A global overview of the AIDS epidemic
Women increasingly infected by HIV

In recent years, the overall proportion of HIV-positive women has steadily increased. In 1997, women were 41% of people living with HIV; by 2002, this figure rose to almost 50%. This trend is most marked in places where heterosexual sex is the dominant mode of transmission, particularly the Caribbean and sub-Saharan Africa. Women also significantly figure in many countries with epidemics that are concentrated in key populations such as injecting drug users, mobile populations, and prisoners.

Sub-Saharan Africa

Nowhere is the epidemic’s ‘feminization’ more apparent than in sub-Saharan Africa, where 57% of adults infected are women, and 75% of young people infected are women and girls. Several social factors are driving this trend. Young African women tend to have male partners much older than themselves—partners who are more likely than young men to be HIV-infected. Gender inequalities in the region make it much more difficult for African women to negotiate condom use. Furthermore, sexual violence, which damages tissues and increases the risk of HIV transmission, is widespread, particularly in the context of violent conflict.

In countries where the general population’s prevalence is high and women’s social status is low, the risk of HIV infection through sexual violence is high. A survey of 1366 women attending antenatal clinics in Soweto, South Africa, found significantly higher rates of HIV infection in women who were physically abused, sexually assaulted or dominated by their male partners. The study also produced evidence that abusive men are more likely than non-abusers to be HIV-positive (Dunkle et al., 2004).

Asia

Similar factors are threatening women in South and South-East Asia, but the overall impact in the region is much lower because the epidemic in most countries is concentrated among injecting drug users and other key populations. At the end of 2003, women accounted for 28% of infections, a slight increase compared to end-2001 estimates. In South Asia, women’s low economic and social position has profound implications. Congruence between indicators of women’s poor status and their HIV vulnerability suggests a close link between patriarchy and HIV in South Asia (UNDP, 2003). Women typically have limited access to reproductive health services and are often ignorant about HIV, the ways in which it can spread and prevention options. Social and cultural norms often prevent them from insisting on prevention methods such as use of condoms in their relations with their husbands.

Global increases, global inequality

Increases in the percentage of HIV-infected women also appear to be rising in: North America (25% in 2003, compared to 20% in 2001); Oceania (19% in 2003, compared to 17% in 2001); Latin America (36% in 2003, compared to 35% in 2001); the Caribbean (49% in 2003, compared to 48% in 2001), and Eastern Europe and Central Asia (33% in 2003, compared to 32% in 2001). While it is difficult to compare all the regional factors causing this increase, it is clear that gender inequalities—especially the rules governing sexual relationships for women and men—are at the heart of the matter.
In 2003, an estimated 4.8 million people (range: 4.2–6.3 million) became newly infected with HIV. This is more than in any one year before. Today, some 37.8 million people (range: 34.6–42.3 million) are living with HIV, which killed 2.9 million (range: 2.6–3.3 million) in 2003, and over 20 million since the first cases of AIDS were identified in 1981.

The epidemic remains extremely dynamic, growing and changing character as the virus exploits new opportunities for transmission. There is no room for complacency anywhere. Virtually no country in the world remains unaffected. Some countries that have let down their guard are seeing a renewed rise in numbers of people infected with HIV. For example, in some industrialized countries, widespread access to antiretroviral medicines is fuelling a dangerous myth that AIDS has been defeated. In sub-Saharan Africa, the overall percentage of adults with HIV infection has remained stable in recent years, but the number of people living with HIV is still growing.

The epidemic is not homogeneous within regions; some countries are more affected than others. Even at country level there are usually wide variations in infection levels between different provinces, states or districts, and between urban and rural areas. In reality, the national picture is made up of a series of epidemics with their own characteristics and dynamics.

Since 2002, there has been a resurgence of energy and commitment in responding to the epidemic. Finances have increased considerably, and donors are exploring ways of channelling AIDS resources more quickly and efficiently to where they are most needed. The cost of antiretroviral medicines has tumbled, and concerted efforts are being made to extend treatment to millions of people in low- and middle-income countries whose lives depend on it. There is now also more funding available for prevention.

Together, all these approaches are making a difference in curbing the spread of HIV and in restoring quality of life to infected people and their families. But they are doing so on a scale that is nowhere near the level required to halt or reverse the epidemic. At the rate it is currently spreading, HIV will have an increasingly serious impact into the foreseeable future, unravelling the fabric of societies in its path.
Trends of global HIV infection

The number of people living with HIV continues to rise, despite the fact that effective prevention strategies exist. All the estimates in this report are based on updated estimation methodologies and the latest available data. Hence current estimates cannot be compared directly with previously published estimates. UNAIDS and the World Health Organization (WHO) have produced country-specific estimates for HIV every two years since 1998. During that time, the methods and assumptions used to make these estimates have been continually evolving. The UNAIDS Reference Group on Estimates, Modelling and Projections (scientists and researchers from a variety of institutions, convened by UNAIDS) meets annually to guide this process and refine the research tools, drawing on work carried out through smaller technical groups over the course of the year. Updated assumptions and methods are then applied to the subsequent round of estimates.

