positive (and 7% of women attending one clinic in Mogadishu), suggesting that the epidemic remains concentrated. With the country rebuilding itself after devastating conflict, HIV prevention might not have ranked high as a priority. Knowledge of HIV transmission is very poor, and condom use rare. Only 13% of young men aged 15–24 years had ever used a condom, and a mere 5% of young women (WHO, 2005).

WEST AND CENTRAL AFRICA

Although the epidemics in West Africa vary in scale and intensity, this subregion historically has been less severely affected than other parts of sub-Saharan Africa. National adult HIV prevalence is yet to exceed 10% in any West African country, and there is no consistent evidence of significant changes in prevalence among pregnant women in recent years.

Nigeria is home to more people living with HIV than any other country in the world, except South Africa and India—between 3.2 and 3.6 million people at the end of 2003 (UNAIDS, 2004). Median HIV prevalence among pregnant women appears to have levelled at around 4%. Although HIV prevalence among pregnant women varies (from a low of 2.3% in the South West to a high of 7% in the North Central parts), stable trends are evident at almost all the antenatal clinics surveyed since the mid-1980s. The only exception is Cross River State, where infection levels rose from 4% in 1993–1994 to 12% in 2003 (Federal Ministry of Health Nigeria, 2004). The reasons for this sharp increase are not clear.

In **Côte d'Ivoire**, HIV prevalence among urban pregnant women has remained steady at around 10% since 1997 (and about half that among their rural counterparts). The only marked change has been among female sex workers who, in Abidjan for example, have shown declining prevalence of HIV and of other sexually transmitted infections—probably a reflection of increasing condom use (Ekra et al., 2004). Unfortunately, the country's civil conflict has prevented new HIV-related data from being gathered.

Togo has an apparently stable national HIV infection level (approximately 4%) but significant regional variation. HIV prevalence in pregnant women ranges from under 2% at clinics in the Central and Kara regions, to over 7% in the Maritime, Plateaux and Savanes regions, as well as in the capital, Lomé (Ministère de santé Togo, 2004). Neighbouring **Ghana**'s epidemic seems to be on a similarly stable path, with HIV prevalence measured at antenatal clinics fluctuating between 2.5% and 4% for the past decade. To the north, in **Burkina Faso**, HIV prevalence at antenatal clinics was 2.7% in 2003, but a downward trend in prevalence is observed among young pregnant women (15–24 years) in urban areas. The HIV prevalence of 1.9% found in young pregnant women in 2003 was half the 2001 level of 3.9% (Présidence du Faso, 2005). In the capital, Ouagadougou, there has been a steep drop in HIV infection levels among female sex workers, 59% of whom were HIV-positive when tested in 1994, compared with 21% in 2002 (Kintin et al., 2004). These are encouraging trends.

National HIV infection levels in **Mali** and **Senegal** remain below 2% (Ministère de la santé Mali, 2004; Ministère de la santé et de la prévention médicale Senegal, 2004). In **Senegal**, HIV prevalence did not exceed 3% at any of the antenatal clinics during the most recent round of HIV surveillance in 2002–2003. However, in the 2005 Demographic and Health Survey, prevalence of 3.4% was found in adult women in Ziguinchor and 2.7% in Kolda in the south along the border with Guinea-Bissau (Centre de recherche pour le développement humain et MEASURE DHS+, 2005). Among sex workers, prevalence has stayed at roughly the same high levels (21% in Dakar and 30% in Ziguinchor) for close on a decade (Gomes et al., 2005).

Cameroon has been experiencing one of the more serious epidemics in Central Africa, as a new household survey has confirmed with its estimate that national HIV prevalence stood at 5.5% in 2004 (Ministère de la santé publique Cameroon, 2004). Among women, infection levels reached 10% or higher in three regions (Adamaoua, North-East and South-East), as well as in the capital Yaoundé. Nationally, one in ten young women aged 25–29 years was found to be living with HIV. As many as 110 000 people (and possibly more) are living with HIV in the **Republic of the Congo**, where HIV prevalence varies considerably from one part of the country to another. Low infection levels of just over 1% have been observed in Impfondo and Djambala, but in Sibiti, for example, adult prevalence was 10% (Ministère de la santé République du Congo, 2004).

Progress in expanding treatment and care provision in sub-Saharan Africa in the past year has been uneven. At least one third of people in need of antiretroviral therapy are receiving it in such countries as **Botswana** and **Uganda**, while

in **Cameroon**, **Côte d'Ivoire**, **Kenya**, **Malawi** and **Zambia** between 10% and 20% of people requiring antiretroviral drugs were receiving them in mid-2005. However, there is extensive unmet need in most of the region. At least 85% (almost 900 000) of South Africans who needed antiretroviral drugs were not yet receiving them by mid-2005; the same applied to 90% or more of those in need in countries such as **Ethiopia**, **Ghana**, **Lesotho**, **Mozambique**, **Nigeria**, the **United Republic of Tanzania** and **Zimbabwe** (UNAIDS/WHO, 2005).

In southern and East Africa, as well as in parts of central Africa, serious AIDS epidemics will most probably continue for some time to come. The declines observed in Uganda and, more recently, in Kenya and Zimbabwe confirm that the epidemics can respond to specific HIV-related intervention. However, in high prevalence settings, it is equally important to continue to address underlying socioeconomic and sociocultural dynamics that create situations of vulnerability, so that declines can be maintained where initiated and achieved where needed.

ASIA

HIV and AIDS statistics and features, in 2003 and 2005

	Adults and children living with HIV	Number of women living with HIV	Adults and children newly infected with HIV	Adult prevalence (%) *	Adult and child deaths due to AIDS
2005	8.3 million [5.4–12.0 million]	2.0 million [1.3–3.0 million]	1.1 million [600 000–2.5 million]	0.4 [0.3–0.6]	520 000 [330 000–780 000]
2003	7.1 million [4.6–10.4 million]	1.7 million [1.1–2.5 million]	940 000 [510 000–2.1 million]	0.4 [0.2–0.5]	420 000 [270 000–620 000]

CHINA

National HIV infection levels in Asia are low compared with some other continents, notably Africa. However, the populations of many Asian nations are so large that even low national HIV prevalence means large numbers of people are living with HIV. Latest estimates show some 8.3 million [5.4 million–12 million] people (2 million [1.3 million–3 million] adult women) were living with HIV in 2005, including the 1.1 million [600 000–2.5 million] people who became newly

HIV has been detected in 48% of China's counties but is observed in all 31 provinces, autonomous regions and municipalities. Heightened prevention efforts will be needed to contain the emerging epidemic (State Council AIDS Working Committee and UN Theme Group on HIV/AIDS, 2004). The most serious HIV epidemics in China to date have been clustered among specific population groups (such as injecting drug users, sex

Risky behaviour—often more than one form—continues to sustain serious AIDS epidemics in Asia.

infected in the past year. AIDS claimed some 520 000 [330 000–780 000] lives in 2005.

Risky behaviour—often more than one form—continues to sustain serious AIDS epidemics in Asia. At the heart of many of Asia's epidemics lies the interplay between injecting drug use and unprotected sex, much of it commercial. Yet prevention strategies still rarely reflect the fact that such combinations of risk-taking exist in virtually every country in the region. As a result, many of the epidemics in Asia are in transition—including in those countries where the spread of HIV to date has been contained.

workers, former plasma donors, and their partners) and in certain geographic areas, especially in the south and west of the country. The majority of HIV infections have been detected in Yunnan and Henan provinces and in Guangxi autonomous region. Least affected at the moment are Qinghai province and Tibet autonomous region (State Council AIDS Working Committee and UN Theme Group on HIV/AIDS, 2004).

Similar to many other countries in Asia, HIV has been established in networks of injecting drug users, among whom HIV prevalence rose steeply in the late-1990s. Thereafter, prevalence appeared

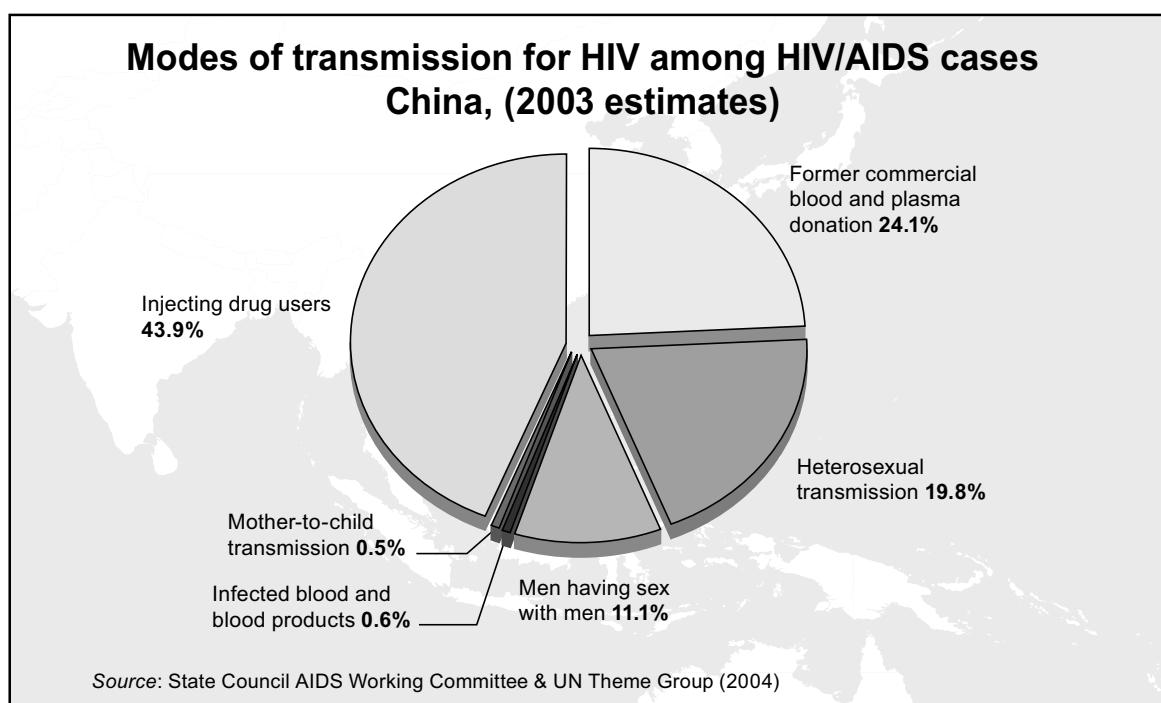


Figure 10

to stabilize, though at high levels in some areas. HIV prevalence of 18–56% was found in drug injectors in six cities in the southern provinces of Guangdong and Guangxi in 2002, while in Yunnan province just over 20% of injectors tested positive for HIV the following year (National Center for AIDS/STD Control and Prevention China, 2003). China has announced plans to

is the potential overlap between commercial sex and injecting drug use that is likely to become the main driver of China's epidemic. A recent review of behavioural studies concluded that at least half of female drug users had at some stage also engaged in commercial sex (Yang et al., 2005). In Sichuan province, 2.5% of sex workers said they injected drugs, as did 5% of street-based sex

Most female sex workers originate from remote rural areas, are poorly educated and have little knowledge about HIV.

establish more than 1400 needle-exchange sites and over 1500 drug treatment clinics in seven provinces in southern and western China where an estimated two million drug users are believed to live (Zunyou, 2005).

Commercial sex accounts for a large part of the estimated 20% of HIV infections in China that are due to unprotected heterosexual contact (State Council AIDS Working Committee and UN Theme Group, 2004). It also features in the transmission of the virus among men who have sex with men: a recent survey among male sex workers in the southern city of Shenzhen found that 5% of them were HIV-positive. However, it

workers. The latter had the highest numbers of clients and the lowest levels of condom use (MAP, 2005a). In the same province, almost every other woman surveyed in behavioural surveillance for injecting drug users said she had traded sex for money or drugs in the previous month. Compounding matters is the fact that the female injectors who sold sex without condoms were the most likely to be using non-sterile needles. Those at highest risk of acquiring HIV through unsafe injecting also have the highest likelihood of transmitting it sexually—a potentially lethal combination which could fuel a much more serious epidemic (MAP, 2005a).

Most female sex workers originate from remote rural areas, are poorly educated and have little knowledge about HIV. Behavioural studies have shown that many sex workers continue to have unprotected sex even after discovering symptoms of sexually transmitted infections in themselves or their clients (Yang et al., 2005). Concerted efforts are needed to enable them to protect themselves against HIV and other sexually transmitted infections (Zhang et al., 2004). There are some signs of progress on this front. Although consistent condom use still lags, the number of sex workers using condoms all the time in Guangxi, for example, in 2003 exceeded those who never used them (MAP, 2005b). In Sichuan, meanwhile, only about half the sex workers surveyed in 2002 said they had used condoms with all their clients in the previous month (MAP, 2005b).

There are signs that HIV is spreading beyond these populations with high-risk behaviour into the wider population in parts of the country. Anonymous testing among unmarried young people found HIV prevalence of 1%, while prevalence as high as 5% has been found among pregnant women in some areas where HIV has been established among drug injectors and sex workers. In parts of Yunnan and Xinjiang, HIV prevalence of 1.3% and 1.2%, respectively, has been found in pregnant women (China Ministry of Health and UN Theme Group on HIV/AIDS, 2003).

Data relating to HIV transmission among men who have sex with men is very limited. The few studies conducted thus far have encountered low rates of condom use (about 40% of the men did not use condoms in Changde and Xi'an, for example, and 33% in Shenzhen used them seldom or never) and significant prevalence of HIV (in a 2001–2003 study in Beijing, 3% of men who have sex with men were HIV-positive) (Choi et al., 2003). Significant numbers of men in China have sex with other men; once HIV establishes itself in this population, a more serious HIV epidemic is likely to occur.

China has made slow progress in realizing its 2003 pledge to provide free antiretroviral treatment to all who need it; by June 2005, about 20 000 people were receiving the drugs in the 28 provinces and autonomous regions where

antiretroviral treatment had been introduced (Ministry of Health China, 2005).

Several constraints hinder a more effective AIDS response in China. They include poor public awareness about the epidemic, and the stigma and discrimination experienced by people living with HIV. As a result, take-up of HIV testing and counselling services remains low and will continue unless stigma and discrimination are reduced and integrated prevention, treatment and care programmes are more widely available. It is especially important that HIV testing programmes rest on the cornerstones of informed consent, confidentiality and counselling.

INDIA

Diverse epidemics are underway in **India**, where an estimated 5.1 million Indians were living with HIV in 2003 (NACO, 2004a). Although levels of HIV infection prevalence appear to have stabilized in some states (such as Tamil Nadu, Andhra Pradesh, Karnataka and Maharashtra), it is still increasing in at-risk population groups in several other states. As a result, overall HIV prevalence has continued to rise. State-wide prevalence among pregnant women is still very low in the poor and densely populated northern states of Uttar Pradesh and Bihar. Even relatively minor increases in HIV transmission could translate into huge numbers of people becoming infected in those states, which are home to one quarter of India's entire population.

HIV prevalence of over 1% has been found in pregnant women in four of the industrialized western and southern states of India (specifically Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu,) and in the north-eastern states of Manipur and Nagaland (NACO, 2004a). Transmitted mainly through unprotected sex in the south and injecting drug use in the north-east of the country, HIV is spreading beyond urban areas. In Karnataka and Nagaland, more than 1% of pregnant women in rural areas tested HIV-positive in 2003. A significant proportion of new infections is occurring in women who are married and who have been infected by husbands who (either currently or in the past) frequented sex workers. Commercial sex (along with injecting

drug use, in the cases of Nagaland and Tamil Nadu) serves as a major driver of the epidemics in most parts of India. HIV surveillance in 2003 found 14% of commercial sex workers in Karnataka and 19% in Andhra Pradesh were infected with HIV (NACO, 2004b). The recent finding that 26% of sex workers in the city of Mysore (Karnataka) were HIV-positive is not surprising given that just 14% of the women used condoms consistently with clients and that 91% of them never used condoms during sex with their regular partners (Reza-Paul, 2005).

The well-known achievements among sex workers of Kolkata's Sonagachi red-light area

and injecting drug use in Manipur, where a drug injection-driven epidemic has been prevalent for at least a decade. Some 20% of female sex workers said they injected drugs, according to behavioural surveillance. In other north-eastern states, about half as many sex workers have reported injecting drugs (MAP, 2005a).

Harm reduction efforts (including needle and syringe exchange, as well as limited drug substitution programmes) were introduced more recently in some states, such as Manipur. There, the most recent data (2003) put HIV prevalence in drug injectors at 24%—the lowest levels detected among injecting drug users in that state since

A significant proportion of new infections is occurring in women who are married and who have been infected by husbands.

(in West Bengal) have shown that safer sex programmes that empower sex workers can curb the spread of HIV. Condom use in Sonagachi has risen as high as 85% and HIV prevalence among commercial sex workers declined to under 4% in 2004 (having exceeded 11% in 2001). In Mumbai, by contrast, available data suggest that sporadic and piecemeal efforts to promote condom use during commercial sex have not been as effective; there, HIV prevalence among female sex workers has not fallen below 52% since 2000 (NACO, 2004b).

HIV information and awareness among sex workers appears to be low, especially among those working in the streets. Surveys carried out in various parts of India in 2001 found that 30% of street-based sex workers did not know that condoms prevent HIV infection, and in some states, such as Haryana, fewer than half of all sex workers (brothel- and street-based) knew that condoms prevent HIV. Large proportions of sex workers (42% nationally) also thought they could tell whether a client had HIV on the basis of his physical appearance (MAP, 2005b).

In the north-east of India, HIV transmission is concentrated chiefly among drug injectors and their sexual partners (some of whom also buy or sell sex), especially in the states of Manipur, Mizoram and Nagaland, all of which lie adjacent to the drug-trafficking 'Golden Triangle' zone (Solomon et al., 2004). There is a significant overlap of sex work

1998; changing inclusion criteria, however, make it difficult to directly compare HIV data from the various studies (NACO, 2004b). Elsewhere the epidemics among drug injectors appear to be well established, with HIV prevalence having reached 14% in Nagaland in 2000–2003, for example (NACO, 2004b).

Injecting drug use is not limited to the country's northern states. There has been a sharp rise in HIV infections among drug injectors in the southern state of Tamil Nadu, where 39% were HIV-infected in 2003, compared with 25% in 2001 (NACO, 2004b). In a smaller study in the city of Chennai (in the same state), almost two thirds (64%) of injectors were HIV-positive, according to sentinel surveillance done in 2003 (Monitoring the AIDS Pandemic Network, 2004). As these (mostly male) drug users can then pass the virus to their sexual partners, increasing numbers of women are being infected.

Relatively little is known about the role of sex between men in India's various epidemics. The few studies that have examined this complex dimension of sexuality in India have found that significant numbers of men do have sex with other men. One study, undertaken among residents of slum areas in Chennai, has found that 6% of men had had sexual intercourse with another man. Almost 7% of the men who had sex with other men were HIV-positive, and more than half of them were married (Go et al., 2004).

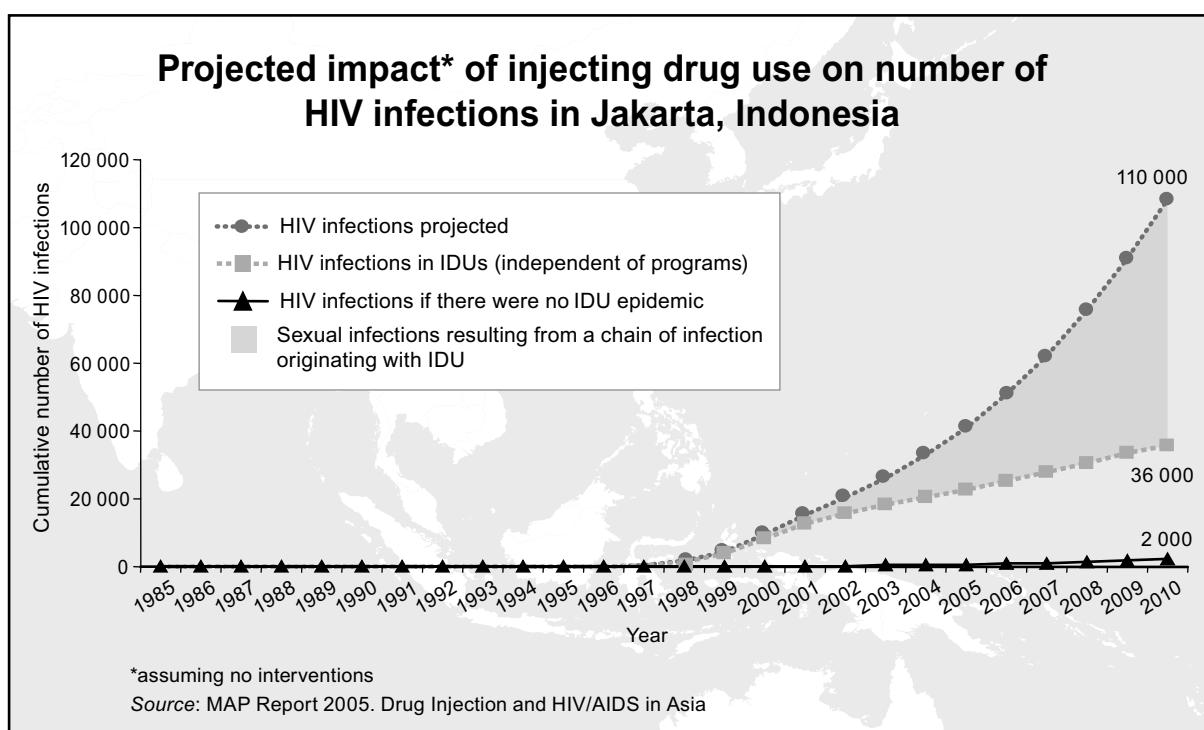


Figure 11

HIGH STAKES

Some countries have avoided HIV epidemics for many years despite significant levels of injecting drug use, commercial sex and infrequent condom use. However, once HIV establishes a firm-enough presence in at-risk population groups, it can spread extensively among and beyond them—as several Asian countries have discovered.

