AIDS epidemic update

December 2002

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UNAIDS - 20 avenue Appia - 1211 Geneva 27 - Switzerland
Telephone: (+41) 22 791 36 66 - Fax: (+41) 22 791 41 87
E-mail: unaids@unaids.org - Internet: http:/www.unaids.org

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AIDS epidemic update: December 2002

Global summary of the HIV/AIDS epidemic December 2002

Number of people living with HIV/AIDS	**Total**	**42 million**
	Adults	38.6 million
	Women	*19.2 million*
	Children under 15 years	3.2 million
People newly infected with HIV in 2002	**Total**	**5 million**
	Adults	4.2 million
	Women	*2 million*
	Children under 15 years	800 000
AIDS deaths in 2002	**Total**	**3.1 million**
	Adults	2.5 million
	Women	*1.2 million*
	Children under 15 years	610 000

INTRODUCTION

The AIDS epidemic claimed more than 3 million lives in 2002, and an estimated 5 million people acquired the human immunodeficiency virus (HIV) in 2002—bringing to 42 million the number of people globally living with the virus.

As the world enters the third decade of the AIDS epidemic, the evidence of its impact is undeniable. Wherever the epidemic has spread unchecked, it is robbing countries of the resources and capacities on which human security and development depend. In some regions, HIV/AIDS, in combination with other crises, is driving ever-larger parts of nations towards destitution.

The world stood by as HIV/AIDS swept through these countries. It cannot be allowed to turn a blind eye to an epidemic that continues to expand in some of the most populous regions and countries of the world.

Progress towards realizing the Declaration of Commitment

The Declaration of Commitment on HIV/AIDS is a potential watershed in the history of the HIV/AIDS epidemic. Adopted by the world's governments at the Special Session of the United Nations General Assembly on HIV/AIDS in June 2001, it established, for the first time ever, time-bound targets to which governments and the United Nations may be held accountable.

UNAIDS and its Cosponsors have established a set of yardsticks for tracking movement towards those targets. Work on the first report measuring progress against these indicators starts in 2003, and will be based on progress reports provided in March 2003 by the 189 countries that adopted the Declaration.

Already, though, there is substantial evidence of progress. More countries are recognizing the value of pooling resources, experiences and commitment by forging regional initiatives to combat the epidemic. Examples are multiplying, among them the following:

The Asia Pacific Leadership Forum, which is tasked with improving key decision-makers' knowledge and understanding of HIV/AIDS and its impact on different sectors of society.

Members of the Commonwealth of Independent States have developed a regional Programme of Urgent Response to the HIV/AIDS epidemic, which government leaders endorsed in May 2002.

In mid-2002, the Pan-Caribbean Partnership against HIV/AIDS signed an agreement with six pharmaceutical companies as part of wider-ranging efforts to improve access to cheaper antiretroviral drugs.

In sub-Saharan Africa, 40 countries have developed national strategies to fight HIV/AIDS (almost three times as many as two years ago), and 19 countries now have National AIDS Councils (a six-fold increase since 2000).

Additional resources are being brought to bear by the new Global Fund to Fight AIDS, Tuberculosis and Malaria, which has approved an initial round of project proposals, totalling US$616 million, about two-thirds of which is earmarked for HIV/AIDS. Governments and donors have pledged more than US$2.1 billion to the fund.

But the world lags furthest behind in providing adequate treatment, care and support to people living with HIV/AIDS. Fewer than 4% of people in need of antiretroviral treatment in low- and middle-income countries were receiving the drugs at the end of 2001. And less than 10% of people with HIV/AIDS have access to palliative care or treatment for opportunistic infections.

In many countries, especially in sub-Saharan Africa and Asia, competing national priorities inhibit allocation of resources to expand access to HIV/AIDS care, support and treatment. Unaffordable prices remain the most commonly cited reasons for the limited access to antiretroviral drugs. Insufficient capacity of health sectors, including infrastructure and shortage of trained personnel, are also major obstacles to health service delivery in many countries.

In Eastern Europe and Central Asia, the number of people living with HIV in 2002 stood at 1.2 million. HIV/AIDS is expanding rapidly in the Baltic States, the Russian Federation and several Central Asian republics.

In Asia and the Pacific, 7.2 million people are now living with HIV. The growth of the epidemic in this region is largely due to the growing epidemic in China, where a million people are now living with HIV and where official estimates foresee a manifold increase in that number over the coming decade. There remains considerable potential for growth in India, too, where almost 4 million people are living with HIV.

In several countries experiencing the early stages of the epidemic, significant economic and social changes are giving rise to conditions and trends that favour the rapid spread of HIV—for example, wide social disparities, limited access to basic services and increased migration.

Best current projections suggest that an additional 45 million people will become infected with HIV in 126 low- and middle-income countries (currently with concentrated or generalized epidemics) between 2002 and 2010—unless the world succeeds in mounting a drastically expanded, global prevention effort. More than 40% of those infections would occur in Asia and the Pacific (currently accounts for about 20% of new annual infections).

Pinning down HIV trends

The most common measure of the HIV/AIDS epidemic is the *prevalence* of HIV infections among a country's adult population—in other words, the percentage of the adult population living with HIV. Prevalence of HIV provides a good picture of the overall *state* of the epidemic. Think of it as a still photograph of HIV/AIDS. In countries with generalized epidemics, this image is based largely on HIV tests done on anonymous blood samples taken from women attending antenatal clinics.

But prevalence offers a less clear picture of recent *trends* in the epidemic, because it does not distinguish between people who acquired the virus very recently and those who were infected a decade or more ago. (Without antiretroviral treatment, a person might survive, on average, up to 9–11 years after acquiring HIV; with treatment, survival is substantially longer.)

Countries A and B, for example, could have the same HIV prevalence, but be experiencing very different epidemics. In country A, the vast majority of people living with HIV/AIDS (the prevalent cases) might have been infected 5–10 years ago, with few recent infections occurring. In country B, the majority of people living with HIV/AIDS might have been infected in the past two years. These differences would obviously have a huge impact on the kind of prevention and care efforts that countries A and B need to mount.

Similarly, HIV prevalence rates might be stable in country C, suggesting that new infections are occurring at a stable rate. That may not be the case, however. Country C could be experiencing higher rates of AIDS mortality (as people infected a decade or so ago die in large numbers), and an *increase* in new infections. Overall HIV prevalence rates would not illuminate those details of the country's epidemic.