UNAIDS and WHO have revised their global estimates of the number of adults living with HIV, particularly in the sub-Saharan region. These new estimates are the result of more accurate data from country surveillance, additional information from household surveys, and steady improvements in the modelling methodology used by UNAIDS, WHO and their partners. This has led to lower global HIV estimates for 2003, as well as for previous years. Although the global estimates are lower, this does not mean the AIDS epidemic is easing off or being reversed. The epidemic continues to expand.

There are massive challenges in determining the exact prevalence levels of any disease—all figures are estimates based on available data. While the facts on HIV have been more accurate than many infectious diseases, there are those who would argue that UNAIDS and WHO have sometimes underestimated the epidemic, and at other times inflated the HIV numbers. The reality is more complex since global estimates are based on country estimates which themselves are derived from country surveillance systems. These systems collect data on HIV infection levels in different groups, but data are incomplete and their quality has varied.

In many countries, vast populations in rural areas are not well covered by surveillance. Because of social and political prejudice, many surveillance systems also bypass the population groups most likely to be exposed to HIV, such as injecting drug users, sex workers and men who have sex with men. By 2002, only 36% of low- and middle-income countries had a fully implemented surveillance system; however, 58% of countries with a generalized epidemic (where HIV prevalence is above 1%) had such a system.

The three most-commonly-used sources of data are sentinel surveillance systems that undertake periodic surveys among specific population groups; national population-based surveys; and case reports from health facilities. Each type of data has strengths and weaknesses. If more sources can be tapped, a more detailed picture can be pieced together and more accurate estimates achieved. In sub-Saharan Africa, the virus is spreading throughout the general population in many countries, and estimates are based largely on information gathered from pregnant women attending selected antenatal clinics. Recently, several countries have conducted national population-based surveys with HIV testing, some of which have been Demographic and Health Surveys. Examples include Burundi, Kenya, Mali, Niger, South Africa, Zambia and Zimbabwe. The data from these surveys have suggested that previous estimates based on sentinel surveillance were too high. However, all data are subject to possible biases. For example:

- The assumption that HIV prevalence among pregnant women is equivalent to the prevalence among both men and women in the surrounding communities may not be valid in all countries.
- Data from antenatal clinics do not fully represent remote rural populations, and there are few data to help adjust for this bias.
- In household surveys in some countries, people who refuse to participate, and those who are not at home when the survey team passes, may well have higher levels of HIV infection.
Difficulties in reconciling different estimates based on data from health facilities and population-based surveys are not applicable solely to HIV. For many conditions and diseases, including micronutrient deficiencies, noncommunicable disorders, and infectious diseases, estimates are improved through surveys collecting clinical and biological data. Even when non-disease indicators, such as poverty levels, are used, reconciling national household accounts with household surveys has become a difficult technical issue. But most experts agree that both should be used and that the truth about global poverty and inequality lies somewhere between the extremes suggested by the two methodologies.

An accurate picture of the epidemic is vital for directing national responses. Some countries may exaggerate estimates if they believe that doing so will increase their chances of obtaining international funding support. Or they may understate estimates to disguise poor political leadership, or because they fear high HIV levels will scare off tourists or business investors. However, much of the difference in interpreting the data does not stem from purposeful misrepresentation, but from the simple fact that there are important data gaps.

Even before the latest household survey results were released, more sophisticated sentinel surveillance and improved analysis resulted in lower estimates for a number of African countries. This is good news in that it means that fewer people than previously thought will suffer the horror of AIDS, but it should not be cause for undue optimism. For Africa, AIDS remains a catastrophe, and unrelenting commitment is required to turn the epidemic around and alleviate its tremendous impact.

Good intelligence is the key to appropriate action

Almost universally, mainstream society disapproves of, and sometimes harshly punishes, behaviour such as illicit drug use, sex between men, and sex work. This societal disapproval has meant that people engaged in these behaviours are frequently ignored by epidemiological surveillance systems, even though they are among the most likely to be exposed to HIV. Failure to monitor what is going on among them inevitably means that efforts to respond to the epidemic will be out of step with what is required, and HIV will retain the upper hand. Countries that conduct comprehensive surveillance are more likely to have an accurate picture of their epidemic, and can better plan an effective response.
Progress update on the global response to the AIDS epidemic, 2004

AIDS epidemic continues to expand; vulnerable populations at greatest risk

- Country data indicate that the number of people living with HIV continues to rise in all parts of the world despite the fact that effective prevention strategies exist. Sub-Saharan Africa remains the hardest-hit region with extremely high HIV prevalence among pregnant women aged 15–24 reported in a number of countries.