Injecting drug use is the strongest initial driver of HIV infection in Asia. Even where the numbers of people injecting drugs are relatively small, their contribution to the overall HIV epidemic in a country can be considerable. The majority of drug injectors are sexually active and, in some countries, large proportions of them buy or sell sex. HIV-infected drug injectors therefore can help build up a ‘critical mass’ of infections in sexual networks, from where HIV can then spread across the wider society (MAP, 2005a). Such a process is well-underway in several Asian countries, most notably **Indonesia**, **Viet Nam** and in parts of **China**. Unless this effect is halted early, millions of new HIV infections can be expected in those countries.

Based on data from the Indonesian capital, Jakarta, Figure 11 shows how an initially small-scale HIV epidemic among drug injectors might develop. If risk behaviours among drug injectors, among male, female and transgender sex workers, and among clients of sex workers do not change from the levels observed in surveillance performed in 2003, Jakarta could expect a major epidemic during this decade. (The shaded section of the graph represents sexually transmitted HIV infections that stemmed from the sharing of unsafe drug injecting equipment and the subsequent chain of transmission. HIV might have been passed on to a non-injecting woman by her injecting boyfriend, or to a client who contracted the virus from a sex worker infected by an earlier drug-using client. If that client had always used a sterile needle when injecting drugs, almost the entire sequence of transmission could have been avoided; MAP, 2005a.)

Indonesia is on the brink of a rapidly worsening AIDS epidemic. With risk behaviour among injecting drug users common, a mainly drug-injection epidemic is already spreading into remote parts of this archipelago. Counselling and HIV

testing services started by local nongovernmental organizations in such far-flung cities as Pontianak (on the island of Borneo) are finding alarmingly high rates of infection—above 70% of people who request testing are discovering that they are infected with HIV. An estimated three quarters of them are injecting drug users (MAP, 2005a). Meanwhile, HIV prevalence as high as 48% has been found in drug injectors at rehabilitation centres in Jakarta (Riono and Jazant, 2004). Most of these drug users are young, relatively well-educated and live with their families (Riono and Jazant, 2004).

It will require more than just information and awareness campaigns to alter such trends. Researchers are finding that most injectors know where to get sterile needles, yet close to nine in ten (88%) of them still use non-sterile injecting equipment (Pisani, 2003). One problem is that many injectors are reluctant to carry sterile needles with them for fear that police would treat this as proof that they inject drugs (which is a criminal offence). The incarceration of drug injectors is a significant facet of Indonesia's epidemic. In Jakarta, between 1997 and 2001, HIV prevalence among drug injectors in Jakarta rose from zero to

other population groups, with many of these men selling sex to finance their drug habits (MAP, 2005a). A large proportion of male sex workers also have sex with women (Riono and Jazant, 2004). Condom use, generally, ranges from being infrequent to rare. In Jakarta, condom use rates during commercial sex hardly changed in 1996–2002, before rising slightly. Still, by 2004, three quarters of sex workers operating out of massage parlours and clubs said they had not used condoms with any of their clients in the previous week. In brothel areas of the city, sex workers and their clients were even more averse to using condoms, despite almost a decade of prevention efforts. Fully 85% of sex workers said they did not use condoms with any clients in the previous week (MAP, 2005b). Part of the reason might be that police sometimes still arrest women for being in possession of a condom, which they view as proof of prostitution (MAP, 2005b). In such contexts, it is not surprising to discover that HIV prevalence among sex workers in Sorong, for example, reached 17% in 2003, and that an average 42% of sex workers in seven **Indonesian** cities were infected with gonorrhoea and/or Chlamydia in 2003 (MAP, 2004). Such intersecting networks of risk guarantee that HIV will spread more

Punitive campaigns to combat ‘social evils’ tend to drive drug injectors and sex workers beyond the scope of outreach programmes.

47%, for example. Subsequently, in the capital's overcrowded jails, HIV prevalence started to rise two years later, from zero in 1999 to 25% in 2002 (MAP, 2005a). Access to prevention and substitution treatment services generally is very limited. If Indonesia is to bring its growing epidemic under control, the legal and institutional environment may need to be adapted in order to facilitate effective prevention strategies.

More than half the drug injectors in Jakarta are sexually active and one in five buys sex. Yet, about three quarters of those users do not use condoms during commercial sex (Center for Health Research and Ministry of Health, 2002). As HIV enters commercial sex networks, wider sexual transmission of HIV is almost certain to follow. Meanwhile, rates of drug injection among male sex workers are higher than among

extensively in the wider population, especially where multiple sexual partnerships are common, such as in parts of Papua province. There, almost 1% of adults in five villages have tested HIV-positive in a serosurvey (MAP, 2004). There is an urgent need to expand and intensify HIV prevention programming in Indonesia.

An unusually large overlap between injecting drug use and sex work is priming a serious epidemic in **Viet Nam**, where HIV already has spread to all 64 provinces and all cities. The number of people living with HIV has doubled since 2000 and reached an estimated 263 000 (range: 218 000–308 000) in 2005 (Ministry of Health Viet Nam, 2005). The country's drug injectors are mostly young (with a mean age of 25 years) and using non-sterile needles is very common; HIV infection levels of 40% among drug injectors are not unusual

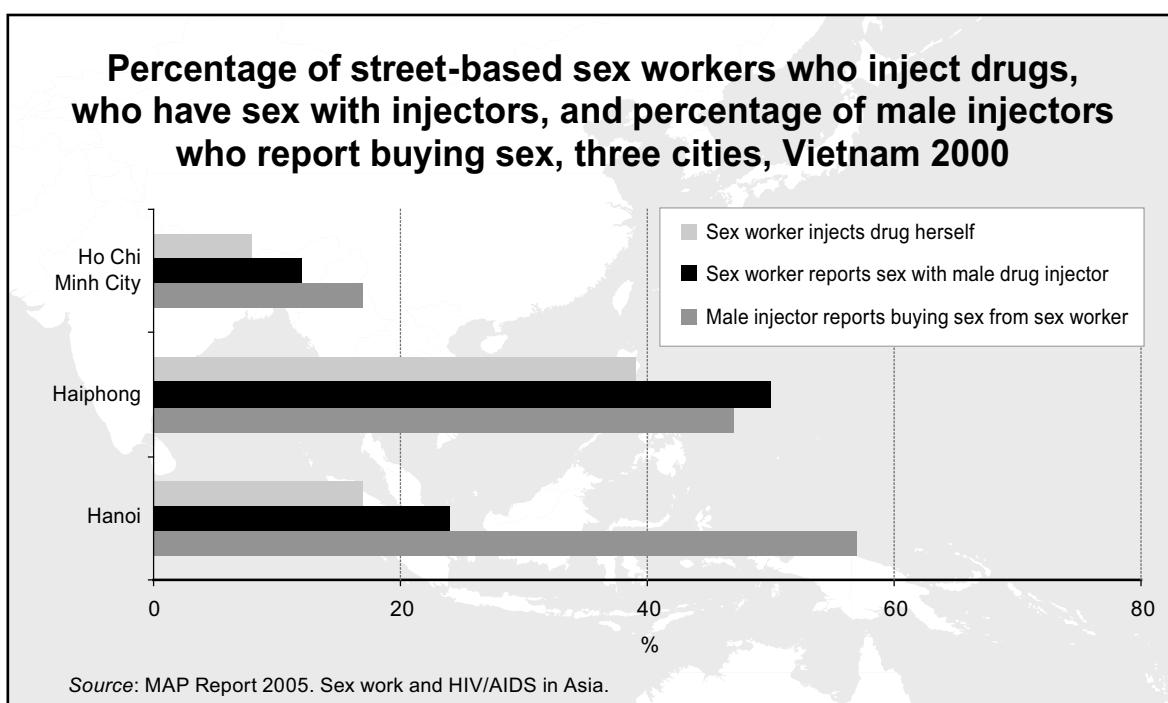


Figure 12

(Hien et al., 2004a). Approximately one in three injecting drug users is HIV-infected, and in cities such as Can Tho, Hai Phong, Hanoi and Ho Chi Minh City, HIV prevalence is considerably higher (Ministry of Health Viet Nam, 2005). Drug-using sex workers in Ho Chi Minh City were about half as likely to use condoms as those who did not use drugs, according to another study (see box p. 39) (MAP, 2004). Conversely, fewer than 50% of drug injectors consistently used condoms with sex workers (USAID et al., 2001). As a consequence, average HIV prevalence among sex workers nationally is approximately 16%, and infection levels are even higher in the cities of Hai Phong, Ho Chi Minh City, Hanoi and Can Tho (Ministry of Health Viet Nam, 2005). In addition, a Ho Chi Minh City survey in 2003 found HIV prevalence of 8% among men who have sex with men.

A much larger epidemic is likely to be imminent, especially in Ho Chi Minh City (which accounts for about one quarter of all HIV infections in the country and where adult HIV prevalence was estimated at 1.2% in 2003), and in the northern coastal cities of Quang Ninh and Hai Phong (where about 1.1% of adults are believed to be HIV-infected) (Ministry of Health Viet Nam, 2005). Programmes to reduce use of non-sterile needles and sexual risk-taking among drug injectors are

essential, as are strategies to reduce the sexual transmission of HIV between sex workers, their clients and their other sexual partners. Punitive campaigns to combat ‘social evils’ tend to drive drug injectors and sex workers beyond the scope of outreach programmes and can inadvertently entrench risky behaviours (Hien et al., 2004a). Viet Nam’s epidemic has reached the stage where any delay could lead to thousands of lives lost. At the same time, the country’s health care system will need to be readied to cope with an estimated 5000–10 000 new AIDS cases each year for the future (Ministry of Health Viet Nam et al., 2003).

The combination of high levels of risk behaviour and limited knowledge about AIDS among drug injectors and sex workers in **Pakistan** favours the rapid spread of HIV, and new data suggest that the country could be on the verge of serious HIV epidemics (Ministry of Health Pakistan et al., 2005).

A major epidemic has already been detected among injecting drug users in Karachi, 23% of whom were found to be HIV-infected in 2004 (Ministry of Health Pakistan, 2005). When tested just seven months earlier, the same community had only one HIV-positive case (Altaf et al., 2004). That epidemic is unlikely to be confined

to Karachi for long. Many of these injectors move from city to city (21% of the Karachi users had also injected in other cities) and a very high proportion of them use non-sterile injecting equipment (48% in Karachi had done so in the previous week). Risk behaviour in Lahore is even higher: 82% of injectors had used non-sterile syringes in the previous week, 35% did so all the time, and 51% had injected in another city in the previous year (Ministry of Health Pakistan et al., 2005). An HIV epidemic among injecting drug users was reported in 2004 in Pakistan's Sindh province, in the town of Larkana where almost 10% of drug injectors tested HIV-positive (Shah et al., 2004). Knowledge of HIV among injectors (and sex workers) is extremely low. In Karachi, more than one quarter had never heard of AIDS and as

transmitted infections rates are high: in Karachi, 18% of injectors were found to be infected with syphilis, as were 36% of male sex workers and 60% of Hijras or transgendered persons (Ministry of Health Pakistan et al., 2005).

Given the extent of overlapping high-risk practices, increasingly serious HIV epidemics are highly likely in Pakistan. Focused prevention programmes are urgently needed to limit HIV transmission within and beyond the intersecting networks of high-risk behaviour.

In **Malaysia**, too, there are elements that could cause its epidemic to erupt suddenly. Approximately 52 000 people were living with HIV in 2004, the vast majority of them young men (aged 20–29 years), and three quarters of

*Focused prevention programmes
are urgently needed to limit HIV transmission within and beyond the
intersecting networks of high-risk behaviour.*

many did not know that using non-sterile injecting equipment could result in infecting them with HIV (Ministry of Health Pakistan et al., 2005).

Meanwhile, in Karachi, Pakistan's main trading city, one in five sex workers cannot recognize a condom, and three-quarters do not know that condoms prevent HIV (in fact, one third have never heard of AIDS). It is therefore little wonder that only 2% of female sex workers said they used condoms with all their clients in the previous week (MAP, 2005b). In addition to the lack of knowledge and low use of condoms, there is a high degree of sexual interaction between drug injectors and sex workers. Over 20% of female sex workers in Karachi and Lahore had sold sex to injecting drug users and condom use was very low during those encounters. Among injecting drug users in Lahore, almost half had had sex with a regular partner in the previous year, one third had paid for sex with a woman (11% used a condom consistently) and almost one quarter had paid for sex with a man (5% used a condom consistently) (Ministry of Health Pakistan et al., 2005). Male sex workers also trade sex with injectors, 20% of whom reported buying anal sex in the previous year (and only 3% of them used a condom consistently). As a consequence, sexually

them injecting drug users (Ministry of Health Malaysia and WHO, 2004; Huang and Hussein, 2004). The intersection of drug injecting and HIV is most prominent in the east of the country. In Keleantan, estimated HIV prevalence among injectors was 41% in 2002, and in Johor and Terengganu it was 31% and 28%, respectively (Ministry of Health Malaysia and WHO, 2004). More recently, declines in HIV prevalence have been observed among users tested at 27 rehabilitation centres and 33 prisons, but that 'trend' may be due to the large increase in the number of tests carried out among drug users and injectors (19 500 were tested in 2000, but 50 350 in 2002) (Ministry of Health Malaysia and WHO, 2004).

The growing proportion of HIV cases attributed to sexual transmission (17% in 2002 compared with 7% in 1995) shows that the virus is spreading in the general population. Among sex workers in parts of Kuala Lumpur, for example, HIV prevalence as high as 10% has been found (Ministry of Health Pakistan and WHO, 2004). On the other hand, a decline in the number of reported cases of syphilis and gonorrhoea since the late 1990s suggests that sexual risk-taking might be less widespread than feared.

Drug injectors and paid sex

A heterosexual epidemic is likely to increase rapidly in countries where commercial sex is common and the epidemic establishes itself among sex workers, many of whom inject drugs.

Or it can happen when large numbers of drug injectors have sex with sex workers. Other clients will then pass the virus to more sex workers and to their girlfriends and wives, significantly widening the networks of HIV transmission.

The combination of drug use and sex work is often lethal. In Ho Chi Minh City, **Viet Nam**, one study found that about half of sex workers who injected drugs were infected with HIV, compared with only 8% of those who did not use any drugs. Considering that 38% of the sex workers who participated in that survey were drug injectors, the scale of the problem in that city is clear. Moreover, drug-using sex workers were about half as likely to use condoms as those who did not use drugs, according to another large study. Street-based sex workers who injected drugs (and used non-sterile injecting equipment) were one sixth as likely to use condoms, compared with their non-injecting counterparts. In other words, those sex workers who were most likely to be exposed to HIV were also the ones least likely to use condoms regularly.

Generally, even when the overall proportion of sex workers who inject drugs is low, the proportion of female drug users who sell sex tends to be high. In **China's** Sichuan province, for example, 47% of female drug injectors included in behavioural surveillance said they had sold sex for money or drugs in the previous month. Condom use was reportedly quite high in commercial sex (about 60%), but with regular partners it was 17%. In neighbouring Yunnan province, which has a long-established HIV epidemic among drug injectors, 21% of female injecting drug users sold sex (and 88% said they used a condom with their last client).

On the other hand, drug injectors who buy sex and are infected with HIV are likely to transmit HIV to sex workers, who can then pass it on to other clients, unless they use condoms consistently. As Figure 13 below shows, except in Thailand, drug injectors tend to avoid condoms when paying for sex. In many places, drug injectors reported even higher levels of regular and casual partnerships and, as a rule, condom use in those partnerships was even lower than in commercial sex. In the Indian city of Chennai, for example, as many as 46% of injectors were married or had live-in partners. This has probably contributed to the fact that Chennai also has among the highest HIV prevalence rates among pregnant women in India.

Percentage of male injecting drug users who buy sex — report of consistent condom use during commercial sex, various cities

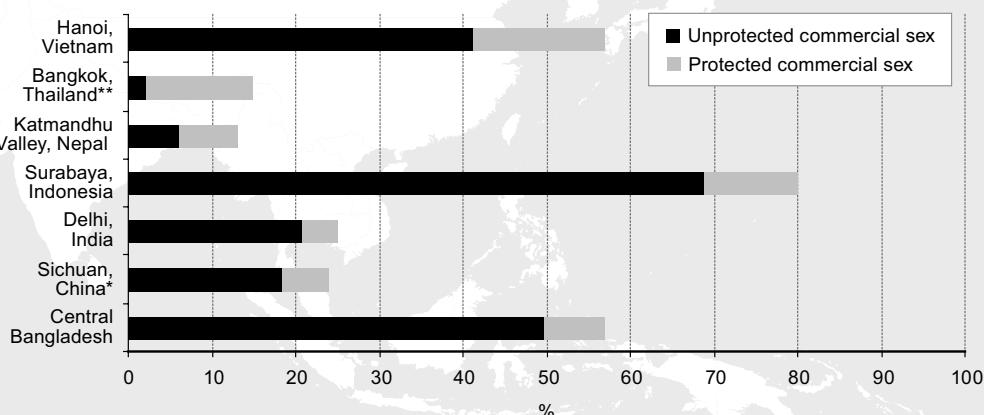


Figure 13

REALITY CHECKS

A minority of men in Asia frequent sex workers. In a survey of over 1200 men in health facilities in the **Philippines**, just 6% of adult men said they had bought sex in the previous six months, while in **Myanmar** 7% of over 3500 men said they had paid for sex in the preceding year. In central **Thailand** that proportion reached 16%. Still, in many Asian countries enough people buy and sell sex—and they do so frequently enough—to make commercial sex a major factor in the region's epidemics. Cambodia and Thailand are examples where serious HIV epidemics in the 1990s focused on the sex work industry. Subsequent prevention efforts in both countries managed to hold their epidemics in check. In the early 2000s, fewer men were visiting sex workers and condom use rates during commercial sex were high. HIV prevalence among clients of sex workers fell considerably, greatly reducing the chances that sex workers themselves, their clients, and their clients' wives, other girlfriends and children would become infected with HIV (MAP, 2004b).

Prevention efforts have been stepped up in recent years, but HIV is spreading extensively in lower-risk populations.

After peaking at 3% in 1997, national adult HIV prevalence in **Cambodia** fell by one third, to 1.9% in 2003 (National Center for HIV/AIDS, Dermatology and STIs, 2004). The reasons for this are twofold: increasing mortality and a decline in HIV incidence which, according to recent estimations, fell steeply between 1994 and 1998, before stabilizing. A closer examination of HIV incidence among sex workers shows that the rates of new infections among both brothel-based and non-brothel-based sex workers decreased by half between 1999 and 2002, and HIV prevalence among the former dropped from 43% in 1998 to 21% in 2003 (Saphonn et al., 2005; National Center for HIV/AIDS, Dermatology and STIs, 2004). Behaviour changes probably helped bring about these incidence trends (see *AIDS epidemic update 2004*). Those changes will need to be sustained. Recent behavioural surveys show more men are now visiting sex workers. In 2001, about 22–26% of moto-taxi drivers, and police and military personnel said

they had paid for sex in the previous three months; two years later, more than 35% said they had bought sex. Fortunately, condom use is very high—80% or more of the clients said in 2003 that they consistently used condoms during commercial sex in the previous three months, as did sex workers. Among the latter, condom use rates have been increasing steadily since the late 1990s (National Center for HIV/AIDS, Dermatology and STIs, 2004). Meanwhile, the rate of new infections among pregnant women nationally appears to have stabilized in recent years. There is one anomaly, however, that warrants concern. In the west of Cambodia (along the Thai border), HIV incidence among pregnant women has increased significantly (rising from 0.35% to 1.48% between 1999 and 2002); it is also the only region in the country where HIV incidence among sex workers has not declined (Saphonn et al., 2005). High rates of internal migration may be one of the factors causing that trend.

Thailand has been widely hailed as one of the success stories in the response to AIDS. By 2003,

estimated national adult HIV prevalence had dropped to its lowest level ever, approximately 1.5% (UNAIDS, 2004).

However, Thailand's epidemic is far from over. The fact that infection levels in the most at-risk populations are much higher is a reminder that the achievements need to be actively sustained. Just over 10% of brothel-based female sex workers were HIV-infected in 2003, as were 45% of injecting drug users who attended treatment clinics.

There are some signs that suggest either the country's prevention efforts are waning or their effectiveness and relevance is compromised. Among men in northern Thailand who reported buying sex, only 55% said they used condoms on each occasion (Lertpiriyasuwat et al., 2003). Among young men in the same region, the rates of condom use were even lower: less than one third of those who paid for sex said they always used condoms. Another study in four cities (including

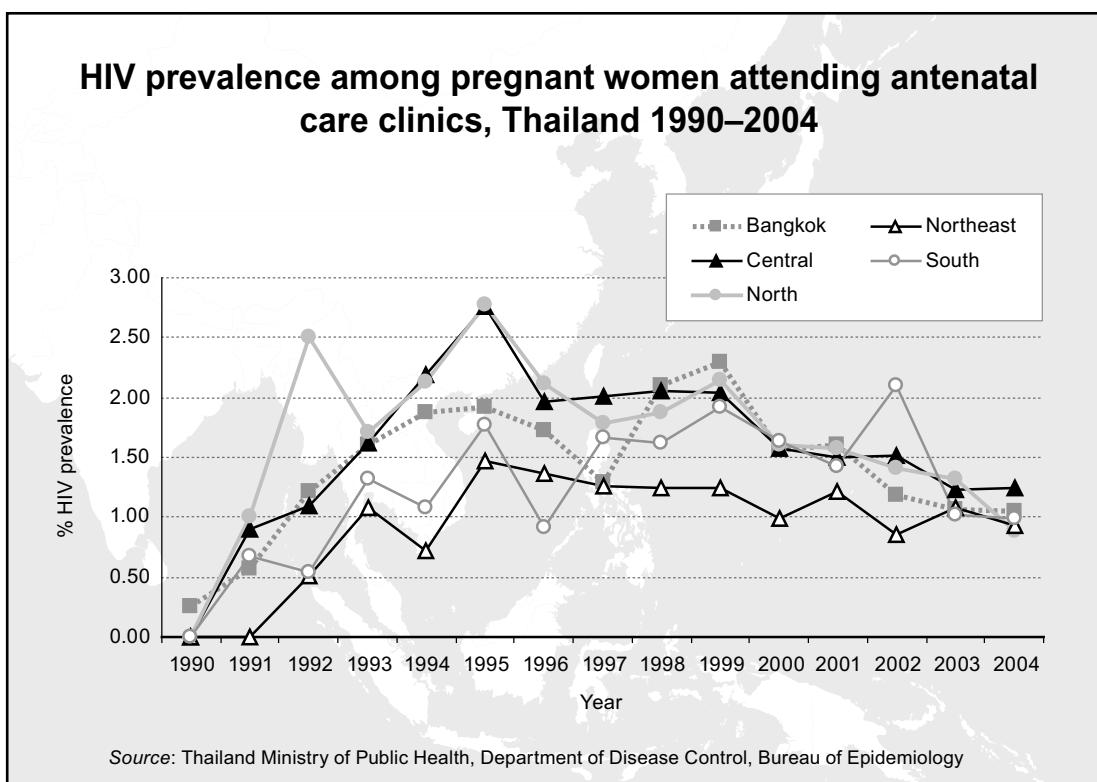


Figure 14

Bangkok and Chiang Mai) found that sex workers reported using condoms only 51% of the time, and mostly with foreigners—a large difference compared to the remarkable 96% rate reported in a 2000 study in Bangkok. Only about one in four Thai clients was likely to use a condom (Buckingham and Meister, 2003; UNDP, 2004).