So a measure of HIV *incidence* (i.e. the number of new infections observed over a year among previously uninfected people) would help complete the picture of current trends. Think of it as an animated image of the epidemic.

The problem is that measuring HIV incidence is expensive and complicated—to the point of it being unfeasible at a national level and on a regular basis in most countries.

None of this means, however, that recent trends are a mystery. Regular measurement of HIV prevalence among groups of young people can serve as a proxy, albeit imperfect, for HIV incidence among them. Because of their age, young people will have become infected relatively recently. Significant changes in HIV prevalence among 15–19- or 15–24-year-olds can therefore reflect important new trends in the epidemic.

The steadily dropping HIV prevalence levels in 15–19-year-olds in Uganda, for example, indicate a reduction in recent infections among young people, and provide a more accurate picture of current trends in the epidemic (and, in this instance, of the effectiveness of prevention efforts among young people).

REGIONAL HIV/AIDS STATISTICS AND FEATURES, END OF 2002

Region	Epidemic started	Adults and children living with HIV/AIDS	Adults and children newly infected with HIV	Adult prevalence rate (*)	% of HIV-positive adults who are women	Main mode(s) of transmission (#) for adults living with HIV/AIDS
Sub-Saharan Africa	late '70s early '80s	29.4 million	3.5 million	8.8%	58%	Hetero
North Africa & Middle East	late '80s	550 000	83 000	0.3%	55%	Hetero, IDU
South & South-East Asia	late '80s	6.0 million	700 000	0.6%	36%	Hetero, IDU
East Asia & Pacific	late '80s	1.2 million	270 000	0.1%	24%	IDU, hetero, MSM
Latin America	late '70s early '80s	1.5 million	150 000	0.6%	30%	MSM, IDU, hetero
Caribbean	late '70s early '80s	440 000	60 000	2.4%	50%	Hetero, MSM
Eastern Europe & Central Asia	early '90s	1.2 million	250 000	0.6%	27%	IDU
Western Europe	late '70s early '80s	570 000	30 000	0.3%	25%	MSM, IDU
North America	late '70s early '80s	980 000	45 000	0.6%	20%	MSM, IDU, hetero
Australia & New Zealand	late '70s early '80s	15 000	500	0.1%	7%	MSM
TOTAL		**42 million**	**5 million**	**1.2%**	**50%**	

* The proportion of adults (15 to 49 years of age) living with HIV/AIDS in 2002, using 2002 population numbers.
# Hetero (heterosexual transmission), IDU (transmission through injecting drug use), MSM (sexual transmission among men who have sex with men).

Such outcomes can be avoided. Implementation of a full prevention package by 2005 could cut the number of new infections by 29 million by 2010. It could also help achieve the target of reducing HIV prevalence levels among young people by 25% by 2010 (as set in the Declaration of Commitment on HIV/AIDS, which the world's governments adopted in June 2001). But any delay in implementing a full prevention package will slash the potential gains.

Responses that involve and treat young people as a priority pay off, as evidence from Ethiopia, South Africa, Uganda and Zambia shows. HIV prevalence levels among young women in Addis Ababa declined by more than one-third between 1995 and 2001. Among pregnant teenagers in South Africa, HIV prevalence levels shrank a quarter between 1998 and 2001. Prevalence remains unacceptably high, but these positive trends confirm the value of investing in responses among the young.

The future trajectory of the global HIV/AIDS epidemic depends on whether the world can protect young people everywhere against the epidemic and its aftermath.

Just as certain sectors of society are at particular risk of HIV infection, certain conditions favour the epidemic's growth. As the current food emergencies in southern Africa show, the AIDS epidemic is increasingly entangled with wider humanitarian crises. The risk of HIV spread often increases when desperation takes hold and communities are wrenched apart. At the same time, the ability to stall the epidemic's growth also suffers, as does the capacity to provide adequate treatment, care and support.

It is vital that HIV/AIDS-related activities become an integral part of wider-ranging efforts to prevent and overcome humanitarian crises, as this publication shows (see 'HIV/AIDS and humanitarian crises').

Asia and the Pacific

The window of opportunity for bringing the HIV/AIDS epidemic under control is narrowing rapidly in Asia.

Almost 1 million people in Asia and the Pacific acquired HIV in 2002, bringing to an estimated 7.2 million the number of people now living with the virus—a 10% increase since 2001. A further 490 000 people are estimated to have died of AIDS in the past year. About 2.1 million young people (aged 15–24) are living with HIV.

With the exception of Cambodia, Myanmar and Thailand, national HIV prevalence levels remain comparatively low in most countries of Asia and the Pacific. That, though, offers no cause for comfort. In vast, populous countries such as China, India and Indonesia, low national prevalence rates blur the picture of the epidemic.

Both China and India, for example, are experiencing serious, localized epidemics that are affecting many millions of people.

India's national adult HIV prevalence rate of less than 1% offers little indication of the serious situation facing the country. An estimated 3.97 million people were living with HIV at the end of 2001—the second-highest figure in the world, after South Africa. HIV prevalence among women attending antenatal clinics was higher than 1% in Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland and Tamil Nadu.

New behavioural studies in India suggest that prevention efforts directed at specific populations (such as female sex workers and injecting drug users) are paying dividends in some states, in the form of higher HIV/AIDS knowledge levels and condom use (see box). However, HIV prevalence among these key groups continues to increase in some states, underlining the need for well-planned and sustained interventions on a large scale.

The epidemic in China shows no signs of abating. Official estimates put the number of people living with HIV in China at 1 million in mid-2002. Unless effective responses rapidly take hold, a total of 10 million Chinese will have acquired HIV by the end of this decade—a number equivalent to the entire population of Belgium.

Officially, the number of reported new HIV infections rose about 17% in the first six months of 2002. But HIV incidence rates can soar abruptly in a country marked by widening socioeconomic disparities and extensive migration (an estimated 100 million Chinese are temporarily or permanently away from their registered addresses), with the virus spreading along multiple channels.

There is a vital need to expand activities that focus on people most at risk of infection. But targeted interventions alone will not halt the epidemic. More extensive HIV/AIDS programmes that reach the general population are essential.