- In Asia, the HIV epidemic remains largely concentrated in injecting drug users, men who have sex with men, sex workers, clients of sex workers and their immediate sexual partners. Effective prevention programming coverage in these populations is inadequate.

- Diverse epidemics are under way in Eastern Europe and Central Asia. Injecting drug use is the main driving force behind epidemics across the region.

- In many high-income countries, sex between men plays an important role in the epidemic. Drug injecting plays a varying role. In 2002, it accounted for more than 10% of all reported HIV infections in Western Europe and was responsible for 25% of HIV infections in North America.

- In Latin America and the Caribbean, 11 countries have an estimated national HIV prevalence of 1% or more.

Source: UNAIDS

Asia

An estimated 7.4 million people (range: 5.0–10.5 million) in Asia are living with HIV. Around half a million (range: 330 000–740 000) are believed to have died of AIDS in 2003, and about twice as many—1.1 million—(range: 610 000–2.2 million) are thought to have become newly infected with HIV. Among young people 15–24 years of age, 0.3% of women (range: 0.2–0.3%) and 0.4% of men (range: 0.3–0.5%) were living with HIV by the end of 2003. Epidemics in this region remain largely concentrated among injecting drug users, men who have sex with men, sex workers, clients of sex workers and their sexual partners.

China and India: large epidemics

The region includes the world’s most populous countries—China and India—with 2.25 billion people between them. National HIV prevalence in both countries is very low: 0.1% (range: 0.1–0.2%) in China and between 0.4% and 1.3% in India. But a closer focus reveals that both have extremely serious epidemics in a number of provinces, territories and states.

In China, 10 million people may be infected with HIV by 2010 unless effective action is taken. The virus has spread to all 31 provinces, autonomous regions and municipalities, yet each area has its own distinctive epidemic pattern. In some, injecting drug use is fuelling HIV spread. Among injecting drug users, HIV prevalence is 35–80% in Xinjiang, and 20% in Guangdong. In other areas, such as Anhui, Henan, and Shandong, HIV gained a foothold in the early 1990s among rural people who were selling blood plasma to supplement their meagre farm incomes. Infection levels of 10–20% have been found, rising to 60% in certain communities. As a result, many people have already died of AIDS.

India has the largest number of people living with HIV outside South Africa—estimated at 4.6 million in 2002. Most infections are acquired sexually, but a small proportion is acquired through injecting drug use. Injecting drug use dominates in Manipur and Nagaland in the north-east of the country, bordering Myanmar and close to the Golden Triangle. In this area, HIV infection levels of 60–75% have
... been found among injecting drug users using non-sterile injecting equipment.

In the southern states of Andhra Pradesh, Karnataka, Maharashtra, and Tamil Nadu, HIV is transmitted mainly through heterosexual sex, and is largely linked to sex work. Indeed, according to selected surveys, more than half of sex workers have become infected with HIV. In all four states, infection levels among pregnant women in sentinel antenatal clinics have remained roughly stable at over 1%, suggesting that a significant number of sex workers’ clients may have passed on HIV to their wives (see Figure 2).

In India, knowledge about HIV is still scant and incomplete. In a 2001 national behavioural study of nearly 85,000 people, only 75% of respondents had heard of AIDS and awareness was particularly low among rural women in Bihar, Gujarat and West Bengal. Less than 33% of all respondents had heard of sexually transmitted infections and only 21% were aware of the links between sexually transmitted infections and HIV.

HIV transmission through sex between men is also a major cause for concern in many areas of India. Recent research shows that many men who have sex with men also have sex with women. In 2002, behavioural surveillance in five cities among men who have sex with men found that 27% reported being married, or living with a female sexual partner. In a study conducted in a poor area of Chennai in 2001, 7% of men who have sex with men were HIV-positive. Attention currently focuses on areas with high recorded prevalence, but there is concern about what might be happening in the vast areas of India for which there are little data.

**Risk behaviour on the rise**

Elsewhere in South Asia, behavioural information suggests that conditions are ripe for HIV to spread. For example, in Bangladesh, national adult prevalence is less than 0.1%, but there are significant levels of risky behaviour. Large numbers of men continue to buy sex in greater proportions than elsewhere in the region. Moreover, most of these men do not use condoms in their commercial sex encounters and female sex workers report the lowest condom use in the region.

Among injecting drug users, 71% of those who do not participate in needle-exchange programmes use non-sterile injecting equipment, compared with 50% of attendees in central Bangladesh programmes, and 25% in north-west Bangladesh programmes. Drug use in south-east Bangladesh appears to be on the rise (Dhaka, 2003). Surveys show that only about 65% of young people, fewer than 20%
of married women, and just 33% of married men have even heard of AIDS.