Thailand's challenge now is to revitalize and adapt prevention strategies to match recent shifts in the epidemic. This will require revamping safe sex campaigns in a context where patterns of commercial sex have changed. There has been a huge increase in the number of 'indirect' sex service establishments, such as massage parlours (from about 8000 in 1998 to 12 200 in 2003). In Bangkok alone, an estimated 34 000 women were trading sex in such non-brothel settings in 2003. Regulating these forms of sex work using the approach of the 100% Condom Programme is difficult; outreach programmes that tap the knowledge and potential solidarity of sex workers would be more suitable to access this population (UNDP, 2004).

Thailand's epidemic is more diverse than it was a decade ago. Male clients of sex workers are infecting their wives and girlfriends, with the result that as many as half of new HIV infections

each year are happening within marriage or regular relationships where condom use tends to be very low (Thai Working Group on HIV/AIDS Projections, 2001). Generally, there is evidence that more young Thais, especially women, are having premarital sex. Among them, too, condom use is not the norm; a mere 20% to 30% of sexually-active young people are using condoms consistently (Punpanich et al., 2004; UNDP, 2004).

Sex between men is another, generally overlooked, facet of the Thailand's epidemic. In one recent study in Bangkok, 17% of men who have sex with men were HIV-positive; almost one quarter of them had also had sex with women in the previous six months (Van Griensven et al., 2005).

One of the neglected dimensions of Thailand's epidemic has been the role of injecting drug use. When comparing HIV prevalence among injecting drug users and among commercial sex workers, two trends emerge. The percentage of sex workers with HIV decreased significantly after 1995. Among injecting drug users, however, the reverse occurred. HIV prevalence in drug injectors rose in every region of the country, and reached as high as 61% in the Northern Region (in 2000) and stood at 45% or higher in the Bangkok, Central and

Southern Regions in 2003 (Poshyachinda, 2005). It has been estimated that as many as one fifth of new HIV infections so far in this decade have been due to unsafe drug injecting (Thai Working Group on HIV/AIDS Projections, 2001). Yet, only a small proportion of Thailand's prevention efforts are focused on this area.

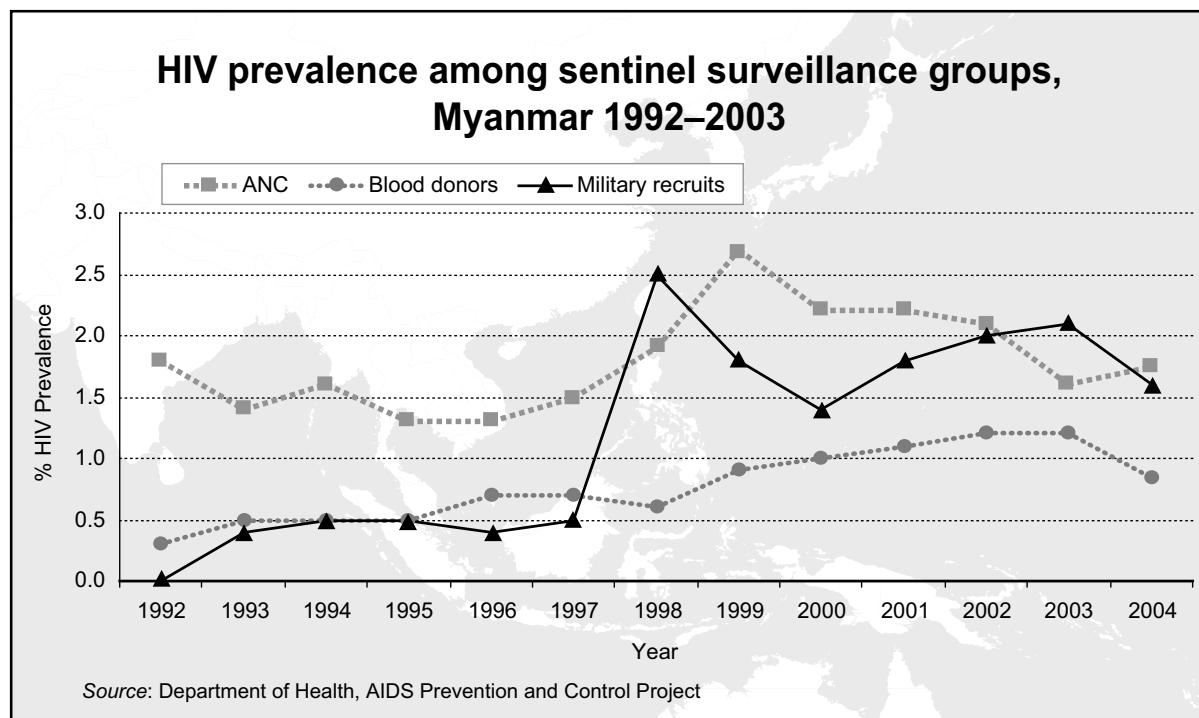
As has been found in Indonesia, incarceration appears to be a significant risk factor for HIV infection among drug injectors in **Thailand**. In the north of the country, more than one quarter (27%) of injecting drug users said they had been imprisoned, even before the special efforts by the government to stop drug dealing and use (MAP, 2005a). Among their counterparts who had never been to jail, HIV prevalence was 20%. However, among those who had been imprisoned and who said they had injected drugs in jail, HIV prevalence was 49%. These data suggest that many of the users are likely to have been infected in prison. Another Thai study has shown that that using non-sterile needles in police holding cells before going to jail doubled the likelihood of HIV infection (Buavirat et al., 2003).

While Cambodia and Thailand in the 1990s were planning and introducing strategies to reverse the spread of HIV, another serious epidemic was gaining ground in neighbouring **Myanmar**. There,

limited prevention efforts led to HIV spreading freely—at first within the most-at-risk groups and later beyond them. Consequently, Myanmar has one of the most serious AIDS epidemics in the region, with HIV prevalence among pregnant women estimated at 1.8% in 2004 (Department of Health Myanmar, 2004). The main HIV-related risk for many of the women now living with the virus was to have had unprotected sex with husbands or boyfriends who had been infected while injecting drugs or buying sex. Consistently high levels of HIV prevalence among sex workers has exacerbated Myanmar's epidemic. When tested, one in four sex workers (27%) were found to be HIV-positive in 2004, and prevalence among sex workers has not fallen below 25% since 1997. Very high HIV infection levels have been found among drug injectors: in 2004, 60% of injectors in Lashio tested HIV-positive, as did 47% in Myitkyena and 25% and 30%, respectively, in the country's main cities of Yangon and Mandalay. Nationally, HIV prevalence among injecting drug users was 34% in 2004, having decreased since 2001 (Department of Health Myanmar, 2004 and 2005).

Prevention efforts have been stepped up in recent years, but HIV is spreading extensively in lower-risk populations. At eight (out of 29) sentinel sites, HIV prevalence among pregnant women has exceeded

Figure 15



3%, and among men seeking treatment for other sexually transmitted infections it exceeded 5% at as many sites in 2003, while 1.4% and 1.8% of new military recruits were found to be infected with HIV in Yangon and Mandalay, respectively (Department of Health Myanmar, 2004). Although significant proportions of young men frequent sex workers, there is a lack of national data on condom use rates during commercial sex. The limited behavioural information that is available currently suggests an ambiguous

HIV transmission is to be prevented. Sex workers in Bangladesh have a higher client turn-over rate than in any other south Asian country, and consistent condom use during paid sex is rare (depending on the region, 0–12% of sex workers said they used condoms with new clients). In addition, risky drug injecting practices have caused HIV infection levels in injectors to double from 1.7% to 4% between 2000-2001 and 2002-2003. Given that at least one half of drug injectors in three regions said they used

Countries in the region need to heed the examples of countries that have chosen to provide large-scale and comprehensive prevention services to people most in need of them.

picture; there are, however, a few signs that the 100% condom programme launched in 2001 (reportedly reaching 58 townships by 2004) could be making some inroads (Thwe, 2004). It will require a much stronger prevention effort (including a comprehensive programme for injecting drug users) if Myanmar is to deal with an AIDS epidemic that already ranks among the most serious in the entire region.

In 2004, median HIV prevalence nationally among women attending antenatal clinics was 1.5% (ranging from 0% in Bago to 5% in Muse). Prevalence has remained fairly constant over the previous five years in most urban areas, but there has been a clear decline among young people aged 15–19 years. Among military recruits the prevalence of HIV infection has ranged between 1.4% and 2.5% since 1998, and was measured at 1.6% in early 2004 (Department of Health Myanmar, 2004).

Most countries in Asia still have the opportunity to prevent major epidemics. **Bangladesh**, where national adult HIV prevalence is well below 1%, began initiating HIV prevention programmes early in its epidemic. Partly due to focused prevention efforts, HIV prevalence in female sex workers has stayed low (0.2–1.5% in different sentinel sites), and prevalence of other sexually transmitted infections declined from over 30% in 1999 to under 10% in 2002 (Ministry of Health and Family Welfare Bangladesh, 2004). However, the quality and coverage of those initiatives requires strengthening if more rapid

non-sterile equipment the last time they injected drugs, those HIV trends could persist. Indeed, in one part of the capital, Dhaka, 9% of injectors tested HIV-positive in 2003-2004 (prevalence was 4% overall among injectors in the city) (Ministry of Health and Family Welfare, 2004). A large proportion of drug injectors (as many as one in five in some regions) report buying sex and among them, fewer than one in ten consistently used a condom during commercial sex in the previous year (Ministry of Health and Family Welfare, 2004).

Meanwhile, in the **Philippines**, national adult HIV prevalence has stayed low, even among at-risk populations (Mateo et al., 2004). However, there are signs that this might change. Condom use during commercial sex is infrequent (especially among non-brothel based sex workers), prevalence of sexually transmitted infections has been rising, and high rates of non-sterile needle use among drug injectors has been found in some parts (77% in Cebu City) (Mateo et al., 2004; Wi et al., 2002; Department of Health Philippines, 2003). It is likely that a strong system of routine screening for sexually transmitted infections, along with other HIV prevention services for sex workers, has helped keep HIV infections among them low (MAP, 2005b). However, several gaps remain in the country's response. Information and education about AIDS needs to be stepped up: according to a major 2003 survey, more than 90% of respondents still believed that HIV could be transmitted by sharing a meal with an HIV-positive person.

A similar situation is apparent in **Lao PDR**, where about two thirds of HIV cases have been occurring in two areas (the capital, Vientiane, and Savannakhet). HIV prevalence is still low overall, but there are a few danger signs. Among women who work in venues that also provide sexual services, prevalence of gonorrhoea is high (13–14%) and, in Vientiane and Savannakhet, about 1% of the women have tested HIV-positive (Phimphachanh and Sayabounthavong, 2004). In Vientiane, young men have become more sexually active in recent years, according to one recent behavioural study. About 60% of them had more than two female partners in the first six months of 2004, almost 10% had one or more male partners, and over 30% had paid for sex at least once (Toole et al., 2005). Most of the men who have sex with men also have sex with women. These findings underline the need for a comprehensive HIV prevention strategy that includes improved treatment services for sexually transmitted infections.

In **Japan**, the number of reported annual HIV cases has more than doubled since 1994–1995, and reached 780 in 2004—the highest number to date. Much of this trend is due to increasing infections among men who have sex with men. Sex between men accounted for 60% of new HIV cases in 2004. About one third of the total cases in that year were among people younger than 30 years, which seems to confirm earlier reports of an increase in sexual activity and unsafe sex among young men and women (Ono-Kihara et al., 2001; Nemoto, 2004).

NO DELAY

Countries in the region need to heed the examples of countries that have chosen to provide large-scale and comprehensive prevention services to people most in need of them. In all those cases, programmes were targeted at the behaviours and contexts that were causing the most new infections.

This means that sex workers (male and female) and their clients need to know how to protect themselves from HIV, clients need easy access to condoms, and they should always be required to use them. Sex workers need regular access to high quality sexually transmitted infection services. Injecting drug users need better access to harm reduction and drug treatment services, and programmes must tackle the linkages between drug injecting and commercial sex. Finally, the political, legal and institutional environment must support the provision of appropriate HIV prevention services to those most at risk.

The AIDS epidemics are now changing in several Asian countries—including those that managed to limit earlier HIV epidemics. Among the latter, **Cambodia** and **Thailand**, for example, need to tackle their changing epidemics more boldly. This will require designing and implementing programmes that can limit HIV transmission among at-risk groups (such as drug injectors, sex workers, including those who are not brothel-based, and men who have sex with men) that so far have not featured centrally in many countries' responses.

For **Indonesia** and **Pakistan**, time is of the essence. Both countries urgently need to scale up their responses if they are to avoid serious HIV epidemics. The long-standing epidemics in several other countries involve a further challenge: providing treatment and care to the thousands of people who are infected. In 2005, an estimated 1.1 million people in Asia needed antiretroviral treatment, the second-highest number in the world. Treatment provision has grown substantially since early 2004—nearly tripling from 55 000 to 155 000 by mid-2005. Much of that momentum has been due to strong efforts in **Thailand** (where more than half the people in need of the drugs were getting them) and **China**. A huge challenge still remains: some 85% of people needing treatment were not yet receiving it in mid-2005 (UNAIDS/WHO, 2005).

EASTERN EUROPE AND CENTRAL ASIA

HIV and AIDS statistics and features, in 2003 and 2005

	Adults and children living with HIV	Number of women living with HIV	Adults and children newly infected with HIV	Adult prevalence (%)	Adult and child deaths due to AIDS
2005	1.6 million [990 000–2.3million]	440 000 [300 000–620 000]	270 000 [140 000–610 000]	0.9 [0.6–1.3]	62 000 [39 000–91 000]
2003	1.2 million [740 000–1.8 million]	310 000 [210 000–430 000]	270 000 [120 000–680 000]	0.7 [0.4–1.0]	36 000 [24 000–52 000]

The epidemics in Eastern Europe and Central Asia continue to grow and are affecting ever-larger parts of societies in this region. The number of people living with HIV in this region reached an estimated 1.6 million [990 000–2.3 million] in 2005—an increase of almost twentyfold in less than ten years. AIDS claimed almost twice as many lives in 2005, compared with 2003, and killed an estimated 62 000 [39 000–91 000] adults and children. Some 270 000 [140 000–610 000] people were newly infected with HIV in the past year. The overwhelming majority of people living with HIV in this region are young; 75% of the reported infections between 2000 and 2004 were in people younger than 30 years (in Western Europe, the corresponding figure was 33%) (Euro HIV, 2005).

The patterns of the epidemics are changing in several countries, with sexually transmitted HIV cases comprising a growing share of new diagnoses. In 2004, 30% or more of all new reported HIV infections in **Kazakhstan** and **Ukraine**, and 45% or more in **Belarus** and the **Republic of Moldova**, were due to unprotected sex (EuroHIV, 2005). Increasing numbers of women are being affected, many of them acquiring HIV from male partners who became infected when injecting drugs.

The bulk of the people living with HIV in this region are in two countries: the **Russian**

Federation and **Ukraine**. Ukraine's epidemic continues to grow, with more new HIV diagnoses occurring each year, while the Russian Federation has the biggest AIDS epidemic in all of Europe. Both epidemics have matured to the point where they constitute massive prevention, treatment and care challenges.

HIV has consolidated its presence in every part of the former Soviet Union, with the exception of Turkmenistan (where little information is available on the HIV epidemic). Several Central Asian and Caucasian republics are experiencing the early stages of epidemics, while quite high levels of risky behaviour in south-eastern Europe suggests that HIV could strengthen its presence there unless prevention efforts are stepped up.

RUSSIAN FEDERATION

By the end of 2004, approximately 300 000 HIV cases had been officially registered in the **Russian Federation** since the beginning of the epidemic (Russian Federal AIDS Centre, 2005; EuroHIV, 2005). The actual number of total infections is much higher: an estimated 860 000 people (420 000–1 400 000) were living with HIV in the Russian Federation at the end of 2003 (UNAIDS, 2004). The steep decline in newly registered cases in 2001–2003 (see *AIDS*

epidemic update 2004) did not continue in 2004, when just under 34 000 new infections were diagnosed (EuroHIV, 2005). That decline appears not to have represented an actual slowing of the epidemic; it reflected changes in HIV testing policy, the smaller number of tests carried out in population groups with high-risk behaviour (especially drug injectors and prisoners), and shortages of test kits (Pokrovskiy, 2005).

Young people are bearing the brunt of new HIV infections. Each year, more than three quarters of new diagnoses are in people aged 15–29 years (Pokrovskiy, 2005; EuroHIV, 2005; Field, 2004). At the heart of the country's epidemic are the extraordinarily large numbers of young people who inject drugs. There were more than 340 000 registered

well-established programme, set up in 1998, reached an estimated 80% of drug injectors in the city, while that of Tomsk was more recent and coverage ranged around 10%. Of the drug injectors who participated in Pskov and Tomsk's harm reduction programmes, only 6% and 8%, respectively, reported using non-sterile syringes in the month prior to the survey. Among their peers who did not take part in the programmes, 19% in Pskov and 30% in Tomsk had used non-sterile syringes—as had 31% of injectors in the city of Novgorod (which had no harm reduction programme). Condom use was also substantially higher among programme participants. In Pskov, 43% of participants had used a condom the last time they had sex (compared with 28% for non-participants) and in Tomsk the corresponding

Young people are bearing the brunt of new HIV infections.

injecting drug users in the Russian Federation at the end of 2004, though the actual number of injectors could be four to ten times as high (Federal Service of the Russian Federation in Consumer Rights Protection and Human Welfare, 2005; UNODC, 2005). In early 2004, more than 80% of all officially reported HIV cases since the beginning of the epidemic had been among drug injectors (Russian Federal AIDS Centre, 2004). Unsafe drug injecting practices still account for most HIV transmission, with an estimated 30–40% of injecting drug users using non-sterile needles or syringes, which greatly increases the odds of HIV transmission. As a result, large HIV epidemics among drug injectors continue to be reported in several regions. Two recent studies in St Petersburg, for example, found that more than 30% of injecting drug users were HIV-positive (Verevochkin et al., 2005), while in the provincial cities of Cherepovets and Velikiy Novgorod HIV prevalence of 12% and 15% was measured among drug injectors (Smolskaya et al., 2005). These figures are not surprising, given the high levels of risk behaviour among injecting drug users, 73% of whom in Cherepovets had re-used others' needles and syringes (Smolskaya et al., 2005).

In striking contrast are the findings of an evaluation of harm reduction programmes in the cities of Pskov (in the north-west) and Tomsk (in the north-east), conducted in 2003–2004. Pskov's

figure was 58% (30% for non-participants). HIV infection levels among drug injectors in Pskov and Tomsk were a fraction of those in Novgorod (0.3% and 2.1%, respectively, compared with 14.7%) (Eroshina et al., 2005a). Such findings are consistent with those of a recent rapid assessment of harm reduction programmes in 15 cities of the Russian Federation. In all but one of the cities, using non-sterile needles was lower among injecting drug users who had participated in such programmes compared with those who had not—in several cases by very large margins (Eroshina et al., 2005b).

Despite moves to introduce some prevention initiatives for prison inmates, Russia's prison system has been disproportionately affected by the epidemic. HIV prevalence in the country's jails has been estimated to be at least four times higher than in the wider population (Russian Ministry of Justice, Department of Corrections and Russian Federal AIDS Center, 2004). In a recent study among juvenile detainees, homeless persons and women at a temporary detention centre in Moscow, more than one half the female juvenile detainees had a sexually transmitted infection, as did almost two thirds of the women at the temporary detention centre and three quarters of the homeless women. Among male detainees 2.9% were HIV-positive, as were 4% of the women at the detention centre and 1.8% of the

homeless women. Most of the people with HIV appear to have been infected during unprotected paid sex and/or injecting drug use. HIV prevalence in these populations was found to be 30–120 times higher than in the general population, and was not much lower than that reported for injecting drug users (6%) in the city (Shakarishvili et al., 2005). Drug policy reforms started in 2004 have changed some of Russia's drug laws (which had mandated long prison sentences for the possession of even minute quantities of proscribed drugs). More than 32 000 drug offenders have been either released from prison or had their sentences shortened, which could help reduce HIV transmission in prisons and detention facilities.

The epidemic, meanwhile, is becoming more mature. Most drug injectors are sexually active and, if HIV-infected, they can transmit the virus sexually to their casual or regular partners (since many of them do not engage in protected sex). Studies in Togliatti and Nizhny Novgorod found that more than 80% of male injectors had not used condoms regularly in the last month (Lowndes et al., 2002; Filatov and Suharsky, 2002; Rhodes et al., 2004). In Cherepovets and Veliki Novgorod, roughly half the sexually-active drug injectors were not using condoms with their casual partners (Smolskaya et al., 2005). Consequently, a significant rise in sexual transmission has been

in heterosexually transmitted infections. They include the continuing growth of the sex industry, the emergence of a sizeable and largely female mobile workforce in the informal economy, and the rising numbers of women who migrate in search of work. This gradual feminization of the epidemic is visible even among very young women. In 2004, women in their late teens (15–20 years) accounted for a bigger share of newly reported HIV cases than did men in that age group. Some of these women were infected through injecting drug use; the numbers of female drug injectors have increased significantly in the past decade. Many of the women, however, acquired HIV during unprotected sex with infected men (Federal Service of the Russian Federation in Consumer Rights Protection and Human Welfare, 2005). Initially concentrated around injecting drug users, the epidemic has now found additional momentum among sex workers and their clients, and among the non-injecting casual or regular sex partners of drug injectors.