Several HIV epidemics are being observed among certain population groups in various parts of this vast country. Serious localized HIV epidemics are occurring among injecting drug users in nine provinces, as well as in Beijing Municipality. The most recent reported outbreaks of HIV among injecting drug users have been in Hunan and Guizhou provinces (where sentinel surveillance among users has revealed HIV prevalence rates of 8% and 14%, respectively).

There are also signs of heterosexually transmitted HIV epidemics spreading in at least three provinces (Yunnan, Guangxi and Guangdong) where HIV prevalence in 2000 was as high as 11% among sentinel sex worker populations.

The onward sexual transmission of HIV by people who became infected when they sold their blood to collecting centres that ignored basic blood-donation safety procedures poses a massive challenge, as does the need to provide them with treatment and care. Signalling the gravity of the situation, one 2001 survey in rural eastern China found alarmingly high HIV prevalence—12.5%—among people who had donated plasma. Most of the country's estimated

Mixed lessons from India

A new national behavioural survey conducted in 2001–2002 in India highlights important facets of the country's bid to curtail its epidemic. The survey shows clearly that where interventions have occurred and been sustained, behavioural change has been possible. But it also points to the difficulties in reaching some key groups (such as men who have sex with men), and large sections of the wider population (notably women living in rural areas).

Countrywide, awareness of HIV/AIDS is high, with roughly three-quarters of adult Indians (aged 15–49) aware that correct and consistent condom use can prevent sexual transmission of HIV.

But, in general, awareness and knowledge of HIV/AIDS remain weak in rural areas and among women. More than 80% of urban men recognized the protective value of consistent condom use, compared to just over 43% of rural women. There are marked exceptions, though, such as in Andhra Pradesh and Kerala, where awareness levels among women and men are approximately the same. Yet, even in those states, women report low levels of condom use (37% and 22%, respectively)—an indication that many are not able to negotiate safer sex with male partners. The gender divide remains wide.

The survey data show that Indians who cannot read are six times less likely to use a condom during casual sex than are their compatriots who are educated beyond secondary school. And rural residents are half as likely as their urban peers to use a condom with casual partners.

Striking, too, are the high levels of awareness and knowledge about HIV/AIDS, and the evidence of high condom use among vulnerable populations in states that have mounted consistent prevention efforts. For example, Maharashtra is home to a longstanding, generalized epidemic. There, HIV/AIDS responses appear to have resulted in higher levels of awareness and behavioural change among female sex workers, their clients and injecting drug users (66%, 77% and 52% of whom, respectively, said they consistently use condoms—among the highest rates in India). This may have helped prevent the state's epidemic from spinning out of control.

Similarly, Gujarat's focused programmes have helped ensure that some three-quarters of female sex workers used condoms the last time they had sex with a commercial or casual partner. But the state also reminds that HIV/AIDS responses have to reach the wider population if the epidemic is to be kept under control. (Knowledge levels among women and rural inhabitants, for example, are very low: only about 8% had no misconceptions about how HIV is transmitted.) By contrast, where interventions for general *and* marginalized populations have taken place together—as in Kerala—they have helped keep HIV prevalence low.

The survey shows that a significant proportion of men who have sex with men in India also have sex with women (almost 31% had sex with female partners in a six-month recall period), and many (36% during a month's recall) have sex with commercial male partners—hitherto hidden facets of the epidemic. Condom use rates, though, were low both with commercial partners (39% during last sexual intercourse) and with female partners (36%). This points to the need for urgent action, given the potential for wider and more rapid HIV spread through such multiple sexual networks.

A major challenge for India now is that of rapidly expanding the coverage of its HIV/AIDS programmes to all vulnerable groups. Flanking that is the broader challenge of ensuring that the response reaches young, illiterate populations and rural communities, especially women.

(Based on Nationwide Behavioural Surveillance Survey of general population and high-risk groups, 2001–2002, National AIDS Control Organization, India/ORG MARG)

3 million paid blood donors live in poor rural communities, and those now living with HIV/AIDS in provinces such as Henan (as well as Anhui and Shanxi, where similar tragedies might have occurred) face limited access to health-care services while having to endure severe stigma and discrimination.

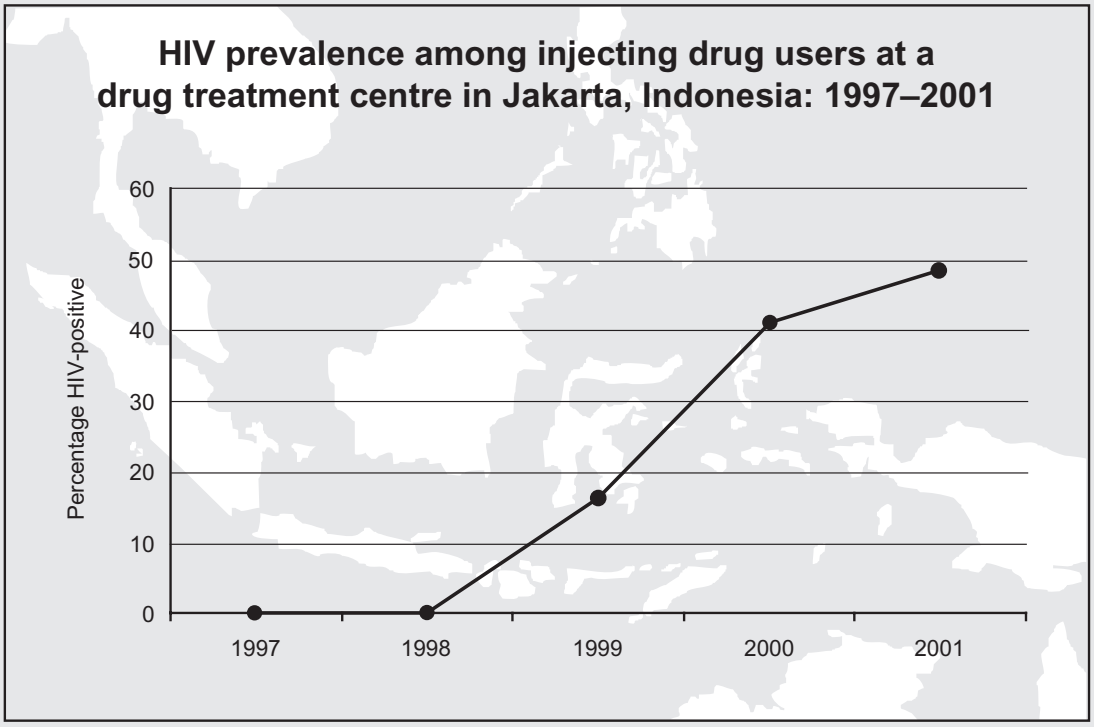
There is a clear need for urgent action. By expanding prevention, treatment and care efforts across the entire nation, China can avert millions of HIV infections and save millions of lives in the coming decade. The five-year AIDS action plan promulgated in mid-2001 signalled a growing commitment to take up that challenge, as did

A dangerous new trend in Indonesia

Recent social and economic upheavals in Indonesia appear to be fuelling a sharp rise in injecting drug use—and, with it, the risk of rapidly increasing HIV spread.