In Pakistan, 2001 country-level studies of populations more likely to be exposed to HIV revealed very low prevalence. Pakistan has an estimated adult HIV prevalence of 0.1%. It also has about three million heroin users, many of whom started injecting drugs in the 1990s. The first outbreak of HIV infection among injecting drug users happened in 2003. In Larkana, a small rice-growing town in Sindh province, 10% of 175 injecting drug users tested HIV-positive. A behavioural survey in Quetta found that a high proportion of respondents used non-sterile injecting equipment; and over half of them said they visited sex workers. Few had heard of AIDS, and even fewer had ever used a condom.

In South-East Asia, three countries in particular—Cambodia, Myanmar and Thailand—are experiencing particularly serious epidemics. Cambodia’s national HIV prevalence is around 3%—the highest recorded in Asia. Data suggest that there have been some dramatic changes in the shape of Cambodia’s epidemic. For instance, infection among brothel-based sex workers fell from 43% in 1998 to 29% in 2002 (see Figure 3).

There have also been sustained declines in prevalence among their customers, who include urban policemen, military conscripts and motorcycle taxi riders. This is believed to be due to increased condom use, as well as fewer visits to sex workers. However, the picture is incomplete: little has been done to monitor the epidemic among drug users, or men who have sex with men, even though HIV prevalence among male sex workers in the capital was above 15% when last measured in 2000 (Girault et al., 2004).

**Thailand: progress is lagging**

In Thailand, the number of new infections has fallen from a peak of around 140,000 a year in 1991, to around 21,000 in 2003. This remarkable achievement came about mainly because men used condoms more, and also reduced their use of brothels. However, Thailand’s epidemic has been changing over the years (see Figure 4). There is mounting evidence that HIV is now spreading largely among the spouses and partners of clients of sex workers and among marginalized sections of the population, such as injecting drug users and migrants.

Despite Thailand’s indisputable success, coverage of prevention activities is inadequate. This is especially the case among men who have sex with men, and injecting drug users; their infection levels remain high. In Bangkok, over 15% of men who have sex with men who were tested in a 2003 study were HIV-positive, and 21% had not used a condom with their last casual partner.
Many young Thai men avoid brothels because they are afraid of contracting HIV. However, the drop in commercial sex patronage appears to have been accompanied by an increase in extramarital and casual sex. Young Thai women also appear more likely to engage in premarital sexual relationships than earlier generations (VanLandingham and Trujillo, 2002). In Chiang Rai province, a study among vocational students revealed that only 7% of males surveyed said they had ever bought sex, but that almost half the students (male and female) were sexually active. Behavioural surveillance between 1996 and 2002 shows a clear rise in the proportion of secondary-school students who are sexually active. It also shows consistently low levels of condom use.

One of the newest epidemics in the region is in Viet Nam. National prevalence is still well below 1%, but, in many provinces, sentinel surveillance has revealed HIV levels of 20% among injecting drug users. Although HIV prevalence among injecting drug users increased significantly in some provinces in the late 1990s, recent outbreaks are now occurring in other provinces such as Can Tho, Hue, Nam Dinh, Thai Nguyen, and Thanh Hoa. Use of contaminated drug injecting equipment is believed to be responsible for two-thirds of HIV infections, but unsafe sex is also a concern in Viet Nam. In major cities in 2002, prevalence levels of 8–24% were reported among sex workers.

Indonesia’s epidemic is currently unevenly distributed across this archipelago nation of 210 million people; six of the 31 provinces are particularly badly affected. The country’s epidemic is also driven largely by the use of contaminated needles and syringes for drug injection. HIV prevalence among its 125 000–196 000 injecting drug users has increased threefold—from 16% to 48% between 1999 and 2003. In 2002 and 2003, HIV prevalence ranged from 66% to 93% among injecting drug users attending testing sites in the capital city, Jakarta. Indonesia’s drug users are regularly arrested and sent to jail. In early 2003, 25% of inmates in Jakarta’s Cipinang prison were HIV-positive.

Among Indonesia’s more than 200 000 female sex workers, HIV prevalence varies widely. In many areas, recent serosurveillance shows that HIV infection in this population group is still rare. But some areas of the country have recorded sharp rises in the past year or two, with reported levels as high as 8–17%. Among transgender sex workers, known as waria, data show a sharp increase in HIV prevalence—from 0.3% in 1995 to nearly 22% in 2002 in Jakarta. There is strong evidence that various sexual and injecting-drug-user networks in Indonesia overlap significantly, thus creating an ideal environment for HIV to spread.
Oceania

In Australia, following a long-term decline, the annual number of new HIV diagnoses has gradually increased over a five-year period, from around 650 cases in 1998 to around 800 in 2002. HIV transmission continues to occur mainly through sexual contact between men. Among men diagnosed with newly acquired HIV infection between 1997 and 2002, more than 85% were found to have had a history of sex with another man. Relatively small percentages of newly acquired infections were attributed to a history of injecting drug use (3.4%), or heterosexual contact (8.5%). Similarly, the principal form of HIV transmission in New Zealand continues to be sexual contact between men.