This new phase of the Russian Federation's epidemic is most evident in those regions where HIV was first observed (such as Kaliningrad, Krasnodarski Krai, Nizhniy Novgorod and Tver). It is also apparent, however, in places with relatively recent epidemics, such as Moscow, Novgorod, Orenburg, Rostov, Volgograd, and

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observed. About 6% of registered infections were related to sexual transmission in 2001; by 2004, that proportion had grown to 25% (Federal Service of the Russian Federation in Consumer Rights Protection and Human Welfare, 2005). More women are acquiring HIV. While the majority of people living with HIV in the Russian Federation are men, about 38% of total registered HIV cases are in women—a bigger share than ever before. Overall, HIV infection levels measured among pregnant women rose from less than 0.01% in 1998 to 0.11% in 2003.

Several additional factors—most of them rooted in the country's ongoing socioeconomic changes—are also contributing to the increase

in the republics of Chechnya, Ingushetia, and Kabardino-Balkarsk—in all of which more than half the newly registered HIV cases in 2004 occurred during unprotected sex (Federal Service of the Russian Federation in Consumer Rights Protection and Human Welfare, 2005). Safe sex campaigns have increased in recent years, but a recent survey among young people in Moscow suggests such campaigns will have to grow considerably in both number and scale before they will achieve a marked impact. The survey noted no positive changes in sexual behaviour, with condom use decreasing slightly among people in their twenties (FOCUS-MEDIA Public Health and Social Development Foundation, 2005).

Meanwhile, more children are being born to HIV-positive mothers, making prevention of mother-to-child transmission a priority. Reported cases of pregnant women with HIV have increased greatly in the past six years, and the total number of children born to HIV-positive mothers now exceeds 13 000 (Russian Federal AIDS Centre, 2005). According to one recent survey, HIV-positive women and children, however, face widespread discrimination, including from health care professionals, (Human Rights Watch, 2005).

Unless effective prevention efforts are expanded—particularly among injecting drug users and their sexual partners, as well as among sex workers and their clients—the Russian Federation's AIDS epidemic will keep growing.

The need for a comprehensive response to the combined challenges of HIV and injecting drug use, especially among young people, is particularly urgent. Drug-related services, including prevention of drug use, drug treatment services and harm reduction programmes (including needles and syringe exchange, substitution therapy, condoms, etc.) are an integral part of such a response. This applies also to those regions where injecting drug use is rampant but where HIV prevalence among users is still comparatively low. As anticipated, the epidemic appears to be strengthening its presence beyond the 10 territories where over half of all reported cases HIV cases to date have occurred. There have been sharp increases in HIV

Hide and seek

Rooted in the socioeconomic and sociopolitical upheavals of the 1990s, Russia's AIDS epidemic is driven mainly by the extraordinarily large numbers of people who inject drugs, many of them young and out of work. More than 80% of all registered HIV infections to date have been in drug injectors, a significant share of whom are long-term injecting drug users. While some users experiment with drug injecting for short periods before abandoning the practice, others become drug-dependent. More than half the injectors taking part in a study in Togliatti City, for example, had been injecting for more than five years and a further one quarter had been doing so for three to five years (Rhodes et al., 2004a). Estimates vary, but at least 1% and possibly as much as 2% of the country's population inject drugs, and an estimated 5–8% of all men younger than 30 years have injected drugs (Molotilov et al., 2003).

A shift away from injecting home-produced drugs to injecting heroin powder has been apparent in many Russian cities since the late 1990s. However, the practice of injecting in groups—and multiple re-use of injecting equipment—has continued. So, too, has the practice of 'front-loading' and 'back-loading' (squirting drug solutions from one syringe into another) (Rhodes et al., 2004a). Both practices have been shown to greatly increase the risk of HIV transmission.

There is enough evidence from around the world that easier access to needles and syringes can help reduce the odds of HIV transmission ((Rhodes et al., 2004a; Des Jarlais et al., 2002; Gibson et al., 2001). The Togliatti City study cited above found that injectors who acquired their equipment from pharmacies were 12 times less likely to use, or let others use, non-sterile needles and syringes, compared with their counterparts who got the equipment from friends or other users (Rhodes et al., 2004a). Syringe exchange projects have increased in the Russian Federation in recent years, but are still too few in number to significantly limit the AIDS epidemic's growth. Although it is legal to purchase injecting equipment from pharmacies, many drug injectors still use non-sterile equipment. Policing strategies can have the effect of encouraging the use of non-sterile equipment. In one five-city study, 40% of the injectors attending syringe exchanges said they did not carry equipment in order to avoid confrontations with the police. Research from elsewhere in the world suggests that high-visibility policing strategies are associated with a reluctance among drug injectors to carry injecting equipment, fewer visits to syringe exchanges and with shifts toward increased injecting risk behaviour (Aitken et al., 2002; Grund et al., 2001). Indeed, in Togliatti City, injectors who had been arrested for drugs were four times more likely to use non-sterile equipment than were those who have never been arrested. Such findings underscore the need to expand syringe distribution coverage among drug injectors, in conjunction with wider access to community-based drug treatment and drug use prevention services. Achieving this will require building innovative partnerships between law enforcement and public health agencies, which could help create an enabling environment for HIV prevention in the long term (Rhodes et al. 2004a).

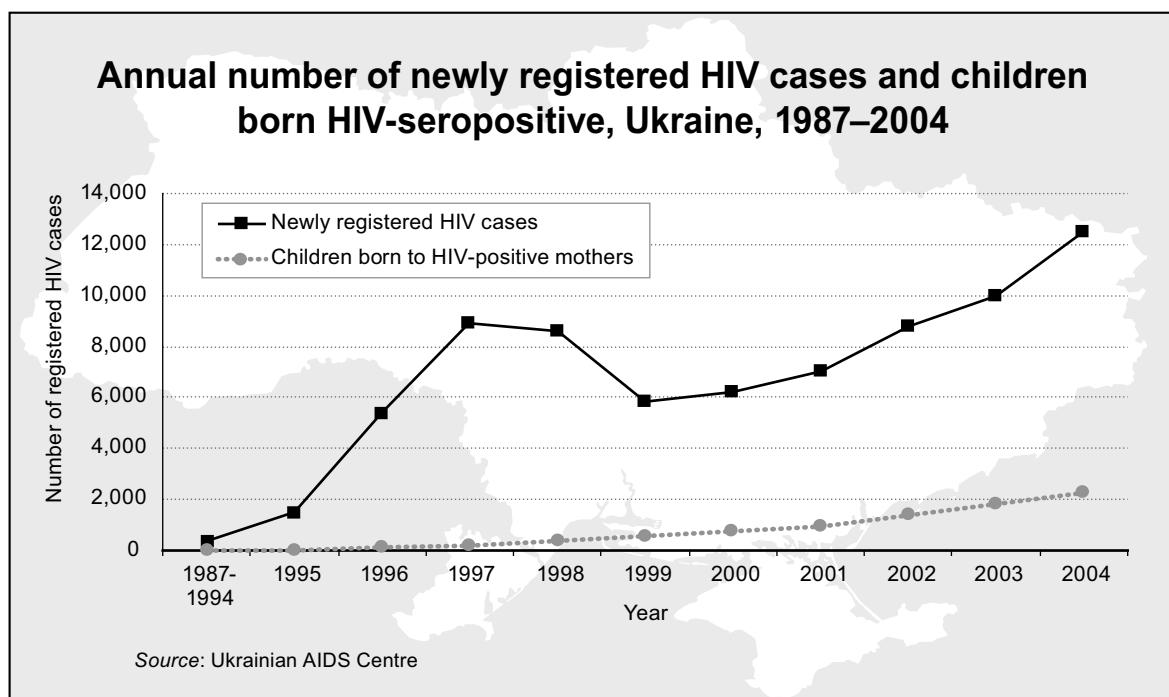


Figure 16

diagnoses in the oblasts of Ivanovo, Perm and Tjumen, as well as in the Republic of Tatarstan, for example (Federal Service of the Russian Federation in Consumer Rights Protection and Human Welfare, 2005). Timely prevention efforts are needed to avoid the epidemic from growing further.

Along with the need for more effective prevention programmes is the responsibility to ensure treatment and care services to the growing number of Russians living with HIV, including those who belong to marginalized populations. Progress on this front remains slow. By mid-2005, fewer than 10% (a mere 4000–6500 people) of those in need of antiretroviral therapy were receiving it (UNAIDS/WHO, 2005).

There are signs of growing recognition on the Russian government's part that the epidemic's ongoing growth demands a stepped-up response. Substantial international funding has been made available to scale up harm reduction programmes (most of them targeting the ten most-affected oblasts) and drug treatment services. Methadone substitution therapy (which can boost adherence to antiretroviral treatment, as well as enhance the health and social stability of drug injectors), however, still remains illegal, and harm reduction projects are few in number. Nevertheless, the drug policy reform process, which commenced in 2004, could mark a step forward on this front. Domestic

spending on AIDS also looks set to expand, with much of the additional funds earmarked for a larger treatment and care programme. Stronger national leadership and coordination of the AIDS response is needed to marshal the various role players, including people living with HIV, into a concerted effort.

UKRAINE

Ukraine, with estimated adult HIV prevalence of 1.4%, remains the worst-affected country in Europe. Fuelled by unsafe injecting drug use and unprotected sex, its epidemic shows no signs of abating. The annual number of newly reported HIV cases continues to rise and exceeded 12 400 in 2004, almost 25% more than the 10 000 cases diagnosed in 2003 and almost double the number diagnosed in 2000 (Ukrainian AIDS Centre, 2005a; EuroHIV, 2005). These figures underestimate the actual size of the epidemic by a wide margin since they only reflect infections among people who have been in direct contact with official testing facilities.

The epidemic is rapidly spreading beyond the ten regions in southern and eastern Ukraine where over two thirds of all HIV cases have been reported to date. Sharp increases in new reported infections are occurring in central regions of Ukraine previously thought to be minimally

affected. There is a growing risk that the epidemic could spread rapidly in these and other regions unless timely and effective prevention efforts are introduced on a wide scale.

Against the backdrop of widespread drug use, drug injecting remains a key factor in Ukraine's epidemic. The number of newly-reported HIV infections among injecting drug users continues to grow (Ukrainian AIDS Centre, 2005a). Although most injectors are young males, a significant proportion (23%) of those diagnosed with HIV in 2004 were females. A study in the eight most-affected regions found HIV prevalence among injecting drug users as high as 58% in Odessa and 59% in Simferopol (Ukrainian AIDS Centre, 2005b). Risk behaviour among injecting drug users remains widespread. A recent national study found that only 20% of drug injectors said they avoided using non-sterile injecting equipment and practised safe sex (Ministry of Health of Ukraine,

infected through sexual transmission of HIV has increased from 14% of new cases (1999–2003) to over 32% in 2004 (Ukrainian AIDS Centre, 2005a). Many of those people were infected by a sexual partner who likely acquired HIV through unsafe injecting drug use. However, a growing proportion of new, sexually-transmitted HIV cases involve people whose sexual partners do not have a history of injecting drug use (Grund et al., 2005). This underlines the diffuse nature of Ukraine's epidemic, with HIV now circulating within the general population and increasing numbers of women becoming infected. Women accounted for 42% of people newly-diagnosed with HIV infection in 2004 (Ukrainian AIDS Centre, 2005a). As a result, the number of children born to HIV-positive mothers continues to rise, and was over 2200 in 2004 as shown in Figure 16 (Ukrainian AIDS Centre, 2005a). However, on this front, Ukraine is making headway. The rate of mother-to-child transmission of HIV has decreased from

*Greater effort is needed to reach other vulnerable populations,
such as prisoners and men who have sex with men.*

2005). Safer behaviour was most common among clients of harm reduction programmes—24% of them used condoms consistently and avoided using non-sterile injecting equipment, compared to 16% of their peers who did not participate in those programmes (Ministry of Health of Ukraine, 2005). Harm reduction programmes are now being implemented in several Ukrainian regions with high HIV prevalence. Coverage of these programmes, though, remains low. Just 10% of the estimated 560 000 injecting drug users in Ukraine are covered by harm reduction programmes (Balakireva et al., 2003). Pilot programmes for substitution therapy among injecting drug users are now being implemented, but those services will have limited coverage.

Adding further impetus to the epidemic is the overlap between injecting drug use and commercial sex. In Odessa, 67% of sex workers who also injected drugs were HIV-positive, while in Donetsk, Lutsk, Poltava and Simferopol the corresponding figure ranged from 35% to 50%. HIV prevalence among non-injecting female sex workers in Odessa and Donetsk was much lower, at 17% (Ukrainian AIDS Center, 2005b). The proportion of people

28% in 2001 to less than 10% in 2003, one of the lowest in Eastern Europe (Ministry of Health of Ukraine, 2005).

Greater effort is needed to reach other vulnerable populations, such as prisoners and men who have sex with men. By the end of 2004, approximately 12 700 prisoners had been diagnosed with HIV in the country's prison system, of whom more than 3500 were still behind bars. Prisoners' knowledge of HIV is poor: according to one recent survey, only 39% knew how to prevent the sexual transmission of HIV. However, among prisoners who had been reached with prevention programmes in prison, 67% knew how to protect themselves against HIV infection (Ministry of Health of Ukraine, 2005). The epidemic among men who have sex with men is even more hidden, with only nine new cases of HIV in 2004 officially reported as sexual infections between men. Yet, there are signs that prevalence in this population group could be very high. In the first sentinel surveillance conducted among men who have sex with men, seven of 25 men in Odessa were found to be HIV-positive, as were two of the 22 men tested in Mykolaiv (Ukrainian AIDS Centre, 2005b). Knowledge and awareness

of AIDS among this population is also poor, and risky behaviour appears widespread. In a study in seven Ukrainian cities, only 55% of men said they had used a condom the last time they had sex with a man (Ministry of Health of Ukraine, 2005). Prevention activities among prisoners and men who have sex with men need to be intensified and scaled up.

Overall, in some regions of Ukraine, pilot projects appear to be encouraging safer behaviours. However, few in number and limited in scope, they are dwarfed by a large epidemic. In the absence of a scaled-up national response to the combined challenges of HIV, drug injecting and sexual risk behaviour, Ukraine's AIDS epidemic can be expected to continue expanding.

Women are increasingly affected (comprising 36% of new infections in 2004) and the epidemic is concentrated largely among people younger than 30 years. Strikingly, some 16% of HIV diagnoses in Latvia have been in teenagers (15–19 years) (AIDS Prevention Centre, 2005). The surge of new HIV cases reported in **Lithuania** in 2002 (when newly diagnosed increased fivefold in one year) appears to have subsided to some extent. Last year, 135 infections were newly reported, the vast majority of them attributable to injecting drug use (Lithuanian AIDS Centre, 2005).

In Belarus (where more than 6200 people had been diagnosed with HIV by the end of 2004) and **Moldova** (where the figure stood at over 2300), the epidemic shows no sign of slowing. Sexual

Expanding treatment access

Alongside the need for more and stronger prevention programmes stands the urgent and growing need to scale up treatment and care for the rapidly growing number of Ukrainians living with HIV, particularly those who belong to vulnerable populations. More than 17 000 people in Ukraine are estimated to be in need of antiretroviral treatment (WHO, 2005). Supported by the Global Fund, Ukraine is rapidly expanding access to antiretroviral treatment. Beginning in September 2004, more than 2400 new patients were put on treatment within one year, with 90% still alive and on treatment at six months. These programmes need to be expanded rapidly: 1138 people with AIDS died in the first seven months of 2005, almost one fifth of the total number of AIDS-related deaths to date in Ukraine (Ukrainian AIDS Centre, 2005a). The affordability of antiretroviral treatment remains a key issue. First-line regimens in Ukraine are among the cheapest in Europe currently, with prices as low as US\$ 260 per patient, per year. Keeping the price of antiretroviral medications low will determine whether treatment can be sustained and scaled-up in Ukraine.

In the Baltic states, the epidemic continues to grow but at a slower pace than in the early 2000s. The overall numbers of reported HIV infections remain low. Nonetheless, the total number of reported HIV cases in **Estonia**, the worst-affected of the Baltic states, has doubled since end-2001, reaching 4442 in 2004. Until 1999, a dozen or fewer new HIV cases were being diagnosed in Estonia annually, but in 2004, 743 new diagnoses were reported. An increasing share of infections are among women, who accounted for 33% of new HIV cases in 2004 (EuroHIV, 2005; Health Protection Inspectorate Estonia, 2005). **Latvia** is also seeing a steady rise in the total number of HIV cases, which by mid-2005 was more than six times higher than it had been in 1999 (3169 compared with 492). There are signs, though, that the epidemic's pace is slowing in Latvia, with new reported HIV infections decreasing consistently since 2001.

transmission of HIV has become much more prominent in **Belarus**, accounting for one half of newly-registered HIV cases in 2004 (Ministry of Health Belarus, 2005a). Injecting drug use remains a powerful factor as well, with recent studies among drug injectors showing HIV prevalence of 26% in Soligorsk, 31% in Minsk, and 34% in Zhlobin (Ministry of Health Belarus, 2005b). As elsewhere in the region, more than three quarters of new HIV cases are in young people (aged 30 years or less). Studies suggest that high-risk behaviour is common: some 30% of young drug injectors still use non-sterile syringes and over 50% use syringes already used by others, injecting in groups (Ministry of Health Belarus, 2005b). The **Republic of Moldova** is also seeing a decrease in the rates of HIV transmission among injecting drug users. In 2004, drug injectors accounted for 42% of HIV diagnoses, compared with 78% in

2001; more than one half of new diagnoses (55%) in 2004 were through heterosexual contact. There are also signs that HIV is circulating in diverse social networks. In sentinel surveillance studies in Chisinau, for example, almost 5% of sex workers tested HIV-positive, as have just under 2% of men who have sex with men (WHO-EURO and Pasteur Institute, 2003).

Among the **Central Asian** republics, **Uzbekistan** is experiencing the most dynamic epidemic. In 1999, just 28 HIV diagnoses were reported there; last year there were 2016 new HIV infections, bringing to more than 5600 the total number of HIV cases (EuroHIV, 2005). Injecting drug use is the driving force in this epidemic, which has its epicentre in the capital Tashkent and surrounding districts. Fuelling the epidemic is an overlap between injecting drug use and commercial sex. HIV prevalence of 10% was found among female sex workers in Tashkent in a recent study, and among women who traded drugs for sex, 28% were HIV-infected (Todd et al., 2005). **Kazakhstan**'s epidemic, too, is centred on young people who inject drugs, some of whom also engage in commercial sex. Almost 4700 HIV cases had been reported there by end-2004—more than three times the total just four years earlier (EuroHIV, 2005). This trend needs to be reversed through efforts to boost knowledge of HIV and encourage lower risk behaviour among drug injectors. In sentinel surveillance studies, fewer than half of injecting drug users knew the main ways in which HIV can be transmitted, and almost 60% of them used non-sterile injecting equipment. Few programmes exist to inhibit the spread of HIV among—and beyond—drug injectors in Kazakhstan who, by some estimates, could number as many as 200 000 (Kazakhstan AIDS Center). Sexual risk-taking is also very prevalent. Just 53% of drug injectors reported using a condom the last time they had sex, and syphilis prevalence of 25% has been found in sex workers. It is not known how widespread sex between men is, but in Almaty City men who have sex with men tend not to use condoms regularly: almost one third (32%) said they never used one during penetrative sex (Kazakhstan AIDS Center, 2005). HIV has made less dramatic inroads in **Kyrgyzstan** (where an average 150 new infections have been diagnosed annually since 2000) and in **Tajikistan** (where

more than one half of all HIV diagnoses to date occurred in 2004, mainly as a result of increased testing) (EuroHIV, 2005).

In the Caucasus, meanwhile, low-key and still-relatively stable epidemics are underway in **Armenia** and **Azerbaijan**. In both cases, though, the possibility of a sudden increase in HIV transmission cannot be ruled out. Research in Azerbaijan's capital, Baku, has revealed significant HIV prevalence among drug injectors and street-based sex workers (WHO Regional Office for Europe, 2004). A pronounced shift in HIV transmission routes is being reported in Armenia where, until quite recently, most reported infections were being attributed to unsafe sex (Armenian National AIDS Center, 2005). In 2004, though, two thirds of new cases were linked to injecting drug use against a backdrop of increasing drug injecting in the country (EuroHIV, 2005).

Although few new HIV diagnoses are being reported in most of south-eastern Europe, drug injecting and sexual risk behaviour in several countries could favour swift HIV spread once the virus establishes stronger footholds. Worst-affected in this subregion is **Romania**, where new infections are attributed to unsafe sex, most of it heterosexual (EuroHIV, 2005).

Generally, in Eastern Europe and Central Asia, current HIV data reflect the situation only among those people who come into contact with HIV testing programmes. As a result, not enough is known about HIV spread among people who do not interact with the authorities and/or testing services. Thus, for example, the role of unsafe sex between men in this region's epidemics remains largely a matter for conjecture. Few studies have been conducted among men who have sex with men, who as a group face discrimination and stigma across the region. Available research points to high levels of unprotected sex, with a significant proportion of men who have sex with men also having sexual relations with women (WHO Regional Office for Europe, 2004).

The total number of people receiving antiretroviral treatment almost doubled in the 12 months up to mid-2005, from 11 000 to 20 000 people, but lags far behind the number of people in need of treatment, with the largest disease burden in the Russian Federation and Ukraine.