Virtually unknown in Indonesia just a decade ago, drug injection is now a growing phenomenon in urban areas. Official estimates suggest that between 124 000 and 196 000 Indonesians are now injecting drugs. And data from the largest drug treatment centre in Jakarta reveal that HIV prevalence is rising very steeply in this population, as the graph below shows.

National estimates indicate that some 43 000 injecting drug users are already infected with HIV. With needle-sharing the norm, HIV is likely to spread much more widely throughout this population in the next few years. If current high-risk injecting behaviour continues, it is estimated that the number of injecting drug users living with HIV could almost double in 2003, accounting for more than 80% of new HIV infections nationwide.



Source: RSKO hospital and Indonesian Ministry of Health, Directorate General of Communicable Disease Control and Environmental Health, 2002.

The vast majority of injectors are male, and behavioural data indicate that over two-thirds of them are sexually active. Already, an estimated 9000 women have been infected sexually by men who inject drugs.

the recent moves towards negotiating affordable antiretroviral treatment with pharmaceutical companies.

High HIV infection rates are being discovered among specific population groups (chiefly injecting drug users, sex workers, and men who have sex with men) in countries across the length and breadth of Asia and the Pacific.

Throughout the region, injecting drug use offers the epidemic huge scope for growth. Upwards of 50% of injecting drug users already have acquired the virus in parts of Malaysia, Myanmar, Nepal, Thailand and in Manipur in India, while HIV infections among Indonesia's growing population of injecting drug users is soaring (see box, page 9). Very high rates of needle-sharing have been documented among users in Bangladesh and Viet Nam, along with evidence that a considerable proportion of street-based sex workers in Viet Nam also inject drugs (a phenomenon detected in other countries, too). If the epidemic is to be stemmed, it is vital that injecting drug users gain access to harm reduction and other prevention services.

Male-to-male sex occurs in all countries of the region and features significantly in the epidemic. Countries that have measured HIV prevalence among men who have sex with men have found it to be high—14% in Cambodia in 2000 and roughly the same level among male Thai sex workers. Homophobia or dominant cultural norms mean that many men who have sex with men hide that aspect of their sexuality. Many might marry or have sexual relationships with women.

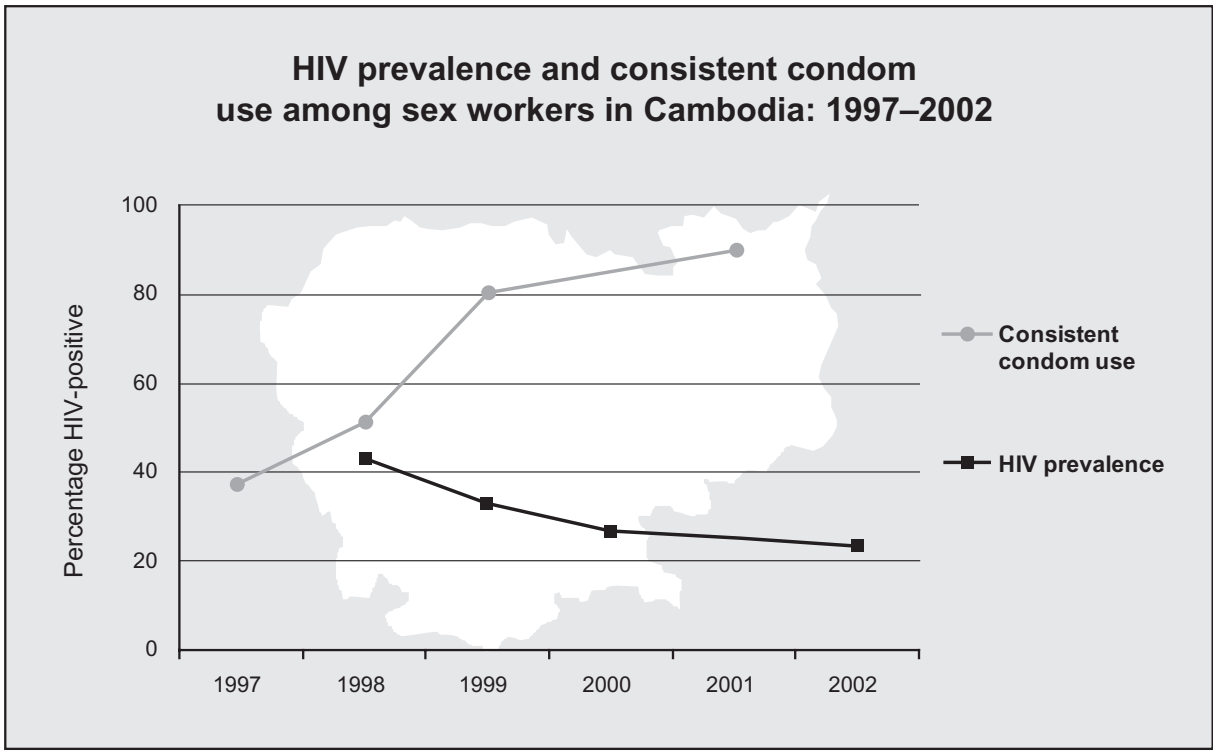
Among the Pacific Island countries and territories, Papua New Guinea has reported the highest HIV infection rates. New surveillance data reveal an HIV prevalence of 1% among women attending antenatal clinics in the capital Port Moresby, indicating that a broadened epidemic is under way in the city. Among people seeking treatment for other sexually transmitted infections in the capital, HIV prevalence was 7% in 2001 (double the level in 2000). Very low levels of condom use and wide sexual networking (amid low awareness and knowledge of HIV/AIDS) mean the country could be facing a severe epidemic.