Papua New Guinea, which shares an island with one of Indonesia’s worst-affected provinces, Irian Jaya, has the highest prevalence of HIV infection in Oceania. Prevalence is over 1% among pregnant women in the capital, Port Moresby, and in Goroka and Lae. Papua New Guinea’s epidemic appears largely heterosexually driven. High levels of other sexually transmitted infections indicate behavioural patterns that would also facilitate HIV transmission beyond sex workers and their clients.

In other islands in Oceania, HIV infection levels are still very low, but levels of sexually transmitted infections are high. A person with a sexually transmitted infection faces a higher risk of contracting and transmitting HIV during sexual encounters. In Vanuatu, pregnant women have chronically high levels of some sexually transmitted infections: 28% have Chlamydia and 22% have Trichomonas infection. Some 6% of pregnant women are infected with gonorrhoea, and 13% with syphilis. About 40% of the women had more than one sexually transmitted infection. Similarly, in Samoa, 31% of pregnant women had Chlamydia and 21% had Trichomonas infection. Overall, 43% of pregnant women had at least one sexually transmitted infection.

Sub-Saharan Africa

Sub-Saharan Africa has just over 10% of the world’s population, but is home to close to two-thirds of all people living with HIV—some 25 million (range: 23.1–27.9 million). In 2003 alone, an estimated 3 million people (range: 2.6–3.7 million) in the region became newly infected, while 2.2 million (range: 2.0–2.5 million) died of AIDS. Among young people 15–24 years of age, 6.9% of women (range: 6.3–8.3%) and 2.1% of men (range: 1.9–2.5%) were living with HIV by the end of 2003.

Many African countries are experiencing generalized epidemics. This means that HIV is spreading throughout the general population, rather than being confined to populations at higher risk, such as sex workers and their clients, men who have sex with men, and injecting drug users. In sub-Saharan Africa, as the total adult population is growing, the number of people living with HIV is increasing, with the result

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**Figure 5**

**Epidemic in sub-Saharan Africa, 1985–2003**

Source: UNAIDS/WHO, 2004
that adult prevalence has remained stable in recent years (see Figure 5). However, this overall stabilization of prevalence in the sub-Saharan region conceals important regional variations.

Although prevalence is stable in most countries, it is still rising in a few countries, such as Madagascar and Swaziland, and is declining nationwide in Uganda and in smaller areas in several other countries. Stabilized infection levels in an epidemic often result from rising death rates from AIDS, which conceal a continuing high rate of new infections. Even when HIV prevalence falls, as in Uganda, the number of new infections can remain high.

Within countries, there can be variations in prevalence by region. It has long been recognized that in most countries HIV infection levels are higher in urban than in rural areas. A review of national community-based studies shows that HIV prevalence in urban areas is about twice as high as in rural areas (see Figure 6).

**Women face greater risk**

African women are being infected at an earlier age than men, and the gap in HIV prevalence between them continues to grow. At the beginning of the epidemic in sub-Saharan Africa, women living with HIV were vastly outnumbered by men. But today there are, on average, 13 infected women for every 10 infected men—up from 12 infected women for every 10 infected men in 2002. The difference between infection levels is more pronounced in urban areas, with 14 women for every 10 men, than in rural areas, where 12 women are infected for every 10 men (Stover, 2004).

The difference in infection levels between women and men is even more pronounced among young people aged 15–24. A review of HIV-infection levels among 15–24-year-olds compared the ratio of young women living with HIV to young men living with HIV (see Figure 7). This ranges from 20 women for every 10 men in South Africa, to 45 women for every 10 men in Kenya and Mali.

In sub-Saharan Africa, heterosexual transmission is by far the predominant mode of HIV transmission. Unsafe injections in health-care settings are believed to be responsible for around 2.5% of all infections. Recently, it
has been suggested that unsafe medical injections account for most HIV transmission in the region (Gisselquist et al., 2002). However, a recent thorough review of the evidence concluded that, while a serious issue, unsafe injections are not common enough to play a dominant role in HIV transmission in sub-Saharan Africa (Schmid et al., 2004).

The ‘unsafe injections’ theory does not take into account the possibility that people sick with HIV-related disease might receive more injections. Moreover, the pattern of injections in health-care settings does not match sub-Saharan Africa’s HIV-infection distribution pattern by age and sex. Although the safety of injections must be assured in all health-care settings, effective strategies addressing sexual transmission have the largest potential to turn the epidemic around in this region.