CARIBBEAN

HIV and AIDS statistics and features, in 2003 and 2005

	Adults and children living with HIV	Number of women living with HIV	Adults and children newly infected with HIV	Adult prevalence (%) *	Adult and child deaths due to AIDS
2005	300 000 [200 000–510 000]	140 000 [88 000–250 000]	30 000 [17 000–71 000]	1.6 [1.1–2.7]	24 000 [16 000–40 000]
2003	300 000 [200 000–510 000]	140 000 [87 000–250 000]	29 000 [17 000–68 000]	1.6 [1.1–2.7]	24 000 [16 000–40 000]

The AIDS epidemic claimed an estimated 24 000 [16 000–40 000] lives in the Caribbean in 2005, making it the leading cause of death among adults aged 15–44 years. A total of 300 000 [200 000–510 000] people are living with HIV in the Caribbean, including the 30 000 [17 000–71 000] people who became infected in 2005. In the Caribbean Community (CARICOM) region 240 000 [150 000–450 000] people are living with HIV, including the 25 000 [12 000–65 000] people who acquired the virus in 2005. More than 20 000 [13 000–36 000] people died of AIDS in the past year in this region.¹

The Caribbean's status as the second-most affected region in the world masks substantial differences in the extent and intensity of its epidemics. Estimated national adult HIV prevalence surpasses 1% in **Barbados, Dominican Republic, Jamaica and Suriname**, 2% in the **Bahamas, Guyana and Trinidad and Tobago**, and exceeds 3% in **Haiti**. In **Cuba**, on the other hand, prevalence is yet to reach 0.2%.

While a few countries have made progress in monitoring and dealing with their epidemics, inadequate HIV surveillance hampers a detailed

understanding of recent epidemiological trends in some countries. Unfortunately, this applies also to countries which, in the past, have recorded alarming levels of HIV infection among pregnant women, including **Bahamas** and **French Guiana**. The reasons for such shortcomings include resource constraints but reluctance among public officials to publicize the scale of their AIDS epidemics might be a factor as well.

The region's epidemics are driven primarily by heterosexual intercourse (the documented mode of transmission in three quarters or more of all AIDS cases reported to date), with commercial sex a prominent factor, against a backdrop of severe poverty, high unemployment and gender inequalities. In-depth research on the interplay between the sex industry and HIV transmission, however, remains comparatively limited in the Caribbean. Even more infrequent is acknowledgement of the significant role sex between men plays in many Caribbean countries' epidemics. The overall share of reported HIV infections attributed to sex between men is approximately 12%, but homophobia and robust sociocultural taboos that stigmatize same sex

¹ CARICOM comprises: Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago.

relations mean that the actual proportion could be somewhat larger (Inciardi et al., 2005). Injecting drug use is responsible for a small minority of HIV infections currently; only in **Bermuda** and **Puerto Rico** does it contribute significantly to the spread of HIV.

New HIV infections among women are surpassing those among men. Young women in particular face considerably higher odds of becoming

partly accounts for such discrepancies, but also important is the relatively common practice of younger women establishing relationships with older men (who, by virtue of their age, are more likely to have acquired HIV). In some countries, sexual activity begins comparatively early—when surveyed, one quarter of 15–29 year-old women in **Barbados** said they had been sexually active by the time they turned 15. And almost one third of men aged 15–29 years reported multiple sexual

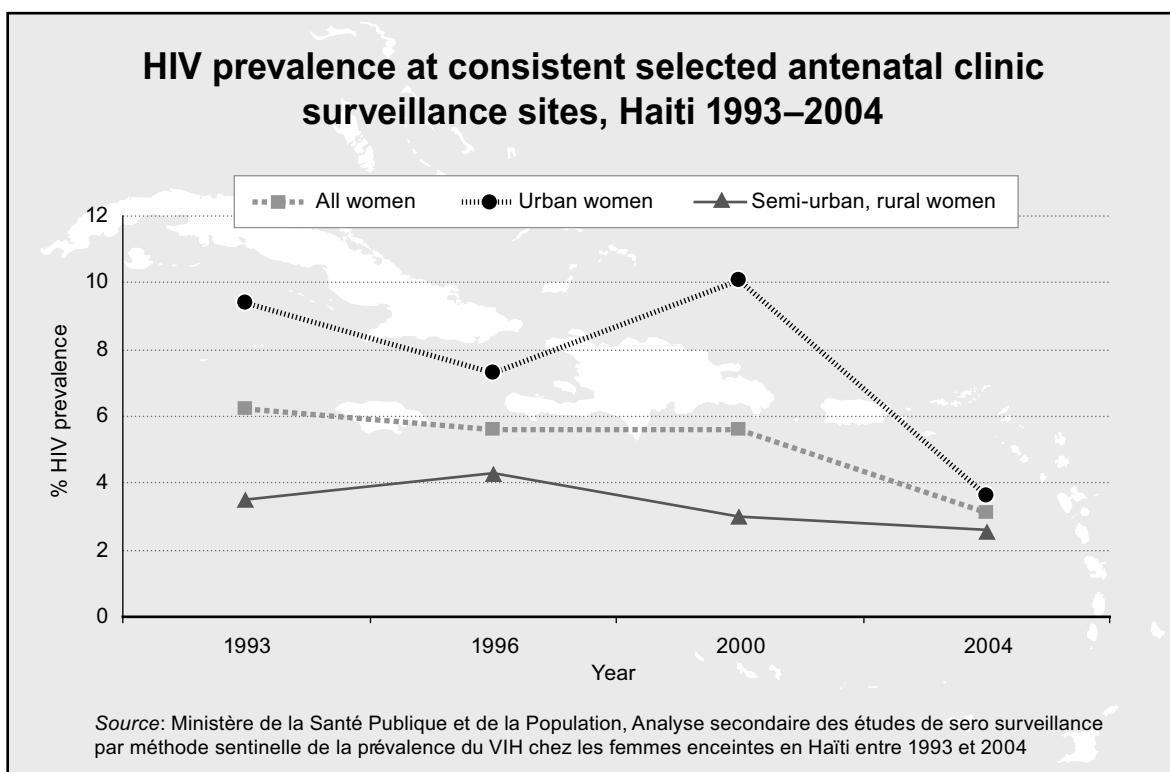
Several recent developments in the Caribbean give cause for guarded optimism.

infected than do young men. In **Trinidad and Tobago**, for example, HIV infection levels are six times higher among 15–19 year-old females than among males of the same age (Inciardi et al., 2005). Earlier studies indicated that women younger than 24 years in the **Dominican Republic** were almost twice as likely, and teenage girls in **Jamaica** were two-and-a-half times more likely to be HIV-infected, compared with their male counterparts (MAP, 2003). Girls' and young women's physiological susceptibility to infection

partnerships in the previous year, according to the same survey (Caribbean Technical Expert Group, 2004). Such trends are likely to provide the epidemic with momentum.

At the same time, several recent developments in the Caribbean give cause for guarded optimism. **Haiti's** epidemic, one of the oldest in the world, could be turning a corner. Overall, the percentage of pregnant women testing HIV-positive reduced by half from 1993 to 2003-2004

Figure 17



Is Haiti turning a corner?

HIV prevalence among pregnant women in Haiti generally has decreased since the mid-1990s, but the trends in urban and rural parts of the country have shown distinct differences. Data from five sentinel sites (distributed across the country) with comparable data from 1993 to 2003-2004 show HIV prevalence dropping steeply from 9% to 3.7% among urban women. Data for 1996 to 2003-2004 from a further nine sites also show a pronounced decline in HIV infection levels among urban women, from 8% to 4% (Gaillard et al., 2004b). This suggests that HIV prevalence in urban areas possibly peaked in the mid-1990s before gradually declining. However, among semi-urban and rural women, the changes are much less evident. For them, HIV prevalence at the five sites with comparable data was only slightly lower in 2003-2004 compared with 1993 (2.6% versus 3.5%).

What might account for these trends? On the one hand, a significant proportion of Haitians has reported changing their sexual behaviour. In 2000, almost twice as many men and women said they were abstaining from sex, for example, compared with 1994 (11% versus just under 7%). In addition, more people said they were remaining with one partner (45% of men and 32% of women in 2000, compared to 37% and 20%, respectively, in 1994).

On the other hand, there is evidence of behaviour change that could signal greater risk of HIV transmission. For example, young Haitians are becoming sexually active at earlier ages. Median ages at first sex was 19.8 years for men and 18.3 years for women in 1994; six years later, the ages were 18.2 years for men and 17.5 years for women (Gaillard et al., 2004b). Correspondingly, the percentage of 15–19 year-olds who say they have never had sex decreased to 66% for women and 48% for men in that age group (compared to 71% and 53%, respectively, in 1994) (Gaillard et al., 2004b). Condom use among young Haitians (15–24 years) has also decreased. Just 28% of young Haitian women (15–24 years) in 2003 said they had used a condom the last time they had sex, as did 37% of men of the same age. It might be that older Haitians have been taking greater precautions to avoid HIV infection. The declines in HIV prevalence appear to be more pronounced among women older than 24 years of age.

However, AIDS mortality very likely accounts for a substantial share of the observed drop in infection levels. If AIDS deaths are helping drive HIV prevalence lower, the comparatively slight decline in infections levels seen in *rural* areas could imply that HIV incidence there is still marked. In that case, considerable numbers of people would be acquiring HIV while AIDS also kills large numbers of people—causing the overall number of people living with HIV to stay stable or decline slightly. In addition, the sociopolitical upheavals of recent years could be generating conditions (such as displacement, social instability and livelihood insecurity) that allow for more rapid spread of HIV. There is no guarantee, therefore, that the decrease in HIV prevalence observed in urban areas will continue or extend into rural areas without strong, sustained HIV prevention programmes. Such efforts should take account of the fact that HIV prevalence among pregnant women varies considerably (ranging from 1.8% to almost 7% in different parts) (Ministère de la santé publique et de la population Haïti et al., 2004).

(from 6.2% to 3.1%). The trend has been most pronounced in urban areas (where HIV prevalence fell from 9.4% in 1993 to 3.7% in 2003-2004), and especially among 15–24 year-olds—which suggests that a significant slowing down of new HIV infections could be occurring in the country's cities (Gaillard et al., 2004b). The decline appears to be associated with some behavioural change. AIDS mortality is almost certainly an important contributing factor (see box). In rural areas, the decline has been much more modest. Since Haiti still has the largest number of people living with

HIV in the Caribbean (an estimated 173 000 in 2004) (Gaillard et al., 2004a), intensification of HIV prevention is imperative in the country.

Sharing the island of Hispaniola with Haiti is the **Dominican Republic**, which appears also to be seeing some rewards as a result of its AIDS response. HIV infections levels in pregnant women have been declining since the late 1990s, with overall HIV prevalence in pregnant women roughly stable at the 1.4% measured in the 2004 round of sentinel surveillance. However, in some sites (such as San Juan de la Maguana)

HIV prevalence at antenatal clinics was 2.7% (Secretaría de Estado de Salud Pública y Asistencia Social de República Dominicana, 2005b). In the capital Santo Domingo, HIV prevalence among pregnant women was 1.3% at the main antenatal clinic in 2004, a significant change from the over 2% found in 1995 (Secretaría de Estado de Salud Pública y Asistencia Social de República Dominicana, 2005b; UNAIDS/WHO, 2004). However, HIV infection levels among pregnant women are considerably higher in other parts of the country: 2.3% in San Juan, in the west, and 2.5% in La Romana, in the east, for example. And in some bateyes (the impoverished communities of mainly Haitian workers that service sugar cane mills), infection levels of 5.5% in men and 4.7% among women have been found.

Low HIV infection levels of 3–4% found among sex workers in Santo Domingo probably reflect efforts to encourage consistent condom use and other safer behaviours in their ranks. When surveyed in the capital, 87% of sex workers reported using a condom the last time they had sold sex, and 76% said they always used a condom during paid sex (Ministerio de Salud de República Dominicana, 2005a). As in other Caribbean countries, sex between men seems to be playing a significant, though inadequately recognized role in the Dominican Republic's epidemic. A recent study in three cities (Puerto Plata, Samana and Santo Domingo) among men who have sex with men found 11% of them were living with HIV (Toro-Alfonso and Varas-Díaz, 2004). In another study, about one third of men who have sex with men said they had also slept with women in the previous six months—and only half of them said they had used a condom during that period.

HIV-infection levels have declined in the Bahamas, indicating that improved HIV prevention efforts could be responsible for part of that trend. Newly reported HIV infections decreased from 409 in 2000 to 275 in 2003 (a 32% decline), while HIV prevalence measured in pregnant women followed a similar path, (dropping from 4.8% in 1993 to 3% in 2002); HIV levels among patients at sexually transmitted infection clinics also fell (Caribbean Technical Expert Group, 2004; Department of

Public Health The Bahamas, 2004). Enhanced clinical management and treatment of AIDS at the community level has drastically reduced mother-to-child transmission of HIV. It has likely also contributed to the declining number of annual deaths attributable to AIDS in the country (from 272 in 2000 to 185 in 2003) (Caribbean Epidemiology Centre, PAHO, WHO, 2003). It is estimated that at least 30% of persons with HIV were receiving appropriate clinical management at community clinics in 2003.

Stepped-up efforts to confront the smaller epidemic in **Barbados** also appear to be paying dividends. New HIV diagnoses among pregnant women decreased by half between 1999 and 2003 (with prevalence slipping from 0.7% to 0.3%) (Kumar and Singh, 2004), while the expansion of voluntary counselling and testing services, and provision of antiretroviral prevention regimens has reduced mother-to-child transmission of HIV (St John et al., 2003). Wider access to antiretroviral treatment cut AIDS deaths by half in 1998–2003, a trend also witnessed in **Bermuda** in 2000–2002 (Caribbean Epidemiology Centre, 2004; Caribbean Epidemiology Centre, PAHO, WHO, 2003).

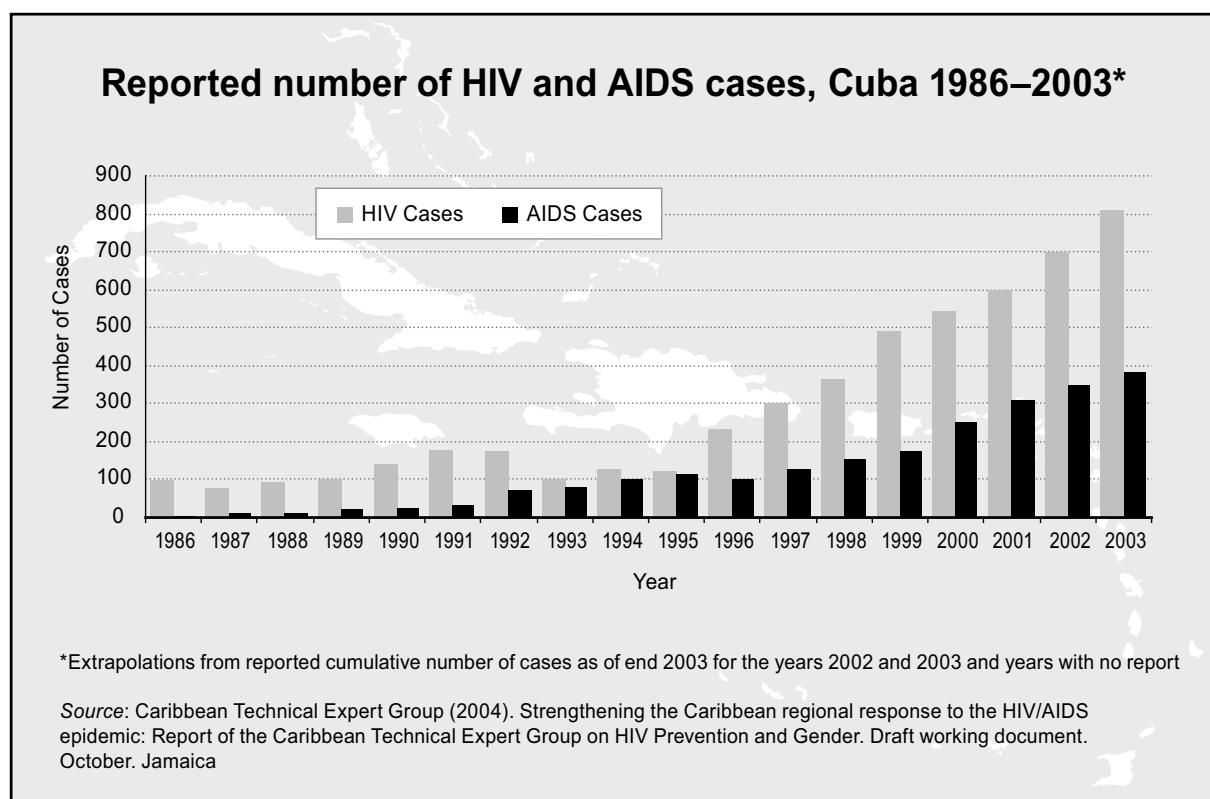
In **Jamaica**, most HIV infections are occurring in urban areas, with the parishes of Kingston, St. Andrew, and St. James worst-affected. HIV prevalence among pregnant women has remained at 1–2% since the mid-1990s, although recent HIV surveillance at antenatal clinics suggests that prevalence might be declining slightly in parts of the country (the parishes of St. Ann and St. James, for example) (Ministry of Health Jamaica, 2004). There are some signs that a large proportion of Jamaicans take precautions to protect themselves against HIV infection. In surveys over the past decade, about three quarters of men have said they used a condom the last time they had sex with a casual partner. The percentage of women reporting the same behaviour almost doubled from 1992–2000 (Caribbean Technical Expert Group, 2004). As in Jamaica, unprotected heterosexual intercourse is the driving factor in the epidemic in **Trinidad and Tobago**, where estimated national adult HIV prevalence edged past 3% in 2003. A recently-published study among women giving

birth in Tobago found 2.6% of them were HIV-positive; among those younger than 25 years, prevalence was 3.8%. A very large percentage of women were also infected with HSV2, a sexually transmitted infection which, as studies in Africa have shown, greatly enhances the risk of HIV transmission (Duke et al., 2004; Weis et al., 2001).

Guyana and **Suriname** are experiencing serious epidemics. National HIV prevalence in **Guyana** was estimated at 2.5% at the end of 2003, and AIDS has become the leading cause of death for people aged 25–44 years (UNAIDS/WHO, 2004). The steep rise in officially-reported HIV cases reported over the past decade suggests a worsening epidemic, with high HIV prevalence having been recorded among men and women attending sexually transmitted infection clinics (15% for men and 12% for women in 2002) (Caribbean Technical Expert Group, 2004). However, HIV information is limited outside the country's cities, making it difficult to gauge the actual extent of the epidemic.

Just under 2% of adult Surinamese were living with HIV at the end of 2003. New registered HIV cases have increased threefold since the mid-1990s (104 in 1996 to 371 in 2003), but much of that trend is probably due to increased testing. High levels of HIV infection found in men who have sex with men (7% in a 2005 study) indicate that sex between men features in Suriname's epidemic; previous research indicated that about one third of men who have sex with men also had sexual relationships with women (CAREC/PAHO, 2005b; Del Prado et al., 1998). HIV knowledge appears to be high among men who have sex with men (about 80% of the men knew at least three ways of protecting themselves against infection). Although 70% of the men said they always used a condom during commercial sex, another study found that more than one in three male sex workers were HIV-positive (CAREC/PAHO, 2005a and 2005b). Given that among female sex workers HIV prevalence is also very high (21%, according to a 2005 study), commercial sex work likely plays a central role in Suriname's epidemic (CAREC/PAHO, 2005b).

Figure 18



Cuba's epidemic remains by far the smallest in the Caribbean, with adult HIV prevalence estimated to be less than 0.1% (Caribbean Technical Expert Group, 2004). However, new HIV infections are on the rise, and Cuba's preventive measures appear not to be keeping pace with conditions that favour HIV spread, including widening income inequalities and a growing sex industry (Camara et al., 2003; Inciardi et al., 2005). At the same time, Cuba's prevention of mother-to-child transmission programme remains highly effective. All pregnant women are tested for HIV, and those testing positive receive antiretroviral drugs. As a result of this policy and overall low infection rates, fewer than 20 HIV-infected babies had been born by 2004 (Susman, 2003; Caribbean Technical Expert Group (2004). In addition, universal, free access to antiretroviral therapy has kept the number of AIDS cases and deaths low.

Improved HIV and behavioural surveillance is essential if effective prevention strategies are

to be achieved and sustained in the Caribbean. Lacking in particular is reliable, up-to-date information about behaviour patterns and trends among at-risk sections of the population such as sex workers and men who have sex with men, and the ways in which the behaviours might feature in HIV transmission. The continuing shortage of good quality HIV surveillance data stands in the way of potentially effective HIV prevention programmes and will hinder the effectiveness of the antiretroviral treatment roll-outs, which remain highly uneven in this region. While universal treatment access is being achieved in Cuba, and coverage is relatively high in the **Bahamas** and **Barbados**, access to treatment is poor in three of the worst-affected countries in the Caribbean. About one third of people in need of antiretroviral treatment were receiving it in **Trinidad and Tobago** in September 2005, as were a mere 12% in **Haiti** and 10% in the **Dominican Republic** (PAHO, 2005).

LATIN AMERICA

HIV and AIDS statistics and features, in 2003 and 2005

	Adults and children living with HIV	Number of women living with HIV	Adults and children newly infected with HIV	Adult prevalence (%)[*]	Adult and child deaths due to AIDS
2005	1.8 million [1.4–2.4 million]	580 000 [420 000–770 000]	200 000 [130 000–360 000]	0.6 [0.5–0.8]	66 000 [52 000–86 000]
2003	1.6 million [1.2–2.1 million]	510 000 [370 000–680 000]	170 000 [120 000–310 000]	0.6 [0.4–0.8]	59 000 [46 000–77 000]

The number of people living with HIV in Latin America has risen to an estimated 1.8 million [1.4 million–2.4 million]. In 2005, approximately 66 000 [52 000–86 000] people died of AIDS, and 200 000 were newly-infected [130 000–360 000]. Among young people 15–24 years of age, an estimated 0.4% [0.3–0.8%] of women and 0.6% [0.4–1.1%] of men were living with HIV in 2005.

Primarily due to their large populations, the South American countries of **Argentina**, **Brazil** and **Colombia** are home to the biggest epidemics in

between men, and men and women) and injecting drug use, with the role of sex between men in HIV transmission a more prominent factor than is commonly acknowledged. In nearly all the Latin American countries, the highest levels of HIV infection are being found among men who have sex with men. The second-highest HIV levels are found among female sex workers, according to one recent collection of cross-sectional studies. HIV prevalence among men who have sex with men ranged between 2% and 28% in different areas, while prevalence among female sex workers ranged between 0% and 6.3% (Montano

The region's epidemics are being fuelled by varying combinations of unsafe sex (both between men, and men and women) and injecting drug use.

this region. Brazil alone accounts for more than one third of the estimated 1.8 million people living with HIV in Latin America. The highest HIV prevalence, however, is found in the smaller countries of **Belize**, **Guatemala** and **Honduras**—where approximately 1% of adults or more were infected with HIV at the end of 2003.