Cambodia's epidemic appears to be stabilizing, thanks to sustained prevention programmes that link government and civil society and that span various sectors of society.

Heightening that prospect are findings that 85% of surveyed sex workers in Port Moresby and in Lae did not use condoms consistently in 2001, and that rates of other sexually transmitted infections ranged as high as 36%. There is a dire need for rapid expansion of prevention efforts.

In Thailand, meanwhile, recent modelling suggests that the main modes of transmission have been changing. Whereas most HIV transmission in the 1990s occurred through commercial sex, half of the new HIV infections now appear to be occurring among the wives and sexual partners of men who were infected several years ago. There are also indications that unsafe sexual behaviour is on the increase among young Thais. This underlines the need to expand and revitalize strategies that can prevent this highly adaptable epidemic from spreading further in Thailand. In addition, adequate treatment and care should remain a priority.

The Asian country with the highest adult HIV prevalence—Cambodia—has reported stabilizing levels of infection, along with still-decreasing levels of high-risk behaviour. HIV prevalence among pregnant women in major urban areas declined slightly from 3.2% in 1996 to 2.8% in 2002, according to the latest available data. Prevalence among sex workers declined from 42% in 1998 to 29% in 2002, according to the latest surveillance data, with the decline most pronounced among sex workers under 20.



Source: National Center for HIV/AIDS, Dermatology and STDs, Cambodia, 2002.

Given the high turnover of sex workers in Cambodia (almost three-quarters engage in sex work for less than two years), this steady decline suggests that prevention efforts focused on sex workers are yielding positive results among the succession of new entrants into sex work. Consistent condom use by sex workers appears to be the most important behavioural change achieved; it rose from 37% in 1997 to 90% in 2001.

Focussed efforts that protect vulnerable populations against HIV/AIDS are important and cost-effective. Alone, though, they cannot halt the epidemic. It is vital that AIDS responses everywhere extend also into the wider population, imparting the knowledge and providing the services that people need to protect themselves and each other against HIV/AIDS.

Given that many of the factors facilitating HIV transmission (including periodic economic upheaval and high rates of population mobility) are rife throughout this region, no country is immune to a rapidly spreading and wide-scale epidemic. Most countries, though, still have a window of opportunity for mounting and sustaining HIV/AIDS initiatives that could avert such an outcome.

Despite sweeping epidemics among injecting drug users, minimum services that can protect those drug users against HIV infection are not available in most of the region.

Eastern Europe and Central Asia

The epidemic continues to expand rapidly in most countries of this vast region.

The unfortunate distinction of having the world's fastest-growing HIV/AIDS epidemic still belongs to Eastern Europe and Central Asia. In 2002, there were an estimated 250 000 new infections, bringing to 1.2 million the number of people living with HIV/AIDS.

In recent years, the Russian Federation has experienced an exceptionally steep rise in reported HIV infections. In less than eight years, HIV/AIDS epidemics have been discovered in more than 30 cities and 86 of the country's 89 regions. Up to 90% of the registered infections have been attributed officially to injecting drug use, reflecting the fact that young people face high risks of HIV infection as occasional or regular drug injectors. Indeed, almost 80% of registered new infections in the Commonwealth of Independent States between 1997 and 2000 were among people younger than 29. In the Russian Federation, the total number of reported HIV infections climbed to over 200 000 by mid-2002—a huge increase over the 10 993 reported less than four years ago, at the end of 1998.

It must be noted that registered HIV cases likely underestimate the number of people living with HIV by a large margin. Indeed, the first community survey of injecting drug users—in Togliatti City—has revealed shockingly high HIV prevalence (see box). In addition, the reported cases might not accurately reflect the possible changes in the patterns of HIV transmission (in terms of the modes of transmission, and the gender and age groups of people who are being infected). The inadequacy of sentinel surveillance and voluntary counselling and testing services means that most HIV tests occur as part of routine screening of people who encounter the law enforcement system or use health-care services.

A huge problem slips into focus

A clearer picture of the HIV epidemic has emerged in the Russian city of Togliatti, revealing the true scale of the country's HIV/AIDS epidemic.

A study in late 2001 among injecting drug users recruited from their communities (the first of its kind in the Russian Federation) has revealed a very recent and explosive HIV/AIDS epidemic among injecting drug users in this city of 1 million inhabitants. Fully 56% of the users participating in the study were found to be HIV-positive, and a large share of them had acquired the virus in the previous two years. The survey revealed that three-quarters of those found to be living with the virus were unaware of their status. In addition, 40% of female sex workers who injected drugs did not use condoms consistently with their regular partners, and about 25% failed to do so with commercial sexual partners.