**Diverse levels and trends**

There is tremendous diversity across the subcontinent in the levels and trends of HIV infection (see Figure 8). Southern Africa remains the worst-affected region in the world, with data from selected antenatal clinics in urban areas in 2002 showing HIV prevalence of over 25%, following a rapid increase from just 5% in 1990. Prevalence among pregnant women in urban areas was 13% in Eastern Africa in 2002, down from around 20% in the early 1990s. During this period, prevalence in West and Central Africa remained stable.

There is no single explanation for why the epidemic is so rampant in Southern Africa. A combination of factors, often working in concert, seems to be responsible. These factors include poverty and social instability that result in family disruption, high levels of other sexually transmitted infections, the low status of women, sexual violence, and ineffective leadership during critical periods in the spread of HIV. An important factor, too, is high mobility, which is largely linked to migratory labour systems.

The epidemics in Southern Africa have grown rapidly. For example, in Swaziland, the average prevalence among pregnant women was 39% in 2002—up from 34% in 2000 and only 4% in 1992. Moreover, in a number of countries, the penetration of the virus into the general population has exceeded what was considered possible. In Botswana, weighted antenatal clinic prevalence has been sustained at 36% in 2001, 35% in 2002, and 37% in 2003. In South Africa, prevalence among pregnant women was 25% in 2001 and 26.5% in 2002.

In parts of East and Central Africa, there are signs of real decline in infections in some countries. This is most notable in Uganda, where national prevalence dropped to 4.1% (range: 2.8–6.6%) in 2003. In Kampala, prevalence was around 8% in 2002—down from 29% 10 years ago. But even Uganda cannot afford to relax: surveys suggest that today’s young people may be less knowledgeable about AIDS than their counterparts in the 1990s.

**Figure 8**

Median HIV prevalence (%) in antenatal clinics in urban areas, by subregion, in sub-Saharan Africa, 1990–2002

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Source: Adapted from WHO AFRO 2003 Report
No other country in the region has so dramatically reversed the epidemic as Uganda, but HIV prevalence among pregnant women has declined in several other places. For example, in the Ethiopian capital, Addis Ababa, prevalence has fallen from a peak of 24% in 1995 to 11% in 2003. Prevalence has also dropped in several sites in Kenya, including in Nairobi, while prevalence in many other sites appears stable. However, not all countries in the region show stabilized levels. In Madagascar, there has been an alarming rise in prevalence among pregnant women; it increased by almost fourfold since 2001, to reach 1.1% in 2003.

In West Africa, the epidemic is diverse and changeable. National prevalence has remained relatively low in the Sahel countries, with prevalence around 1%. However, the overall figures can conceal very high infection levels among certain population groups. In Senegal, for example, national HIV prevalence is below 1% (range: 0.4–1.7%); yet, among sex workers in two cities, prevalence rose from 5% and 8% respectively in 1992, to 14% and 23% in 2002.
Prevalence levels are highest in Côte d’Ivoire at 7% (range: 4.9–10%), although Abidjan recorded its lowest level (6%) in a decade in 2002.

Benin and Ghana show HIV prevalence in the 2–4% range, with little change over time. Nigeria, with a population of over 120 million, has the highest number of people living with HIV in West Africa. The national prevalence in 2003 was 5.4% (range: 3.6–8%). HIV prevalence among pregnant women ranges from 2.3% in the south-west region to 7% in the north-central region. Variation between states is even larger—from 1.2% in Osun to over 6% in Kaduna and to 12% in Cross River. HIV prevalence among pregnant women is over 1% in all states and is over 5% in 13 states.

North Africa and the Middle East

With the exception of a few countries, systematic surveillance of the epidemic is not well developed in North Africa and the Middle East. Furthermore, there is inadequate monitoring of the situation among populations at higher risk of HIV exposure, such as sex workers, injecting drug users and men who have sex with men. This means that potential epidemics in these populations are being overlooked.

In many countries, available information is based only on case reporting, and suggests that around 480 000 people (range: 200 000–1.4 million) are living with HIV in the region, which has a prevalence of 0.2% of the adult population (range: 0.1–0.6%). Some 75 000 people (range: 21 000–310 000) are believed to have become newly infected in 2003, and AIDS killed about 24 000 (range: 9900–62 000) that year. Among young people aged 15–24, 0.2% of women (range: 0.2–0.5%) and 0.1% of men (range: 0.1–0.2%) were living with HIV by the end of 2003.

Sudan is by far the worst-affected country in the region. Its overall HIV prevalence is nearly 2.3% (range: 0.7–7.2%); the epidemic is most severe in the southern part of the country. Heterosexual intercourse is the principal mode of transmission. The virus is spreading in the general population, infecting women more rapidly than men. Among pregnant women in the south, HIV prevalence is reported to be six-to-eight times higher than around Khartoum in the north. In Somalia, the epidemic is believed to have similar dynamics, but few surveillance data are available.