The region's epidemics are being fuelled by varying combinations of unsafe sex (both

et al., 2005). Sex between men has been estimated to account for 25–35% of reported AIDS cases in countries such as Argentina, Bolivia, Brazil, Guatemala and Peru.

By far the largest and most populous country in the region, **Brazil** harbours a diverse epidemic which has penetrated all 26 states in the country. Although national HIV prevalence among pregnant women has remained below 1%, a growing share

of new HIV infections are among women, and those living in deprived circumstances appear to be disproportionately at risk of infection (Marins et al., 2003). In some states, high prevalence has been found among pregnant women, for example up to 3–6% in sites in the southern Rio Grande do Sul state (UNAIDS/WHO, 2003).

There is some evidence that sexual behaviour among young Brazilians might be changing, with a trend toward earlier sexual activity. According to a 2004 survey, more young people are having sex at earlier ages and with more partners. More than one third (36%) of 15–24 year-olds had had sex before their 15th birthday (compared with 21% of those 25–39 years of age), 20% said they had had sex with more than ten partners thus far in their lives, and 7% had had sex with more than five partners in the previous year. Yet knowledge of HIV was poor. Only 62% of 15–24 year-olds knew how HIV was transmitted. Less-educated youth knew the least about the epidemic. On the other hand, the percentage of young people who reported using condoms the first time they had sex increased from less than 10% in 1986 to more than 60% in 2003 (Ministerio da Saude do Brasil, 2005). The latter trend may be tempering the effect on HIV transmission of risky behaviour reported earlier. HIV prevalence among military conscripts has remained consistently low (0.08% in 2002, the same as in 1998) (Ministerio da Saude do Brasil, 2005).

Meanwhile, in Brazil's cities, the contribution of injecting drug use to HIV transmission appears to have declined. Some of this success could be attributed to harm reduction programmes (see *AIDS epidemic update 2004* for more details). Official estimates derived from the national HIV surveillance system show that three quarters of the estimated 200 000 drug injectors in Brazil now do not use non-sterile syringes. In some areas, though, drug injectors still comprise at least half of all AIDS cases. Available data indicate relatively low levels of HIV infection among female sex workers, with HIV prevalence of 6.1% among the almost 3000 sex workers who participated in one major survey (Chequer, 2005).

In **Argentina**, HIV initially circulated mainly among male injecting drug users and their sexual partners, as well as among men who have sex with

men. This gradually changed as more HIV-infected men passed the virus on to wives and girlfriends. Most new infections have been occurring during unprotected heterosexual intercourse, with increasing numbers of women acquiring HIV. The male-to-female ratio among reported AIDS cases shrank from 15:1 in 1988 to 3:1 in 2004. Among new infections, that ratio was 1.5:1 in 2004, with new infections disproportionately occurring in poor urban areas (Ministerio de Salud de Argentina, 2004). Meanwhile, injecting drug use and sex between men continue to provide impetus to the spread of HIV, especially in the urban areas of Buenos Aires, Cordoba and Santa Fe provinces, where an estimated 80% of AIDS cases have occurred. When tested in the city of Buenos Aires, some 44% of drug injectors were HIV-positive, for example, while HIV prevalence of 7–15% has been found among men who have sex with men in various studies (Weissenbacher et al., 2003; Pando et al., 2003; Segura et al., 2005; Montano et al., 2005; Bautista et al., 2004).

In **Chile** and **Uruguay**, most HIV infections are concentrated in urban areas (National AIDS Commission Chile, 2003; National AIDS Program Uruguay, 2005). About three quarters of Uruguay's reported HIV cases have been in and around the capital, Montevideo, while Antofagasta, Santiago, Tarapaca and Valparaiso are the most affected parts of Chile. In contrast, HIV has penetrated rural parts of **Paraguay**, especially along the borders with Argentina and Brazil (National AIDS Program Paraguay, 2005). Injecting drug use and sex between men appear to be the most prominent factors in Uruguay's epidemic, where about one quarter of reported HIV cases have been in drug injectors (many of them younger than 25 years) and one third of HIV diagnoses have been attributed to sex between men (Osimani, 2003).

In the Andean area, unprotected commercial sex and sex between men serve as HIV's main pathways. As more men pass the virus on to their wives and girlfriends, however, HIV transmission routes are becoming more diverse. **Bolivia**'s epidemic remains small (much of it concentrated in urban areas such as La Paz and Santa Cruz) and appears to be driven largely by commercial sex and sex between men (Ministry of Health Bolivia

and PAHO/WHO, 2003; Khalsa et al., 2003). While HIV prevalence among women attending antenatal clinics has remained under 1%, infection levels in groups of men who have sex with men have reached 15% in La Paz and almost 24% in Santa Cruz (Montano et al., 2005). The vulnerability of male and female street children to HIV infection in Bolivia has escaped notice until recently. A study in the city of Cochabamba

2005). It appears that a large number of women with HIV have been infected by their husbands or regular partners who had acquired the virus during sex with another man.

In **Colombia**, HIV initially affected mostly men, so much so that they comprise 83% of all AIDS cases reported to the national health authorities to date. As in several other countries in the region,

*It is vital that preventive activities, as well
as HIV diagnosis and treatment services, are expanded among men
who have sex with men.*

has shown that 3.5% of the surveyed street youths were living with HIV; most had been infected sexually (Lambert et al., 2005). Female sex workers, by and large, have managed to avoid infection: in Cochabamba, Oruro and Tarija, for instance, prevalence was 1% in 2002, while it was 0.5% in La Paz (where health authorities estimate 70% of sex workers use condoms regularly) (Carcamo, 2004). However, those infection levels were recorded among (mainly brothel-based) sex workers who regularly visit sexually transmitted infection clinics for check-ups. Patterns elsewhere in Latin America suggest that sex workers are at higher risk of infection. As of yet, though, there are few studies tracking the possible spread of HIV among sex workers—not only in Bolivia, but in Latin America generally.

While it is necessary to maintain prevention efforts among sex workers, it is vital that preventive activities, as well as HIV diagnosis and treatment services, are expanded among men who have sex with men, who continue to face social stigma and discrimination. Sex between men appears to be a prominent factor also in **Ecuador**'s growing epidemic, where new reports of HIV cases have almost doubled since 2001, reaching 573 in 2004 (Ministerio de Salud de Ecuador, 2005). More than two thirds of reported HIV cases have been in men, and HIV prevalence of 17% and 23% has been found in Quito Pichincha and Guayaquil Guayas, respectively, among men who have sex with men. Prevalence among female sex workers was low (under 2%) (Ministerio de Salud de Ecuador,

HIV prevalence recorded in groups of men who have sex with men (as high as 20% in Bogotá) has surpassed prevalence found among female sex workers in **Colombia** (0.8% in 2001-2002 in Bogotá, for instance) (Montano et al., 2005; Khalsa et al., 2003; Mejía et al., 2002). However, a significant proportion of men who have sex with men also maintain sexual relationships with women. As a result, the epidemic's pattern has been changing, with increasing numbers of women becoming infected—especially along the Caribbean coast and in the north-east of the country. Most will have acquired HIV from infected husbands or boyfriends who had had unsafe sex with men and/or women. Thus, of women testing HIV-positive at projects aimed at preventing the transmission of HIV from mother-to-child, 72% were in stable relationships and 90% described themselves as 'housewives' (García et al., 2005).

There are recent signs of significant HIV spread in Colombia: prevalence found among young people (aged 15–24 years) and pregnant women ranged from 1.2–1.3% in Santander and Valle, to 2.4% in Atlántico (Prieto et al., 2004). In addition to pervasive gender inequalities, it is possible that forced displacement caused by the country's long-running civil conflict could be increasing women's risks of acquiring HIV (García, 2005). A positive development has been the country's national initiative to reduce transmission of HIV from mothers to children, which ranks among the strongest components of its AIDS programme. According to one study, it has reduced the risk

of perinatal HIV transmission from 40% to under 4% (García R et al., 2005).

Nationally, HIV infection levels among pregnant women in **Peru** have remained low (0.2% in 2002, according to the latest available data) (Ministerio de Salud de Peru, 2004). However, much higher HIV prevalence has been recorded among men who have sex with men—6–12% in the cities of Arequipa, Iquitos, Pucallpa and Sullana, and as high as 23% in Lima in a 2002 study (Ministerio de Salud de Peru, 2005). In all but the first two cities, infection levels had risen since 2000. Since a very large proportion of men who have sex with men (more than three quarters, according to some urban studies) also have sex with women, the possibility of HIV transmission to their wives and girlfriends is high (Guanira et al., 2004). Commercial sex is another prominent factor. Almost half the men (44%) aged 18–29 years in 24 urban areas said they had bought sex, and condom use was generally erratic.

indicating a relatively mature epidemic, with HIV circulating in the wider population. Commercial sex and sex between men, however, remain major drivers of the epidemic. Among female sex workers in Tegucigalpa, median HIV prevalence of 8–9% was measured in 2001, while in San Pedro Sula prevalence of 13% has been found. Among men who have sex with men in major urban areas, 12% were found to be living with HIV in 2002 (UNAIDS/WHO, 2004; Secretaria de Salud de Honduras, 2003). Such findings, along with high rates of other sexually transmitted infections, suggest that conditions favour the epidemic's continued growth in Honduras.

Central America's other epidemics are also strongly related to commercial sex and sex between men. Although HIV infection levels among sex workers vary considerably, they are consistently higher among those who are street-based and who are therefore more difficult to reach with HIV prevention services. In San Salvador and Puerto

*Where antiretroviral treatment access has improved notably,
AIDS mortality appears to be reducing.*

HIV in **Central America** is spreading both amongst the most vulnerable groups and, in a number of countries, across the wider population. The virus is being transmitted primarily during unprotected sex (between men and women, and also between men). While comprehensive HIV surveillance information remains incomplete, the available data show epidemics that are concentrated mainly in and around major urban areas and transport routes, with some important exceptions.

HIV has acquired a varied but firm presence in **Honduras**, which has approximately one third of the people living with HIV in this subregion. With estimated national adult HIV prevalence of just under 2%, AIDS is the leading cause of death for Honduran women and is believed to be the second-biggest cause of hospitalization and death overall in the country (UNAIDS/WHO, 2004). As far back as 1999 already, median HIV infection levels among pregnant women ranged from 2.9% in urban areas to 3.6% in some rural areas—

de Acajutla (in **El Salvador**), for instance, 16% of street-based sex workers have been found to be HIV-positive (Ministerio de Salud Pública y Asistencia Social de El Salvador, 2003). Since condom use tends to be lower among regular sexual partners, the male clients of sex workers are likely to pass on the virus to their wives and girlfriends. The same applies to men who have sex with both men and women. For women, fidelity offers little protection against infection, as one study in Chinandega (**Nicaragua**) has illustrated. There, married women were twice as likely as sex workers to be living with HIV (UNAIDS/WHO, 2004).

Guatemala's epidemic rivals that of **Honduras** in size, but HIV data gathering has been too intermittent to enable a confident assessment of recent trends. Available information suggests uneven HIV spread, with the highlands possibly least-affected. Most HIV cases appear to be concentrated in urban areas and along the transport and commercial routes that cross the

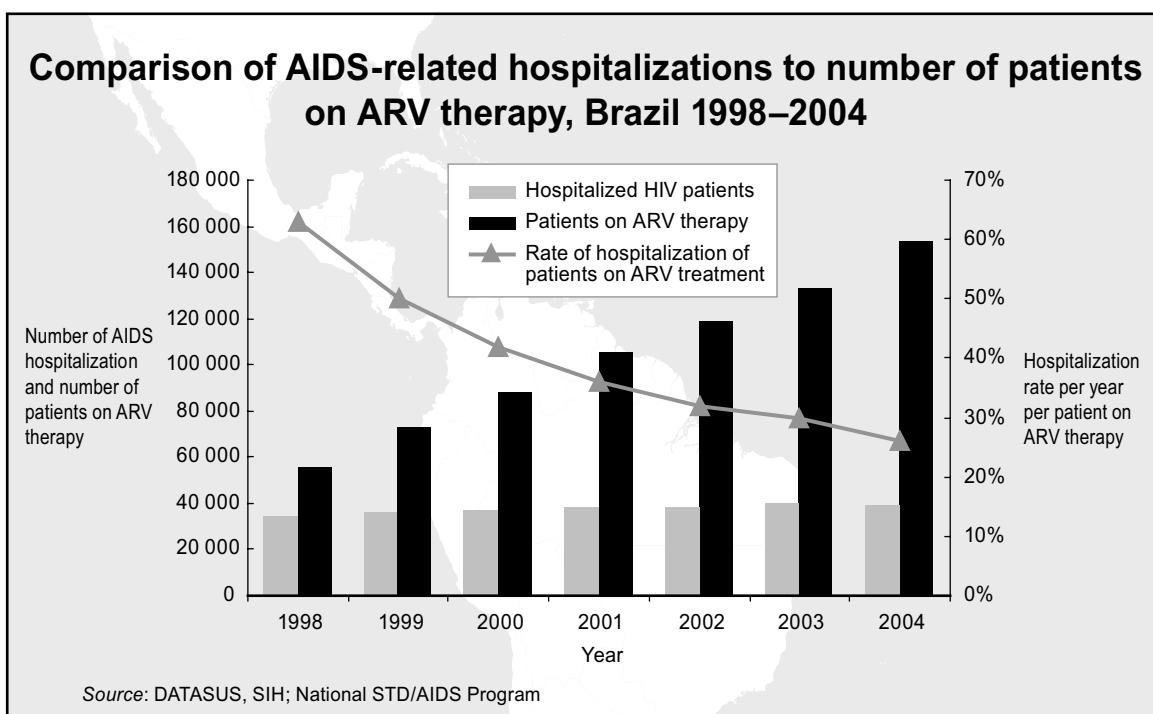


Figure 19

country. HIV surveillance in some sexually transmitted infection clinics has revealed no HIV cases; in others, prevalence as high as 9% has been found (in Izabal, for instance). Among pregnant women, HIV levels have varied from close to 0% to over 1% (in Retalhuleu and San Marcos) (UNAIDS/WHO, 2004; Ministerio de Salud Pública y Asistencia Social de Guatemala, 2003). Here, too, sex work seems to play a prominent role: HIV prevalence as high as 15% has been recorded among street-based female sex workers. However, sex between men could be a bigger factor than is commonly assumed (Ministerio de Salud Pública y Asistencia Social de Guatemala, 2003). HIV infection levels of almost 12% have been found in Guatemala City among men who have sex with men, one in five of whom also had regular sexual relations with women (UNAIDS/WHO, 2004).

Sex between men features also in the smaller epidemics of **El Salvador**, **Nicaragua** and **Panama**, where HIV prevalence of 18%, 9% and 11%, respectively, have been found among men who have sex with men. In **Costa Rica**, sex between men is clearly the driving factor in the country's epidemic; there, men who have sex

with men comprise more than two thirds of all reported AIDS cases (UNAIDS/WHO, 2004).

Adult national HIV prevalence in **Mexico** has remained well below 1%, but the epidemic shows varied patterns across this large country. Almost 90% of officially recorded AIDS cases have been attributed to unprotected sex, about half of them attributable to sex between men (CENSIDA, 2003). An estimated 160 000 adults were living with HIV at the end of 2003; two thirds of them are men who are believed to have been infected during sex with another man (UNAIDS, 2004; Magis-Rodríguez et al., 2002). That pattern possibly accounts for the increasing signs of heterosexual transmission of HIV that have been noted, as more women become infected during sex with (bisexual) male partners (Magis et al., 2000). The role of injecting drug use in Mexico's epidemic is difficult to determine, but an association with injecting drug use has been observed in cities along the border with the United States of America (Minichiello et al., 2002; Magis-Rodríguez et al., 1997).

The possible role of migration in Mexico's epidemic has been the subject of much speculation,

but confident conclusions cannot yet be drawn. One recent study has shown that male international migrants on average had almost twice as many sexual partners in the previous year, compared with their non-migrant counterparts. At the same time, condom use was found to be substantially more frequent among international migrants (Magis-Rodríguez et al., 2004). Nevertheless, the higher AIDS case load in some rural areas of Mexico hints at a possible link between HIV infection and migration to the United States of America (Magis-Rodríguez C et al., 2004).

Access to antiretroviral therapy in Latin America has expanded considerably, although **Brazil's** achievements on this front remain unique. Under Brazil's policy of providing antiretroviral drugs to all in need, people with advanced HIV infection are eligible for antiretroviral drugs via the country's national health system. The number

of Brazilians on antiretroviral therapy has continued to increase and reached approximately 170 000 in September 2005. Treatment adherence rate among patients on antiretroviral therapy has been estimated at 75%. Treatment coverage is high also in **Argentina, Chile, Cuba, Mexico, Uruguay and Venezuela** (PAHO, 2005), though the terms under which it is provided are not as favourable as those in Brazil. In **Costa Rica** and **Panama**, where antiretroviral treatment access has improved notably, AIDS mortality appears to be reducing. But elsewhere, especially in the poorer countries of Central America and the Andean region of South America, progress has been slower. Fewer than 1000 Ecuadoreans were receiving antiretroviral treatment in 2004 (Ministry of Health Ecuador, 2004), for example, while treatment roll-out efforts in El Salvador, **Guatemala, Honduras, Nicaragua** and **Paraguay** continue to lag (PAHO, 2005).

NORTH AMERICA, WESTERN AND CENTRAL EUROPE

HIV and AIDS statistics and features, in 2003 and 2005

	Adults and children living with HIV	Number of women living with HIV	Adults and children newly infected with HIV	Adult prevalence (%)*	Adult and child deaths due to AIDS
2005	1.9 million [1.3–2.6 million]	490 000 [340 000–670 000]	65 000 [35 000–140 000]	0.5 [0.3–0.7]	30 000 [19 000–42 000]
2003	1.8 million [1.3–2.5 million]	450 000 [320 000–620 000]	63 000 [34 000–140 000]	0.4 [0.3–0.6]	30 000 [19 000–42 000]

The number of people living with HIV in North America, Western and Central Europe rose to 1.9 million [1.3–2.6 million] in 2005, with approximately 65 000 people having acquired HIV in the past year. Wide availability of antiretroviral therapy has helped keep AIDS deaths comparatively low, at about 30 000.

Overall, prevention efforts are lagging behind changing epidemics in several countries where the main patterns of HIV transmission have been

were an estimated 1.04 million–1.2 million HIV cases in the USA at the end of 2003. The increase reflects the fact that people with HIV are living longer due to antiretroviral treatment, as well as the failure to adapt and sustain the prevention successes achieved during the epidemic's first 10–15 years. Approximately 32 000 new HIV cases were recorded in 2003 in the 33 states with confidential, name-based reporting, a number that has stayed relatively stable since the late 1990s. (Those 33 reporting states do not include

Overall, prevention efforts are lagging behind changing epidemics in several countries where the main patterns of HIV transmission have been shifting.

shifting. Although sex between men and, in a minority of countries, injecting drug use remain important routes for HIV transmission, increasing numbers of people are being infected through unprotected heterosexual intercourse.

The estimated number of people living with HIV in the **United States of America** (USA) at the end of 2003 exceeded one million for the first time, up from the corresponding figure of 850 000–950 000 for 2002 (US Centers for Disease Control and Prevention, 2004a). There

California and New York, which have the highest number of persons living with HIV.)

The majority of people living with HIV in the USA are men who have sex with men, and sex between men remains the dominant mode of transmission, accounting for 63% of newly-diagnosed HIV infections in 2003, according to the latest available data (US Centers for Disease Control and Prevention, 2004a). Reports of increased risky behaviour have increased in recent years, some of it apparently associated

with recreational drug use. A new five-city study, however, has revealed a variety of trends (the cities were Baltimore, Los Angeles, Miami, New York City and San Francisco).

HIV *incidence* among men who have sex with men in San Francisco, for example, now appears to be lower than previously estimated (1.2% in the 2004–2005 study compared with earlier, official estimates of 2.2%). But in Baltimore, HIV *incidence* of 8% has been found in men who have sex with men. Forty percent of the men participating in the study tested HIV-positive, and 62% of them had been unaware of their infection (US Centers for Disease Control and Prevention, 2005). Overall, one quarter of people living with HIV in the USA are believed to be unaware that they are infected. This lack of knowledge about

As in other countries, the epidemic in the USA often exploits social fault-lines. A recent study in North Carolina, for example, found that HIV-positive women were considerably more likely to be unemployed, requiring public assistance and exchanging sex for money and gifts (Leone et al., 2005).

One of the striking facets of the epidemic in the United States is the concentration of HIV infections among African Americans. Despite constituting only 12.5% of the country's population, African Americans accounted for 48% of new HIV cases in 2003 (US Centers for Disease Control and Prevention, 2004a). While men comprise the majority of African Americans living with HIV, African American women, too, are disproportionately affected. By some

*As in other countries,
the epidemic in the USA often exploits social fault-lines.*

one's HIV status is particularly evident among African American men who have sex with men: the five-city study found that about two thirds of HIV-positive African Americans who have sex with other men had been unaware of their serostatus.

Injecting drug use remains a prominent channel for HIV transmission, also among women. About 20% of Americans living with HIV in 2003 were infected in this manner, as were about 25% of women who were newly diagnosed with HIV in 2003. Among American Indian and Alaskan Native women, that proportion was 33% in 2003 (US Centers for Disease Control and Prevention, 2004a).

However, for women living with HIV, unsafe heterosexual intercourse is the main mode of transmission—an estimated 73% acquired the virus in that manner in 2003. Having increased in the late 1990s, the proportion of women among new annual infections has stabilized, at approximately 25% (US Centers for Disease Control and Prevention, 2004a). For many women with HIV, the main risk factor for acquiring the virus remains the often-undisclosed risk behaviour of male partners, such as injecting drug use and sex with other men (McMahon et al., 2004; Valleroy et al., 2004; Montgomery et al., 2003).

estimates, African American women are more than a dozen times as likely to be infected with HIV than are their white counterparts. Among young men (aged 23–29 years) who have sex with men, HIV prevalence among African Americans (at 32%) is more than four times that among white counterparts (7%) and more than twice that among Latino counterparts (14%). One half of the people who died of AIDS in 2003 were African Americans (US Centers for Disease Control and Prevention, 2004a).