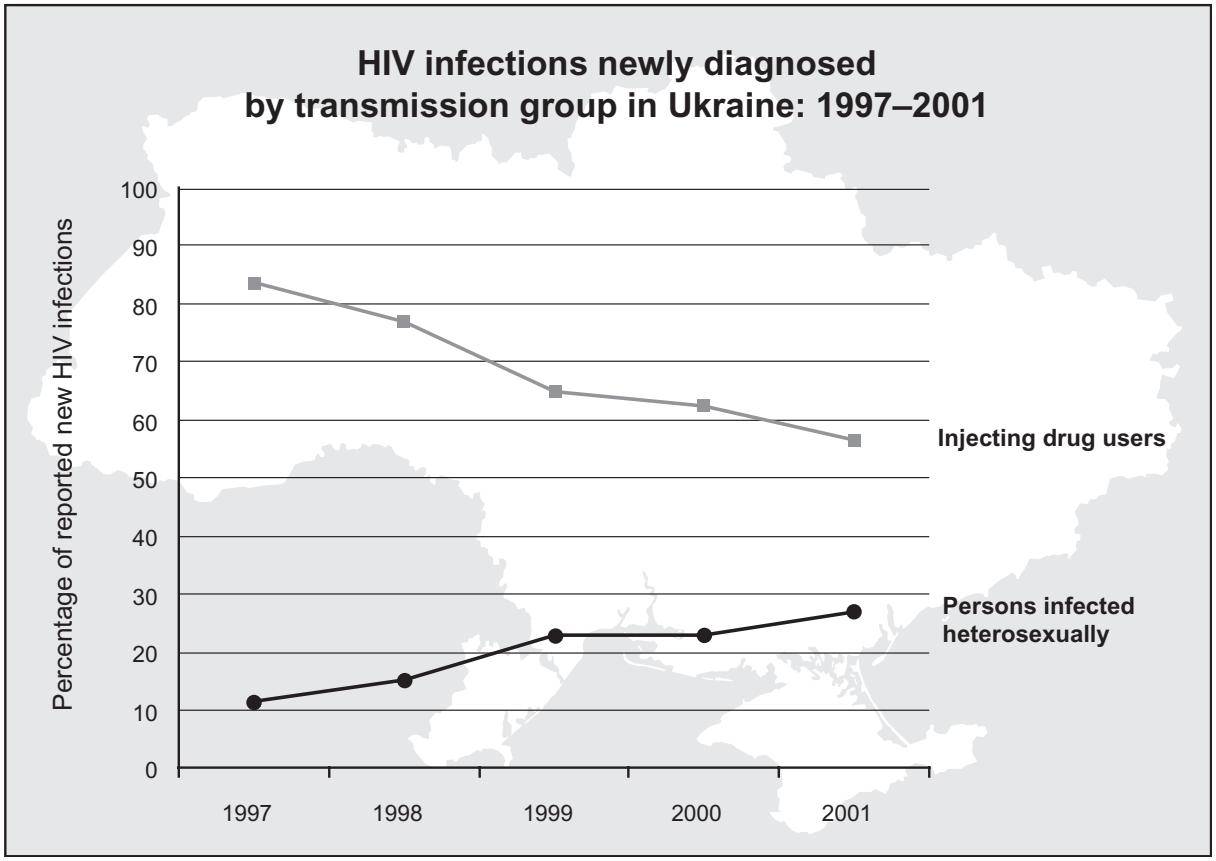
The study lends further credence to concerns that the HIV/AIDS epidemic in Russian cities could be considerably more severe than the already-high official statistics indicate. Harm reduction and other HIV prevention programmes have proliferated in the past two years; yet, their coverage remains narrow and, in cases like Togliatti City, inadequate. Authors of the study have stressed the need to expand access to sterile injecting equipment, and to step up efforts to reduce the risk of sexual transmission of HIV between injecting drug users and their partners.

Throughout Eastern Europe and Central Asia, young people are particularly hard-hit by the epidemic. It is estimated that up to 1% of the population of those countries is injecting drugs, placing these people and their sexual partners at high risk of infection. Those injecting drugs can be very young—some a mere 13–14 years old. One study among Moscow secondary-school students revealed that 4% had injected drugs.

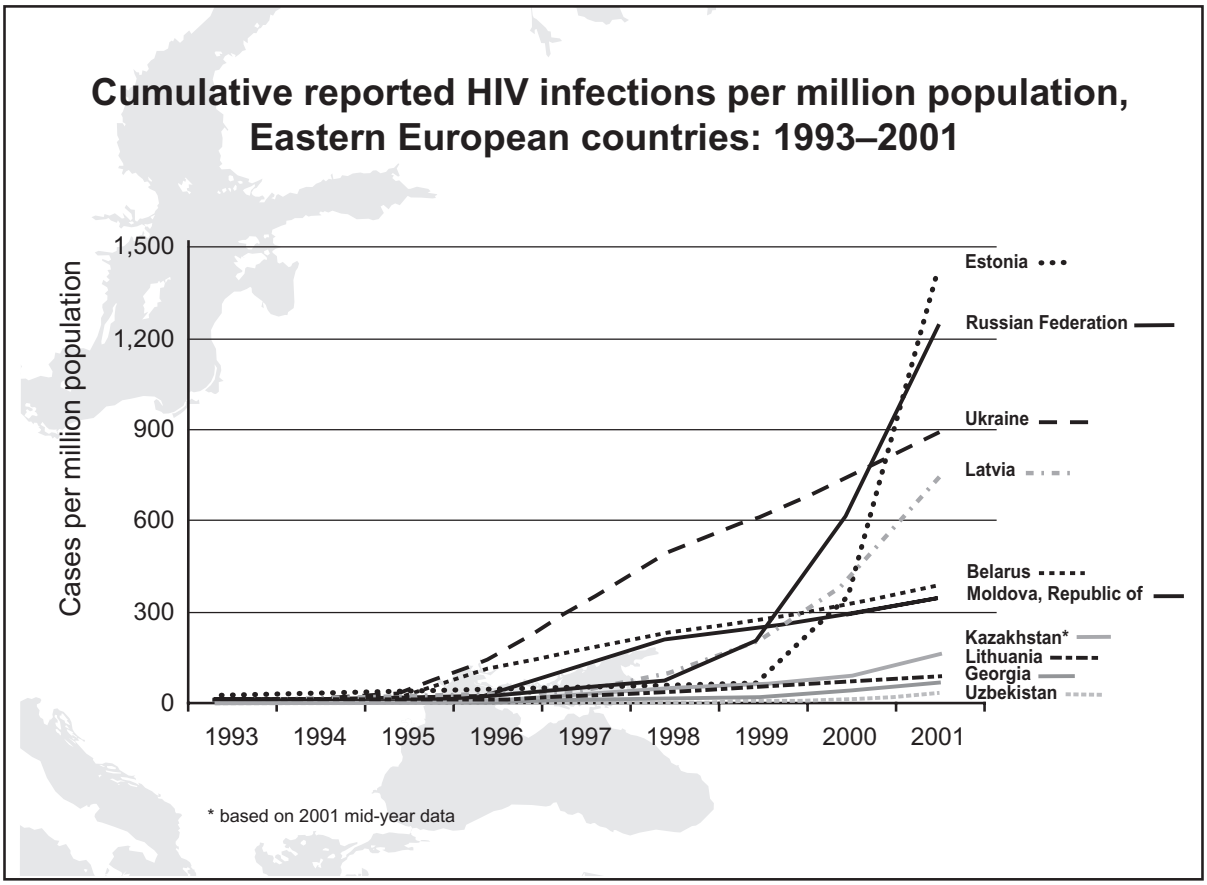
In the Russian Federation, and in many of the Central Asian Republics, the wave of injecting drug use is closely correlated with socioeconomic upheavals that have sent the living standards of tens of millions of people plummeting, amid rising unemployment and poverty levels. Another factor has been the four-fold increase in world production of heroin in the past decade, along with the opening of new trafficking routes across Central Asia.