Morocco has expanded its surveillance system based on pregnant women and patients attending clinics for sexually transmitted infections, to also include sex workers and prisoners. In 2003, prevalence was 0.13% among pregnant women, 0.23% among patients at sexually-transmitted-infection clinics, 0.83% among prisoners and 2.27% among female sex workers.

In some countries in the region, HIV infection appears concentrated among injecting drug users. Substantial transmission through contaminated injecting equipment has been reported in Bahrain, Libya and Oman. However, there is insufficient behavioural and serosurveillance among injecting drug users, resulting in an incomplete picture of HIV spread.

Unsafe blood transfusion and blood-collection practices still pose a risk of HIV transmission in some countries of the region, although efforts are being made to expand blood screening and sterile procedures in health-care systems to full coverage. In addition, there is concern that the virus may be spreading undetected among men who have sex with men. Male-to-male sexual behaviour is illegal and widely condemned in the region and the lack of surveillance means that knowledge of the epidemic’s path in this population is poor.
Eastern Europe and Central Asia

Diverse HIV epidemics are under way in Eastern Europe and Central Asia. About 1.3 million people (range: 860 000–1.9 million) were living with HIV at the end of 2003, compared with about 160 000 in 1995. During 2003, an estimated 360 000 people (range: 160 000–900 000) in the region became newly infected, while 49 000 (range: 32 000–71 000) died of AIDS. Among young people aged 15–24, 0.6% of women (range: 0.4–0.8%) and 1.3% of men (range: 0.9–1.8%) were living with HIV by the end of 2003.

The main driving force behind epidemics across the region is injecting drug use—an activity that has spread explosively in the years of turbulent change since the demise of the Soviet regime. A striking feature is the low age of those infected. More than 80% of HIV-positive people in this region are under 30 years of age. By contrast, in North America and Western Europe, only 30% of infected people are under 30.

The Russian Federation has the largest number of people living with HIV in the region, estimated at 860 000 (range: 420 000–1.4 million). The picture is uneven; well over half of all reported cases of HIV infection come from just 10 of the 89 administrative territories. Most drug users in Russia are male. But the proportion of females among new HIV cases is growing fast—up from one in four in 2001, to one in three just a year later. The trend is most obvious in parts of Russia where the epidemic is oldest, and this suggests that sexual intercourse has been playing an increasing role in transmission. From 1998 to 2002, HIV infection levels among pregnant women in Russia increased from less than 0.01% to 0.1%—a 10-fold increase. However, in St Petersburg, HIV seroprevalence increased from 0.013% in 1998 to 1.3% in 2002—a 100-fold increase.
In Ukraine, drug injecting remains the principal mode of transmission, but sexual transmission is becoming increasingly common, especially among injecting drug users and their partners. However, an increasing proportion of those who become infected through unsafe sex have no direct relationship with drug users.

Recently, several Central Asian countries—notably, Kazakhstan, Kyrgyzstan and Uzbekistan—have reported growing numbers of people diagnosed with HIV, most of them injecting drug users. Central Asia is at the crossroads of the main drug-trafficking routes between East and West and, in some places, heroin is said to be cheaper than alcohol.

Throughout the region, estimates and trends are based almost exclusively on case reporting by the health services and the police, since there is little money or infrastructure for systematic surveillance. This raises concerns that HIV may be spreading among people who rarely come into contact with the authorities or testing services. For example, very little is known about how the epidemic affects men who have sex with men, since sex between men is widely stigmatized and rarely acknowledged. However, in Central Europe, sex between men is clearly the predominant mode of HIV transmission in the Czech Republic, Hungary, Slovenia and the Slovak Republic.

**Latin America**

Around 1.6 million people (range: 1.2–2.1 million) are living with HIV in Latin America. In 2003, around 84 000 people (range: 65 000–110 000) died of AIDS, and 200 000 (range: 140 000–340 000) were newly infected. Among young people 15–24 years of age, 0.5% of women (range: 0.4–0.6%) and 0.8% of men (range: 0.6–0.9%) were living with HIV by the end of 2003. In Latin America, HIV infection tends to be highly concentrated among populations at particular risk, rather than being generalized. In most South American countries, almost all infections are caused by contaminated drug-injecting equipment or sex between men. Low national prevalence is disguising some very serious epidemics. For example, in Brazil—the most populous country in the region, and home to more than one in four of all those living with HIV—national prevalence is well below 1%. But infection levels above 60% have been reported among injecting drug users in some cities. Moreover, the picture varies considerably from one part of the country to another. In Puerto Rico, more than half of all infections in 2002 were associated with injecting drug use, and about one-quarter were heterosexually transmitted.