The estimated annual number of new HIV cases has remained roughly stable at 40 000 since 2000 in the USA (US Centers for Disease Control and Prevention, 2005). However, more efforts are needed to reach the target set by the United States Government four years ago of halving the rate of new infections. The steep drop in AIDS-related deaths after the introduction of antiretroviral therapy in the USA began levelling off in the late 1990s and has averaged at 17 500–18 500 annually since 2000 (see Figure 20) (US Centers for Disease Control and Prevention, 2004a). Although AIDS therapy has saved nearly two million years of life, according to a recent calculation, African-Americans appear not to be benefiting equally from such life-prolonging treatment

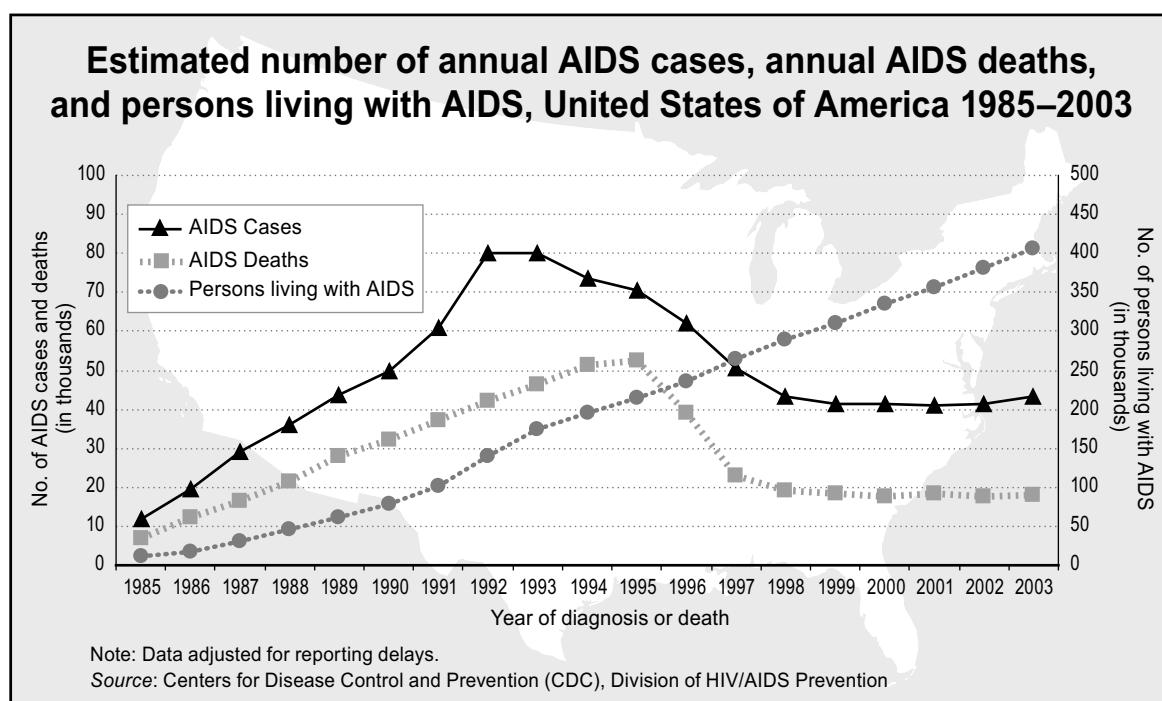


Figure 20

(Walensky et al., 2005). African Americans, for example, are half as likely to be receiving antiretroviral treatment, compared with other population groups, according to another recent study (McQuillan et al., 2004). In 2003, almost twice as many African Americans died of AIDS as white Americans (US Centers for Disease Control and Prevention, 2004a). AIDS has become one of the top three causes of death for African American men aged 25–54, and for African American women aged 25–34 years it is the number one cause of death (US Centers for Disease Control and Prevention, 2004b).

heterogeneity and maturity of the country's epidemic. Among new diagnoses due to heterosexual transmission, one quarter have been among persons from high-prevalence countries in sub-Saharan Africa and the Caribbean (Public Health Canada, 2003). At the same time, injecting drug use remains a major cause of HIV infections among women, and accounted for 32% of new diagnoses among them in 2004. Overall, sex between men remains the single-most important driver of Canada's epidemic, and was responsible for 45% of new HIV diagnoses last year. Although the annual number of AIDS diagnoses has dropped

More than half a million people are living with HIV in Western Europe.

In Canada, where just under 58 000 HIV diagnoses had been reported by the end of 2004, the epidemic is also changing. The number of reported new annual HIV infections has risen by 20% in the past five years (from 2111 in 2000 to 2529 in 2004); women now comprise over one quarter of new diagnoses (compared to less than 10% in 1995). Among women, those aged 15–29 years appear to be most at risk; women in that age group represented 42% of new diagnoses in 2004 (compared with 13% in 1985–1994). These trends correspond to the growing proportion (30% in 2004) of HIV diagnoses attributable to heterosexual transmission—evidence of the

sharply (from 1776 in 1994 to 237 in 2004), a growing share of those diagnoses are among Black and Aboriginal Canadians. The proportion of diagnoses among Black Canadians increased from 8.3% to 15.5% and among Aboriginal Canadians from 2.3% to 14.8% in 1994–2004 (Public Health Agency of Canada, 2005).

More than half a million people are living with HIV in Western Europe, and that number continues to grow with signs in several countries of a resurgence of risky sexual behaviour. The biggest change in Western Europe has been the emergence of heterosexual contact as the dominant

cause of new HIV infections in several countries. Of the more than 20 000 newly diagnosed HIV infections in 2004 (excluding Italy, Norway and Spain, where data were not available), more than one third were in women. A substantial proportion of new diagnoses are in people originating from countries with serious epidemics, principally countries in sub-Saharan Africa (Hammers and Downs, 2004).

There are several reasons for the doubling of new diagnoses of HIV in the **United Kingdom** (UK) since 2000 (from 3499 in that year to 7258 in 2004). Increased testing is one of them: clinician-reporting for HIV diagnoses was introduced in 2000 and has boosted the number of officially-recorded infections (EuroHIV, 2005). Most of the increase, however, is due to a steep rise in the number of heterosexually-acquired HIV infections, the bulk of which (approximately 80%) were contracted in high-prevalence countries. Most of the approximately 4000 heterosexually-acquired HIV infections diagnosed in 2004 had occurred in sub-Saharan Africa (EuroHIV, 2005; Dougan et al., 2005). Women are especially affected. Outside London, for example, prevalence of previously undiagnosed HIV infections among women was 11% at genitourinary medicine clinics in 2003 (UK Collaborative Group for HIV and STI Surveillance, 2004). These patterns of newly-diagnosed HIV infections constitute a major challenge.

At the same time, HIV diagnoses among heterosexual persons who acquired the virus in the UK doubled between 1999 and 2003 (from 158 to 341). Diagnoses of other sexually transmitted infections have also been rising. In 2003, syphilis diagnoses in England, Wales and Northern Ireland were 28% higher for men and 32% higher for women, compared with 2002 (UK Collaborative Group for HIV and STI Surveillance, 2004; Dougan et al., 2005).

Once the primary mode of transmission, sex between men still accounts for roughly one quarter of new HIV diagnoses in the UK (1900 in 2004). A 1998–2004 study has found that the proportion of men who had unsafe sex with a casual male partner in London rose sharply in 1998–2001 (6.7% to 15.2%) (Elford et al., 2005a). Another London study has found rising HIV incidence among older men who have

sex with men, but not among their younger counterparts (Elford et al., 2005b). In a recent community survey in Brighton, London and Manchester, 9–14% of men who have sex with men were found to be living with HIV, and at least one third of those who tested HIV-positive had been unaware of their serostatus (Dodds et al., 2005). Prevention activities aimed at men who have sex with men need to consider these findings. Specifically they would need to reflect the diverse risk profiles of their target groups, including HIV status, socioeconomic status and sociocultural identities (Elford et al. 2004). In addition, initiatives to diagnose and treat a greater proportion of infected men are needed, given the large percentage (over 20%, according to one recent study) of HIV-infected men who have sex with men and who are unaware of their serostatus (Murphy et al., 2004).

Since 2002, the overall number of annual new HIV diagnoses attributed to sex between men in Western Europe has declined slightly (from 5453 to 5075 in 2004). However, in **Belgium, Denmark, Portugal and Switzerland** there has been a slight, and in **Germany** a significant, rise (EuroHIV, 2005). In **Germany**, new HIV diagnoses in men who have sex with men have almost doubled from 2001 to 2004 (from 530 to 982) and is the main cause of the steady increase overall in new HIV diagnoses, which totalled 2058 in 2004 (44% more than the 1425 cases diagnosed in 2001). This trend almost certainly reflects an actual increase in new infections, since uptake of testing has levelled out after increasing in the late 1990s when antiretroviral testing became widely available. Sex between men now accounts for a larger share of new annual HIV diagnoses than ever before in Germany—49%, compared with 37% in 2001 (Robert Koch Institut, 2005; EuroHIV, 2005).

Similar, though more localized, trends are visible elsewhere, with the continued epidemics of sexually transmitted infections in several large Western Europe cities reflecting a revival of risky sexual behaviour. For example, a longitudinal study at a sexually transmitted infection clinic in Rome, **Italy**, found a dramatic rise in new HIV infections. Cumulative incidence in 2000–2003 was twice as high as for 1984–1995 and much higher than for 1996–1999 (Giuliani et al., 2005). In Barcelona,

Spain, a resurgence of syphilis and other sexually transmitted infections (STI) has been attributed to increasing risk behaviour in men who have sex with men. One outpatient sexually transmitted infection clinic recorded a fivefold increase in the number of infectious syphilis diagnoses in 2002–2003, compared with 1993–1997 (Vall Mayans et al., 2004). Sex between men remains an important factor in the epidemics in **Denmark**, **France** and the **Netherlands**. In France, in 2003 and 2004, about 20% of new HIV diagnoses were in men who have sex with men, and 58% of those were recent infections (Lot et al., 2004; EuroHIV, 2005). In the Netherlands, unprotected sex between men accounted for more than 40% of newly-diagnosed HIV infections in 2003 and in 2004. Surveillance data point to a revival of unprotected intercourse since 2000. Moreover, one fifth of diagnoses of gonorrhoea, chlamydial infection and syphilis in men who have sex with men in 2003 were in men who were already HIV-infected (Van de Laar and Op de Coul, 2004; EuroHIV, 2005). The urgent need to enhance safer sex programmes for men who have sex with men remains unmet in several countries.

HIV diagnoses among drug injectors dropped steeply in the 1990s in **Spain** after methadone treatment and needle-exchange projects had been introduced. However, high HIV prevalence was found among injecting drug users in Catalonia in 2001, and the practice remains especially prevalent in the north-east of the country and on the Balearic Islands (De la Fuente, 2003). New HIV cases among drug injectors have also dropped sharply in **Portugal** (1000 in 2004, compared with 2400 in 2000), and they comprised just over one third of new HIV diagnoses in 2004 (compared with almost one half as recently as 2002) (EuroHIV, 2005). In addition to sustaining the successes achieved with programmes targeting injecting drug users, the challenge in countries where drug injecting is a significant part of their epidemics is to limit HIV transmission from infected injectors to their sexual partners (EuroHIV, 2005).

As in the **United Kingdom**, the most prominent recent trends in the rest of Western Europe are the steadily growing proportion of newly diagnosed HIV infections that are due to unsafe heterosexual intercourse, and the increasing proportion of women among new HIV cases. In **Belgium**,

Denmark, **France**, **Germany** and **Sweden**, at least one third of HIV infections attributable to heterosexual contact were probably acquired abroad, mostly in sub-Saharan Africa. Most HIV-infected migrants are unaware of their serostatus, and many of them are women. For example, among HIV diagnoses attributed to heterosexual contact in **France** during 2003, 69% were migrants, almost two thirds (65%) of whom were women (Lot et al., 2004). In the 18 western European countries with HIV data for 2004, women comprised 35% of all new diagnoses, up from 29% in 2000 (EuroHIV, 2005). Prevention, treatment and care strategies in Western Europe have to be adapted in order to reach migrant populations and women more effectively.

In central Europe, the epidemics have remained contained and small, with **Poland** and **Turkey** accounting for more than one half of annual new HIV diagnoses. In Poland, new infections have been increasing gradually each year since 2001, reaching 656 in 2004 (EuroHIV, 2005). Long the dominant factor in Poland's epidemic, injecting drug use now accounts for under one third of new infections and has been overtaken by unprotected sex—heterosexual and between men—as the main route of HIV transmission. Women now comprise more than 20% of people living with HIV in Poland (National AIDS Centre, 2005). Overall in central Europe, about half the cases in which a mode of transmission was identified in 2004 were due to unprotected heterosexual intercourse. Only in a handful of countries—including the **Czech Republic**, **Hungary**, **Slovenia**, and the **Slovak Republic**—sex between men appears to be the main mode of HIV transmission.

Western Europe and North America remain the only regions in the world where most people in need of antiretroviral treatment are able to receive it. As a result, the number of AIDS deaths plummeted in the late 1990s. In Western Europe, that trend has persisted, with deaths among AIDS cases decreasing steeply from 3905 in 2000 to 2252 in 2004—a 42% drop (EuroHIV, 2005). (In contrast, in Eastern Europe, where antiretroviral treatment coverage is limited, the number of AIDS deaths has tripled since 2000; EuroHIV, 2005.)

The main challenge in this region is to intensify prevention efforts and adapt them to the changing patterns of the epidemic.

MIDDLE EAST AND NORTH AFRICA

HIV and AIDS statistics and features, in 2003 and 2005

	Adults and children living with HIV	Number of women living with HIV	Adults and children newly infected with HIV	Adult prevalence (%)[*]	Adult and child deaths due to AIDS
2005	510 000 [230 000–1.4 million]	220 000 [83 000–660 000]	67 000 [35 000–200 000]	0.2 [0.1–0.7]	58 000 [25 000–145 000]
2003	500 000 [200 000–1.4 million]	230 000 [78 000–700 000]	62 000 [31 000–200 000]	0.2 [0.1–0.7]	55 000 [22 000–140 000]

The advance of AIDS in the Middle East and North Africa has continued with latest estimates showing that 67 000 [35 000–200 000] people became infected with HIV in 2005. Approximately 510 000 [230 000–1.4 million] people are living with HIV in this region. An estimated 58 000 [25 000–145 000] adults and children in 2005 died of AIDS-related conditions.

Although HIV surveillance remains weak in this region, more comprehensive information is available in some countries (including Algeria, Libya, Morocco, Somalia, and Sudan). Available evidence reveals trends of increasing HIV infections (especially in younger age groups) in such countries as **Algeria, Libya, Morocco and Somalia**. The main mode of HIV transmission in this region is unprotected sexual contact, although injecting drug use is becoming an increasingly important factor (and is the predominant mode of infection in at least two countries, Iran and Libya). Infections as a result of contaminated blood products, blood transfusions or a lack of infection control measures in health care settings are generally on the decline, but remain problems in some countries. The percentage of total reported AIDS cases attributed to contaminated blood decreased from 12% in 1993 to 0.4% in 2003 (WHO/EMRO, 2005).

Except for **Sudan**, national HIV prevalence levels are low in all countries of this region. However, most of the epidemics are concentrated geographically and among particular at-risk populations, including sex workers and their clients, drug injectors, and men who have sex with men.

By far the worst-affected country in this region is **Sudan**, where the highest infection levels found in the south. There are recent signs that HIV may be acquiring a stronger presence in the north. Among the minority of women agreeing to be tested for HIV in Khartoum as part of a pilot project to prevent the transmission of the virus from mother to child, just under 1% (0.8%) tested positive. Among women attending sexually transmitted infection clinics in the capital, over 2% tested positive in 2004, while HIV prevalence of 1% has been found also among university students and internally displaced persons in states in both the north and south of the country (Ministry of Health Sudan, 2005; Sudan National AIDS Control Program, 2004c and 2004d). In a country with a long history of civil conflict and forced displacement, internally displaced persons sometimes face higher rates of HIV infection. For instance, among displaced pregnant women seeking antenatal care in Khartoum in 2004,

HIV prevalence of 1.6% was found, compared to under 0.3% for other pregnant women (Ministry of Health Sudan, 2005).

While Sudan's prevention efforts have been intensified in recent years, only three quarters of pregnant women have ever heard of AIDS, according to a recent behavioural study, and one fifth of the surveyed women believed they could acquire HIV by sharing a meal with an HIV-positive person. Only 5% knew that condom use could prevent HIV infection, and more than two thirds of the women had never seen or heard of a condom. (Sudan National AIDS Control Program, 2004a). Even among people at special risk of infection (such as sex workers), HIV knowledge is poor and preventive behaviour is rare. When surveyed, more than half (55%) of sex workers said they had never seen or heard of a condom and fewer than 20% (17%) knew condoms could prevent HIV transmission. HIV prevalence among the women was 4.4% (Sudan National AIDS Control Program, 2004b). Similar gaps in HIV knowledge and behaviour have been found among internally displaced people (Sudan National AIDS Control Program, 2004c).

HIV surveillance data remain insufficient for most other countries in the region, though the situation appears to be improving in some countries. **Saudi Arabia** is an example. Research conducted in the capital Riyadh indicates that about half of HIV infections have been occurring during heterosexual intercourse. Most women infected with HIV were married and had acquired the virus from their husbands, while most men had been infected during paid sex (Abdulrahman et al., 2004). Sex between men and injecting drug use accounted for a small minority of infections, but a large proportion (26%) of infections found in this study were attributed to the transfusion of contaminated blood or blood products early in the epidemic. The overall scale of the epidemic here remains unknown, however, with estimates of the number of people living with HIV ranging from just over 1000 to more than 8000.

Official data from **Egypt** indicate an epidemic that is driven mainly by unprotected sex—with heterosexual intercourse accounting for about one half of HIV cases where the mode of transmission was noted, and sex between men for a further

one fifth. Injecting drug use was the mode of transmission in just 2% of HIV cases. Yet, researchers have encountered high levels of risky behaviour among injecting drug users in Cairo, for instance, with more than half the surveyed injectors saying they used non-sterile injecting equipment in the previous month (Elshimi, Warner-Smith and Aon, 2004).

Although still very low, HIV prevalence in women attending antenatal clinics in **Morocco** doubled between 1999 and 2003, when it reached 0.13%. Among sex workers and prisoners, prevalence was considerably higher, at 2.3% and 0.8%, respectively (Ministère de la santé Morocco, 2003/2004). Unprotected sexual intercourse—mostly heterosexual—is the driving factor in the epidemic, with a small proportion of detected HIV cases linked to sex between men and injecting drug use. The national health authorities estimate that between 13 000 and 16 000 people were living with HIV in 2003, more than half of them in the greater Casablanca, Souss Massa Draa and Marrakech Tensift El Haouz areas of the country.

Algeria recorded twice as many new HIV cases in 2004 (266 diagnoses) compared with the year before. This might herald a surge in the country's hitherto small epidemic, which is still inadequately surveyed. Modes of transmission are unknown for almost three quarters of the 1721 official HIV diagnoses made by end-2004, making it difficult to pinpoint the routes of transmission (Ministère de la santé Algeria, 2005). However, most infections appear to be occurring during heterosexual intercourse, with commercial sex a prominent factor, especially in the south, where HIV prevalence is much higher than elsewhere in the country. The highest infection levels recorded to date have been among sex workers: 1.7% in Oran, in the north, and as high as 9% in Tamanrasset, in the south, where it has risen sharply from the 2% found in 2000 (Institut de Formation Paramédicale de Parnet, 2004; Fares et al., 2004). In addition to sex workers, military personnel and migrants appear to be particularly vulnerable to HIV in Tamanrasset.

Tunisia's epidemic appears to be relatively stable, though an observed increase in risk situations could cause this to change. Sex work

is believed to be on the rise, while injecting drug use, though still very limited, appears also to be gaining ground. Since young people in particular have poor HIV knowledge and limited access to condoms, such trends could put them at risk of acquiring HIV.

In **Libya**, by contrast, injecting drug use is the main driver of an epidemic that has sent HIV infections surging among young men in recent years. After the 1998 outbreak of nosocomial infections at Benghazi Children's Hospital, Libya reported an almost tenfold increase in infections in young men in the early 2000s. As many as 80% of the almost 10 000 HIV cases officially-

and looks set to spread further (Jenkins and Robalino, 2003). One new study among users attending public drug treatment centres in Tehran suggests the close linkages between HIV and drug injecting, incarceration and sexual practices in the country. Most of the users were young (median age was 25 years) and three quarters of them were injecting heroin. About 40% of those who had used non-sterile injecting equipment had done so in prison (Zamani et al., 2005). Indeed, incarceration appeared to be associated with risk behaviours for HIV infection—a troubling finding, given that, by some estimates, almost half Iran's total prison population comprises people detained or convicted on drug-related charges (UNODC,

Across the region, there is a clear need for more, better and in-depth information about the patterns of HIV transmission, especially the roles of sex work and of sex between men.

reported by end-2004 have been reported since the turn of the century—and the majority of those infections appear to be the result of injecting drug use. The extent of drug injecting in Libya is difficult to gauge, though much of it appears to be concentrated in and around the capital, Tripoli, with heroin the main drug used. The country's National AIDS Programme estimates that more than 23 000 people were living with HIV at the end of 2003, a figure that is likely to continue rising if adequate efforts are not made to reach drug injectors with HIV prevention efforts, which would also protect their sexual partners. Although Libya's National AIDS Programme has increased its efforts to raise awareness and boost knowledge of the epidemic's likely development, huge challenges remain. Stigma and denial is reportedly widespread. There is an urgent need to further develop and expand HIV prevention programmes, ensuring a targeted approach to populations at risk.