The epidemic is growing in Kazakhstan, where a total of 1926 HIV infections had been reported by June 2001. More substantial spread of HIV is now also evident in Azerbaijan, Georgia, Kyrgyzstan, Tajikistan and Uzbekistan. In the latter two republics, recent evidence of rising heroin use heightens concerns that they could be on the brink of larger HIV/AIDS epidemics. Already, a steep rise in reported HIV infections has been noted in Uzbekistan, where 620 new infections were registered in the first six months of 2002—six times the number of new infections registered in the first six months of 2001.

Uzbekistan is experiencing explosive growth—in the first six months of 2002, there were almost as many new HIV infections as had been recorded in the whole of the previous decade.



Source: National AIDS Programmes. Data compiled by the European Centre for the Epidemiological Monitoring of AIDS. HIV/AIDS surveillance in Europe. End-of-year report 2001. Saint-Maurice: Institut de Veille Sanitaire, 2001. No.66.



Source: European Centre for the Epidemiological Monitoring of AIDS. HIV/AIDS surveillance in Europe. End-of-year report 2001. Saint-Maurice: Institut de Veille Sanitaire, 2001. No.66.

Reported HIV incidence is rising sharply elsewhere. In Estonia, reported infections soared from 12 in 1999 to 1474 in 2001. (Relative to population size, Estonia now has the highest rate of new HIV infections in this region—50% higher than the Russian rate). A burgeoning epidemic is visible, too, in Latvia, where new reported infections rose from 25 in 1997 to 807 in 2001, and where a further 308 new HIV cases had been registered by the end of June 2002.

The other Baltic State, Lithuania, is experiencing a major HIV outbreak in one of its prisons, where 284 inmates (15% of the total) were diagnosed HIV-positive between May and August 2002. This confirms the important, though often overlooked, role of prisons in the spread of HIV in many countries of the region. The concentration of large numbers of young people in overcrowded prisons or juvenile justice facilities, often marked by an abundance of drugs but a scarcity of HIV information, clean needles and condoms, provides fertile ground for the rapid spread of HIV among inmates and, upon their eventual release, into the wider population.

While injecting drug use among young people remains the predominant mode of HIV transmission in the Russian Federation and other countries of the region, heterosexual intercourse has now become a prominent mode of transmission in Belarus and Ukraine. The latter, with an estimated adult HIV prevalence rate of 1%, is the most affected country in the region (and, indeed, in all of Europe). New diagnoses of HIV in persons infected through heterosexual intercourse accounted for 28% of all new cases reported in the first six months of 2002—up from 15.3% in 1998 (see graph above).

In Belarus, the same proportion of new registered infections in 2001 was attributed to heterosexual transmission. Although many of these infections may occur in the sexual partners of injecting drug users, the trend may also indicate spread into the wider population of these countries.

In some cities of the Russian Federation and Ukraine, for example, up to 30% of female injecting drug users are also involved in commercial sex work. More generally, recent studies in Donetsk, Moscow and St Petersburg have revealed HIV prevalence rates of 13–17% among sex workers.

There is evidence that young people in several countries are becoming sexually active at an earlier age and that premarital sex is increasing. Yet, awareness and knowledge of HIV/AIDS remain dismal in many places. In Azerbaijan and Uzbekistan, for example, one-third of young women (aged 15–24) had never heard of AIDS, according to a 2001 survey.

Meanwhile, very high rates of sexually transmitted infections continue to be found in Eastern Europe and Central Asia, pointing to widespread unsafe sex and increased odds of HIV infection. In the Russian Federation, between 200 000 and 400 000 cases of syphilis are reported annually.

Men who have sex with men can face a significant risk of HIV transmission, especially where unsafe sex and injecting drug use overlap, as it appears to in some communities. A 2001 survey in Kazakhstan among men who have sex with men found that 9% also injected drugs and that only 3% regarded consistent condom use as the most effective way of protecting themselves against infection during sex. Recently, gay groups have started HIV prevention activities for men who have sex with men in Belarus, Ukraine and several Central Asian republics. Overall, though, coverage remains minimal.

In contrast, there is cause for moderate optimism in Central Europe, where countries continue to hold the epidemic at bay; HIV incidence overall remained exceptionally low in 2001 (7–10 reported infections per million persons). Prevalence remains low in countries such as the Czech Republic, Hungary, Poland and Slovenia, where well-designed national HIV/AIDS programmes are also in operation.

In Belarus and Ukraine, HIV/AIDS is steadily spreading into the wider population.

Recent, heartening efforts to boost HIV/AIDS efforts in Eastern Europe and Central Asia need to be expanded if the epidemic is to be brought under control. The regional Programme of Urgent Response launched by members of the Commonwealth of Independent States offers an important platform for progress at regional and national levels. So, too, do the partnerships that are being forged between governments, the private sector and nongovernmental organizations (following the earlier example set by Ukraine). Positive, too, are the wider efforts to expand access to treatment and care, including negotiations on price reductions for antiretroviral drugs, after the progress made in Moldova, Romania and Ukraine.

The challenge is to expand coverage, develop and implement more comprehensive approaches to reduce vulnerability among young people, and create better access to care for those who are becoming ill.

Sub-Saharan Africa

The annual number of new infections has remained steady, but it hides dynamic trends. In some countries, the epidemic is still growing, despite its severity. Others face a growing danger of explosive growth.

By far the worst-affected region, sub-Saharan Africa is now home to 29.4 million people living with HIV/AIDS. Approximately 3.5 million new infections occurred there in 2002, while the epidemic claimed the lives of an estimated 2.4 million Africans in the past year. Ten million young people (aged 15–24) and almost 3 million children under 15 are living with HIV.

A tiny fraction of the millions of Africans in need of antiretroviral treatment are receiving it. Many millions are not receiving medicines to treat opportunistic infections, either. These figures reflect the world's continuing failure, despite the progress of recent years, to mount a response that matches the scale and severity of the global HIV/AIDS epidemic.

A fully-fledged epidemic is only now taking hold in many African countries—as much greater numbers of people who acquired HIV over the past several years fall ill. In the absence of massively expanded prevention, treatment and care efforts, the AIDS death toll on the continent is expected to continue rising before peaking around the end of this decade. This means that the worst of the epidemic's impact on those societies will be felt in the course of the next decade and beyond. It is not too late to introduce and augment measures that can reduce that impact, including wider access to HIV medicines and socioeconomic policy steps that genuinely shield the poor against the worst of the epidemic's effects.