In Central America, injecting drug use plays less of a role, and the virus is spread predominantly through sex. A recent international study shows that HIV prevalence among female sex workers ranges from less than 1% in Nicaragua, 2% in Panama, 4% in El Salvador and 5% in Guatemala, to over 10% in Honduras.
Among men who have sex with men, levels of
HIV infection appear to be uniformly high,
ranging from 9% in Nicaragua to 24% in
Argentina (see Figure 10).

Sex between men is the predominant mode
of transmission in several countries, notably
Colombia and Peru. However, conditions
appear ripe for the virus to spread more widely,
as large numbers of men who have sex with
men also have sex with women. Peru is a case
in point: in a survey of young men and women
(aged 18–29), 9% of men indicated that at
least one of their last three sexual partners was
a man and that condoms were not used in 70% of
those contacts.

**Caribbean**

Around 430 000 people (range: 270 000–
760 000) are living with HIV in the Caribbean.
In 2003, around 35 000 people (range: 23 000–59 000) died of AIDS, and 52 000
(range: 26 000–140 000) were newly infected.
Among young people 15–24 years of age, 2.9%
of women (range: 2.4–5.8%) and 1.2% of men
(range: 1.0–2.2%) were living with HIV by the
end of 2003.

Of the seven countries in the Caribbean region,
three have national HIV prevalence levels of at
least 3%: the Bahamas, Haiti, and Trinidad and
Tobago. Barbados is at 1.5% (range: 0.4–5.4%)
and Cuba’s prevalence is well below 1%. The
Caribbean epidemic is predominantly hetero-
sexual, and is concentrated among sex workers
in many places. But the virus is also spreading
in the general population. The worst-affected
country is Haiti, where national prevalence is
around 5.6% (range: 2.5–11.9%). However,
HIV spread is uneven: sentinel surveillance
reveals prevalence ranging from 13% in the
north-west of the country, to 2–3% in the south.

Haiti shares the island of Hispaniola with the
Dominican Republic, which also has a serious
HIV epidemic. However, in the Dominican
Republic, previously high prevalence has
deprecated, due to effective prevention efforts
that encouraged people to reduce the number
of sexual partners and increase condom use (see
Figure 11). Over 50% of males aged 15–29
used a condom with a non-cohabiting partner.
In the capital, Santo Domingo, prevalence
among pregnant women declined from around
3% in 1995 to below 1% at the end of 2003.
But high levels are still reported elsewhere, and
range from under 1% to nearly 5%. In 2000,
HIV prevalence among female sex workers
ranged from 4.5% in the eastern province
tourist centre of La Romana, to 12.4% in the
southern province of Bani.

**High-income countries**

An estimated 1.6 million people (range: 1.1–
2.2 million) are living with HIV in these
countries. Around 64 000 (range: 34 000–140 000)
became newly infected in 2003, and 22 000
(range: 15 000–31 000) died of AIDS. Among
young people 15–24 years of age, 0.1% of
women (range: 0.1–0.2%) and 0.2% of men (range: 0.2–0.3%) were living with HIV by the end of 2003.

In high-income countries, unlike elsewhere, the great majority of people who need antiretroviral treatment do have access to it. This means that they are staying healthy and surviving longer than infected people elsewhere. In the United States, deaths due to AIDS have continued to decline because people have broad access to antiretroviral therapy. There were 16 371 reported deaths in 2002, down from 19 005 in 1998. In Western Europe, the number of reported deaths among AIDS patients also continued to decline—from 3373 in 2001 to 3101 in 2002.

In the United States, about half of newly reported infections in recent years have been among African Americans. They represent 12% of the population, but their HIV prevalence is 11 times higher than among whites.

In New York City, a new system for tracking the epidemic began in June 2000. It added HIV infection reporting to the previously existing system of AIDS case reporting. A recently published analysis of the first full year of data from 2001 has revealed that over 1% of the city’s adult population, and almost 2% of Manhattan’s, are HIV-positive.

In many high-income countries, sex between men plays an important role in the epidemic. For example, it is the most common route of infection in Australia, Canada, Denmark, Germany, Greece, New Zealand and the United States.

In recent years, heterosexual transmission in the industrialized world has sharply increased. In several western European countries, including Belgium, Norway and the United Kingdom, the increase in heterosexual transmitted infections is dominated by people from countries with generalized epidemics, predominantly sub-Saharan Africa. Because the countries with the largest epidemics in Western Europe (Italy and Spain) do not yet have national HIV-reporting systems, it is unclear whether this trend is occurring in other regions of Western Europe.

Drug injecting plays a varying role in spreading HIV in high-income countries. In 2002, it accounted for more than 10% of all reported HIV infections in Western Europe (in Portugal it was responsible for over 50% of cases). In Canada and the United States, about 25% of HIV infections are attributed to drug injecting. Infections transmitted through contaminated injecting equipment are particularly frequent among indigenous people, who are often among the poorest and most marginalized inhabitants of the industrialized world.