Iran, which has faced a similar, though bigger, challenge since the late 1990s, has introduced some aspects of harm reduction policies for its growing population of injecting drug users. HIV is circulating widely among drug injectors, of whom there were an estimated 200 000 in 2003,

2002). The finding underscores the urgent need to broaden proven preventive programmes, especially for incarcerated drug injectors (Zamani et al., 2005). Beyond the prison gates, comprehensive harm reduction programmes must also be expanded if Iran's HIV epidemic is to be curbed. The urgency is underscored by the fact that most of the drug injectors who participated in the Tehran study were sexually active, that many either bought or sold sex and that only 53% of sexually active injecting drug users had ever used a condom (Zamani et al., 2005). An earlier study had found that about half of injecting-drug users were married, and one third had reported extra-marital sex (UNAIDS/WHO, 2004), which suggests a clear possibility of sexual transmission of HIV from infected drug injectors to their sexual partners (Zamani et al., 2005). Although sketchy, the available evidence indicates that low levels of condom use among sex workers also put them and their clients at risk of infection.

Very little is known about the spread of HIV in other countries in this region. About 600–1000 people are believed to be living with HIV in **Jordan**, where adult HIV prevalence appears to be very low (about 0.02%). About half the infections are attributed to unprotected sex; yet,

an extensive survey among young people has found casual sex was relatively rare and condom use moderately high (40%) among those who did have non-marital sex. In **Yemen**, HIV transmission is believed to be related to commercial sex, while injecting drug use appears to be a more prominent mode of transmission in **Bahrain**, **Kuwait** and **Oman**.

Across the region, there is a clear need for more, better and in-depth information about the patterns of HIV transmission, especially the roles of sex work and of sex between men. On both fronts, scant information has been gathered; this suggests that there is a likelihood that HIV is transmitted through other risky behaviours or in other contexts. For example, in several countries of this region, a combination of inadequate surveillance data and

strong sociocultural taboos against sex between men could be hiding sex between men as a factor in HIV transmission. Little is known about HIV transmission in prisons, although available data point to elevated risk in those settings. HIV prevalence of 18% has been reported in prisons in Tripoli, Libya, 2% in Sudan in 2002 and almost 1% in Morocco in 2003 (Sammud, 2005; Ministry of Health Morocco, 2005).

HIV prevention programmes and services remain sporadic in this region. Knowledge of AIDS is generally poor, and preventive practices are rare, even among populations most at high risk of becoming infected. Substantive efforts are clearly needed to introduce more effective HIV prevention strategies in the Middle East and North Africa.

OCEANIA

HIV and AIDS statistics and features, in 2003 and 2005

	Adults and children living with HIV	Number of women living with HIV	Adults and children newly infected with HIV	Adult prevalence (%)	Adult and child deaths due to AIDS
2005	74 000 [45 000–120 000]	39 000 [20 000–62 000]	8 200 [2400–25 000]	0.5 [0.2–0.7]	3 600 [1700 - 8200]
2003	63 000 [38 000–99 000]	27 000 [14 000–43 000]	8 900 [2600–27 000]	0.4 [0.2–0.6]	2 000 [910–4900]

An estimated 74 000 people [45 000–120 000] in Oceania are living with HIV. Although less than 4000 [<10 000] people are believed to have died of AIDS in 2005, about 8200 [2400–25 000] are thought to have become newly infected with HIV. Among young people 15–24 years of age, an estimated 1.2% of women [0.6–2.4%] and 0.4% of men [0.2–0.8%] were living with HIV in 2005.

HIV infections have now been reported in every country or territory in Oceania, barring **Niue and Tokelau**. Although the epidemics are still in their early stages in most places, preventive efforts need to be stepped up.

More than 90% of the 11 200 HIV infections reported across the 21 Pacific Islands countries and territories by end-2004 were recorded in **Papua New Guinea** where an AIDS epidemic is now in full swing. Since 1997, HIV diagnoses have increased by about 30% each year in Papua New Guinea; approximately 10 000 HIV cases had been diagnosed by the end of 2004, but the actual number of people living with HIV could be five times as high (National AIDS Council PNG and National Department of Health, 2004). The country's HIV surveillance system reveals a prevalence of 2% among pregnant women

attending antenatal clinics in Goroka in 2003 (compared with 0.9% in 2002), 2.5% in Lae and 1.4% in the capital of Port Moresby. Among people seeking treatment at sexually transmitted infection clinics in Port Moresby, 20% tested HIV-positive in 2004, as did 6% in Mount Hagen. Data on HIV have improved considerably since the first sentinel surveillance began in 2001 but most HIV surveillance has been conducted in urban areas. As a result, information on HIV prevalence in pregnant women is absent for many of the country's 20 provinces.

Available information points to a mainly heterosexual epidemic in which commercial sex and casual sex networks feature prominently (National AIDS Council Secretariat and Department of Health, 2004) as routes of transmission. Studies among people in their late teens have found high levels of sexual activity, and of alcohol and drug use. Young people showed some knowledge of HIV and AIDS, but had very little access to prevention information and services. The very high levels of sexually transmitted infections that are being recorded reflect widespread sexual risk-taking. A study in Daru found prevalence of syphilis was 19%, Chlamydia 18% and gonorrhoea 9%—figures that were matched or exceeded in Lae (National

AIDS Council PNG, 2004). (Note that the study was carried out among relatively small numbers of voluntarily-recruited participants, which could have biased the results.)

To prevent a worsening epidemic, HIV prevention programmes need to be scaled up and such underlying factors as wide-scale migration, extreme poverty and inequality between men and women (including high levels of sexual violence against women) need to be addressed (National AIDS Council PNG, 2004).

Australia, by contrast, has the oldest epidemic in the region. Having declined by about 25% from 1995–2000, the annual number of new HIV diagnoses in Australia has been edging upward again and reached 820 in 2004. This brought to an estimated 14 800 the number of people living with HIV in the country in 2004. A significant proportion (31%) of those infections had occurred during the previous year, possibly reflecting a resurgence of risky behaviour. The bulk of HIV transmission in Australia still occurs through sex between men, which accounts for 68% of all HIV infections recorded since the epidemic began. However, the proportion of total HIV infections attributed to heterosexual intercourse has grown from 7% before 1996 to over 23% of new diagnoses by 2004. As a result, more women are becoming infected. In New South Wales, the number of new HIV diagnoses among women almost doubled between 2003 and 2004. More than half the HIV infections attributed to heterosexual intercourse in 2000–2004 have been in persons who are from a high-prevalence country (33%) or whose partners are from a high-prevalence country (27%) (National Centre in HIV Epidemiology and Clinical Research, 2005).

No significant differences in the per capita rates of HIV diagnoses among Indigenous and non-Indigenous people have been reportedly recently; in both instances, those rates have increased slightly since 2000. The main modes of HIV transmission differ, however. Among Indigenous people, about three quarters of diagnoses were attributed to sex between men and heterosexual intercourse. Injecting drug use accounted for 20% of diagnoses in Indigenous people as compared to 3% of non-Indigenous. One third of Indigenous women diagnosed with HIV had acquired the virus during unsafe injecting drug use (National

Centre in HIV Epidemiology and Clinical Research, 2005).

There is wide-scale access to antiretroviral therapy in Australia, with more than half the people living with HIV receiving treatment. As a result, median survival time following the diagnosis of AIDS rose from 17 months prior to 1995 to 45 months in 2001 (National Centre in HIV Epidemiology and Clinical Research, 2005).

New Zealand's epidemic is small by comparison. However, new HIV cases have doubled in recent years—from fewer than 80 in 1999 to 157 in 2004. Sex between men accounted for about half the new diagnoses. Similar to Australia, more than 90% of people with heterosexually-acquired HIV diagnosed in 2004 had been infected abroad (Ministry of Health, 2005). AIDS deaths have declined consistently since the mid-1990s, primarily due to extensive access to antiretroviral treatment. Of the 68 people diagnosed with AIDS in 1990, only 7% were still living four years later; but of the 22 people diagnosed with AIDS in 2000, 77% were alive at the end of 2004—achievements that mirror those seen in North America and Western Europe (Ministry of Health, 2005).

HIV-infection levels are very low in the rest of Oceania, with the total number of reported HIV cases exceeding 150 only in **New Caledonia** (246), **Guam** (173), **French Polynesia** (220) and **Fiji** (171) (Secretariat of the Pacific Community, 2005). The data are based on limited HIV surveillance.

Given the high levels of other sexually transmitted infections that have been recorded in some Pacific islands, none of these countries and territories can afford to be complacent. In Port Vila, **Vanuatu**'s capital, some 6% of pregnant women have been found to be infected with gonorrhoea, 13% with syphilis and more than 20% with Chlamydia. Findings from **Samoa** are even more disturbing, with 43% of women attending antenatal services in the capital Apia found to be infected with at least one sexually-transmitted infection. One quarter of sex workers in Dili, **East Timor**, had gonorrhoea and/or Chlamydia, and 60% were infected with HSV2, according to research done in 2003. Among taxi drivers and men who have sex with men, 29% had HSV2 (Pisani and Dili STI survey team, 2004).

MAPS

Global estimates for adults and children, 2005

Adults and children estimated to be living with HIV in 2005

Estimated number of adults and children newly infected with HIV during 2005

Estimated adult and child deaths from AIDS during 2005

GLOBAL ESTIMATES FOR ADULTS AND CHILDREN, 2005



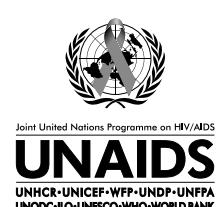
People living with HIV 40.3 million (36.7–45.3 million)

New HIV infections in 2005 4.9 million (4.3–6.6 million)

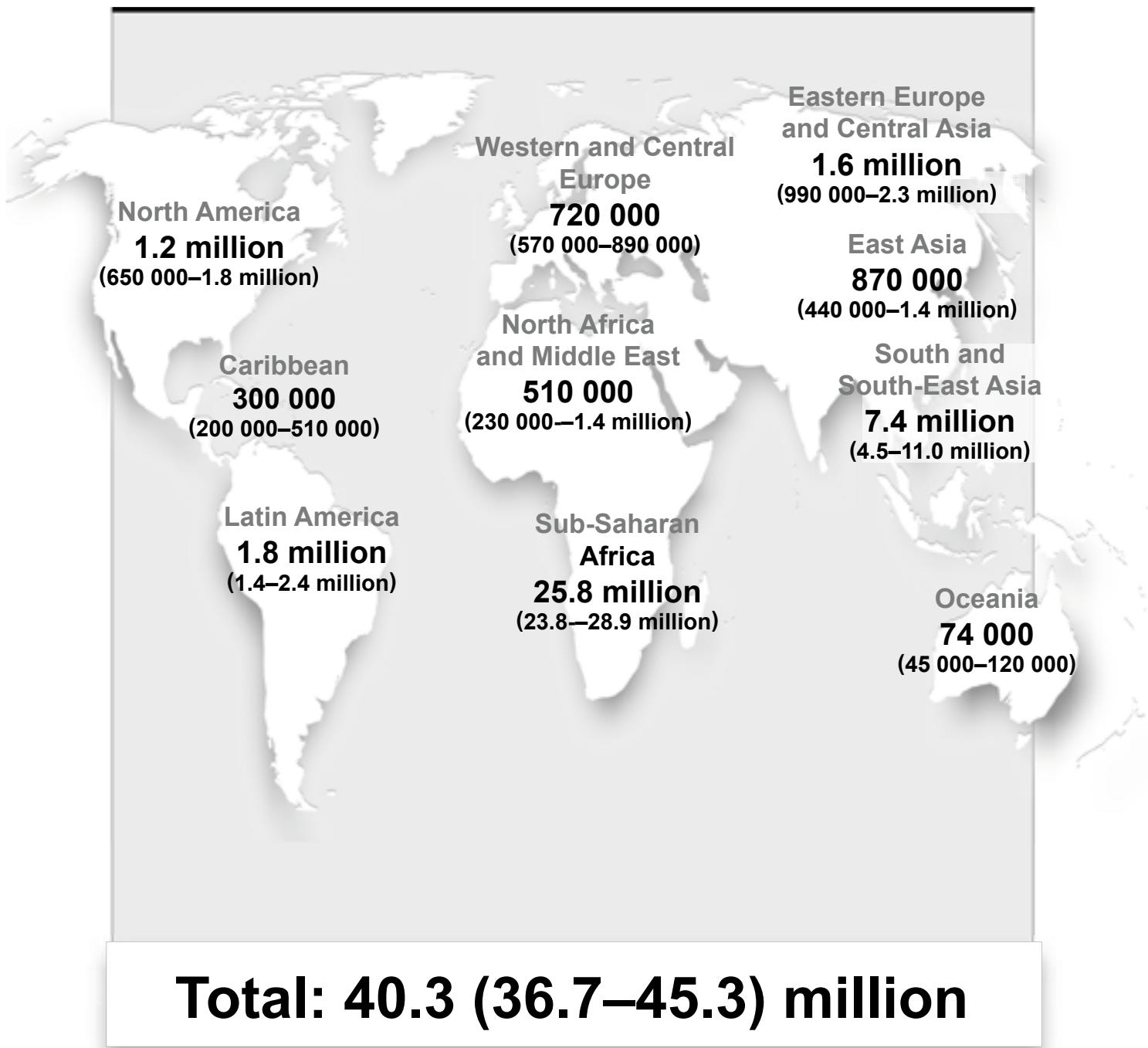
Deaths due to AIDS in 2005 3.1 million (2.8–3.6 million)

The ranges around the estimates in this table define the boundaries within which the actual numbers lie, based on the best available information.

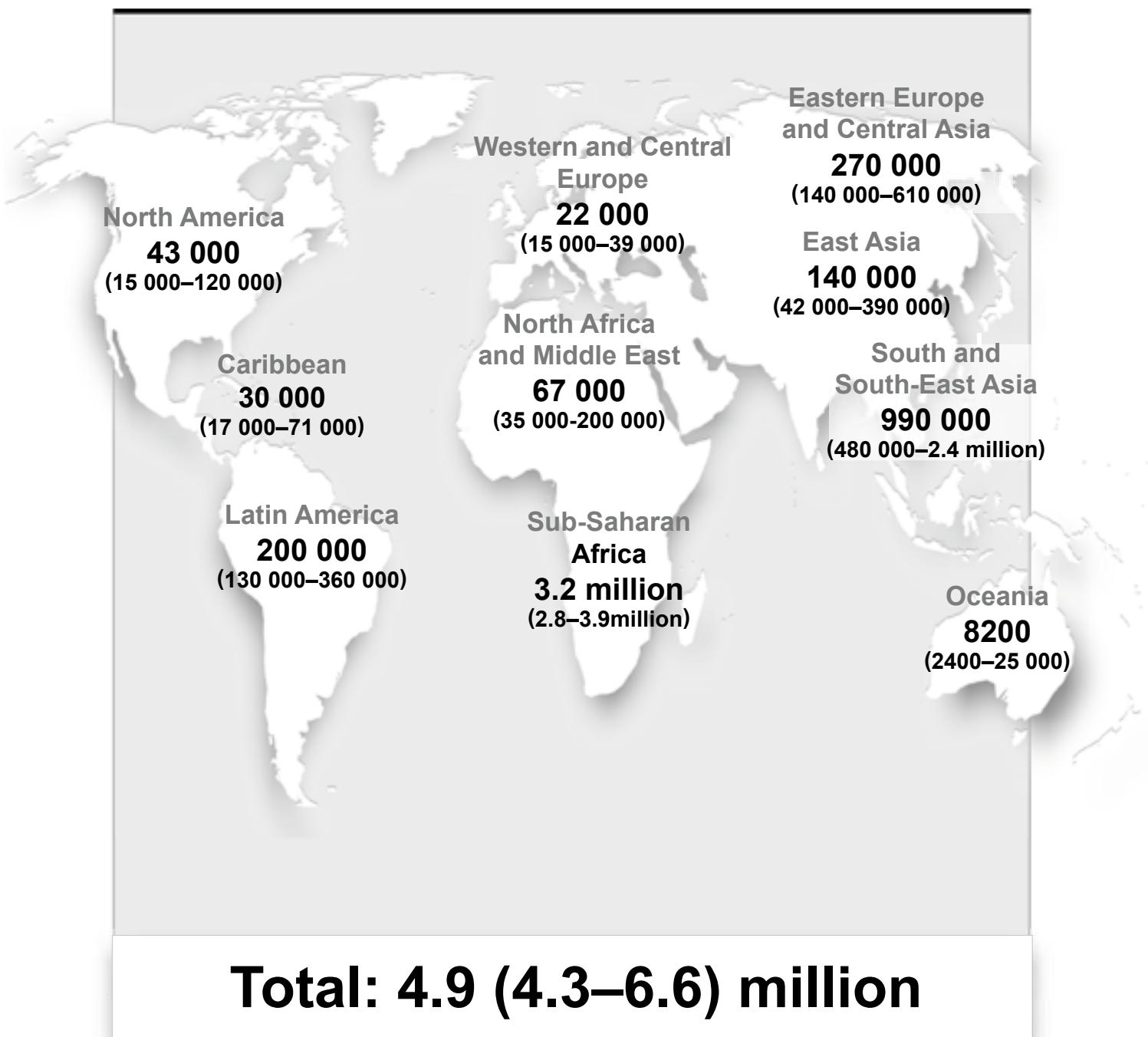
AIDS epidemic update: December 2005



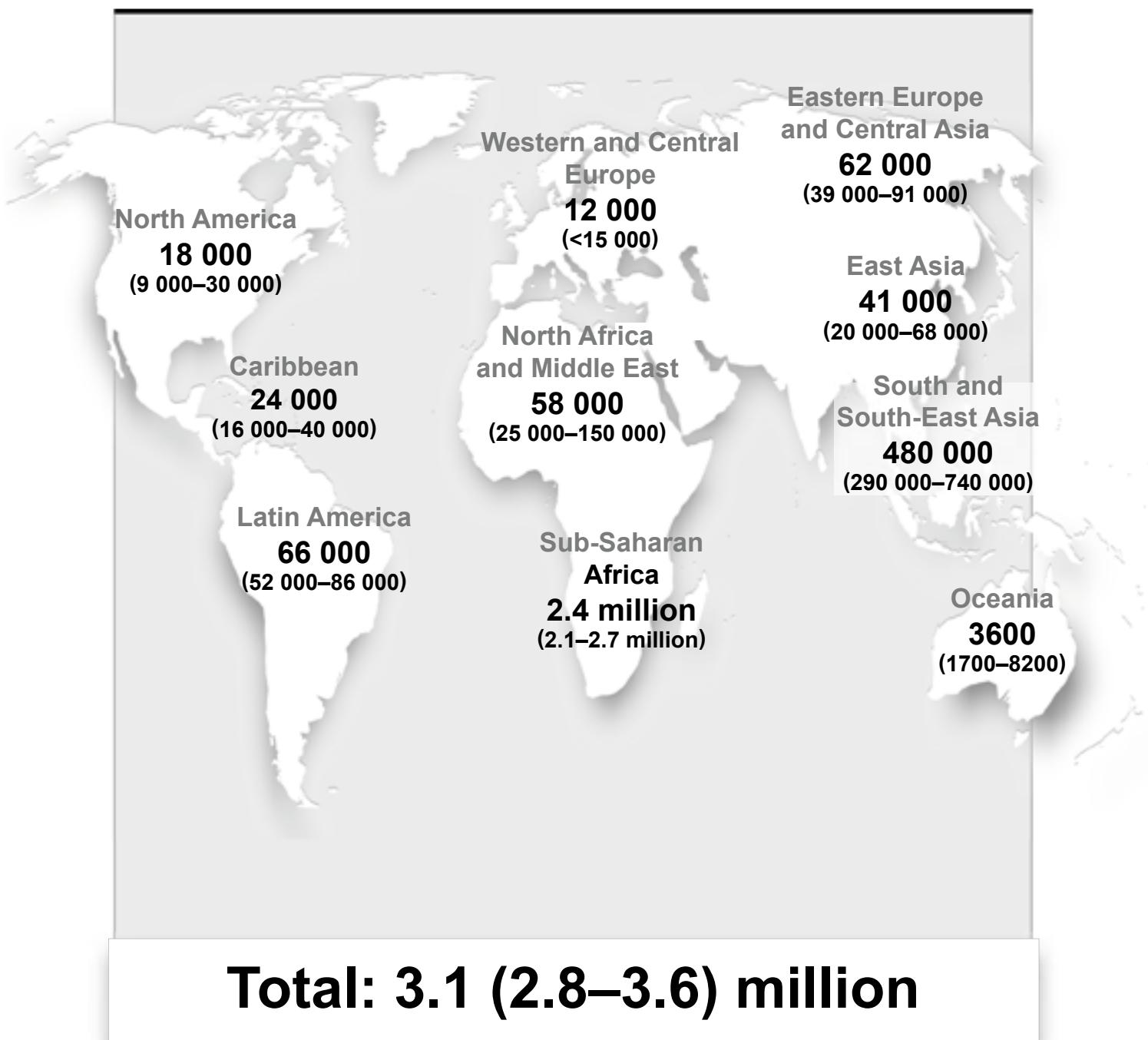
ADULTS AND CHILDREN ESTIMATED TO BE LIVING WITH HIV IN 2005



ESTIMATED NUMBER OF ADULTS AND CHILDREN NEWLY INFECTED WITH HIV DURING 2005



ESTIMATED ADULT AND CHILD DEATHS FROM AIDS DURING 2005



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Explanatory note about UNAIDS/WHO estimates

The UNAIDS/WHO estimates in this document are based on the most recent available data on the spread of HIV in countries around the world. They are provisional. UNAIDS and WHO, together with experts from national AIDS programmes and research institutions, regularly review and update the estimates as improved knowledge about the epidemic becomes available, while also drawing on advances made in the methods for deriving estimates. Because of these and future advances, the current estimates cannot be compared directly with estimates published in previous years, nor with those that may be published subsequently.

The estimates and data provided in the graphs and tables are given in rounded numbers. However, unrounded numbers were used in the calculation of rates and regional totals, so there may be small discrepancies between the global totals and the sum of the regional figures.

UNAIDS and WHO will continue to work with countries, partner organizations and experts to improve data collection. These efforts will ensure that the best possible estimates are available to assist governments, nongovernmental organizations and others in gauging the status of the epidemic and monitoring the effectiveness of their considerable prevention and care efforts.

The annual **AIDS epidemic update** reports on the latest developments in the global AIDS epidemic. With maps and regional summaries, the 2005 edition provides the most recent estimates of the epidemic's scope and human toll, explores new trends in the epidemic's evolution, and features a special section on HIV prevention.



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