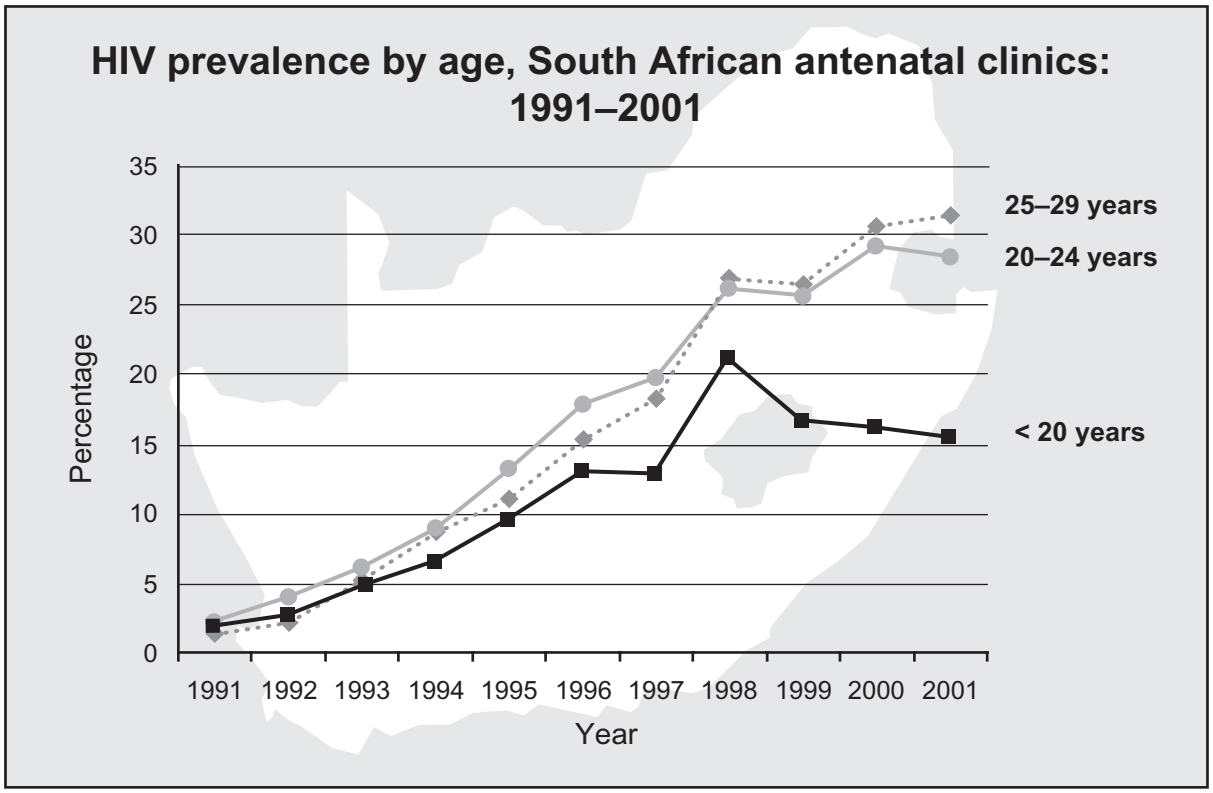
The worst of the epidemic clearly has not yet passed, even in southern Africa where rampant epidemics are under way. In four southern African countries, national adult HIV prevalence has risen higher than thought possible, exceeding 30%: Botswana (38.8%), Lesotho (31%), Swaziland (33.4%) and Zimbabwe (33.7%). As this report shows, the food crises faced in the latter three countries are linked to the toll of their longstanding HIV/AIDS epidemic, especially on the lives of young, productive adults.

Yet, there are new, hopeful signs that the epidemic could eventually be brought under control. Positive trends seem to be taking hold among younger people in a number of countries.

In South Africa, for pregnant women under 20, HIV prevalence rates fell to 15.4% in 2001 (down from 21% in 1998). This, along with the drop in syphilis rates among pregnant women attending antenatal clinics—down to 2.8% in 2001, from 11.2% four years earlier—suggests that awareness campaigns and prevention programmes are bearing fruit. A major challenge now is to sustain and build on such tentative success, not least because HIV infection levels continue to rise among older pregnant women, as the graph below shows.

A decline in HIV prevalence has also been detected among young inner-city women in Addis Ababa in Ethiopia. Infection levels among women aged 15–24 attending antenatal clinics dropped from 24.2% in 1995 to 15.1% in 2001 (however, similar trends were not evident in outlying areas of the city, nor is there evidence of them occurring elsewhere in the country).

Uganda continues to present proof that the epidemic does yield to human intervention. Recent HIV infections appear to be on the



Source: Summary Report, National HIV and Syphilis Sero-Prevalence Survey of Women Attending Public Antenatal Clinics in South Africa, 2001. Department of Health, South Africa, 2002.

decline in several parts of the country—as shown by the steady drop in HIV prevalence among 15–19-year-old pregnant women. Trends in behavioural indicators are in line with this apparent decline in HIV incidence. Condom use by single women aged 15–24 almost doubled between 1995 and 2000/2001, and more women in that age group delayed sexual intercourse or abstained entirely.

Elsewhere, in west and central Africa, the relatively low adult HIV prevalence rates in countries such as Senegal (under 1%) and Mali (1.7%) are shadowed by more ominous patterns of growth.

HIV prevalence is estimated to exceed 5% in eight other countries of west and central Africa, including Cameroon (11.8%), Central African Republic (12.9%), Côte d'Ivoire (9.7%) and Nigeria (5.8%)—sobering reminders that no country or region is shielded from the epidemic. The sharp rise in HIV prevalence among pregnant women in Cameroon (more than doubling to over 11% among those aged 20–24 between 1998 and 2000), shows how suddenly the epidemic can surge.

Evidence from Ethiopia and South Africa shows that prevention work is beginning to pay off for young women, with HIV prevalence rates dropping among pregnant teenagers.

While giving cause for optimism, these positive trends do not yet offset the severity of the epidemic in these countries. All of them face massive challenges not only in sustaining and expanding prevention successes, but in providing adequate treatment, care and support to the millions of people living with HIV/AIDS or orphaned by the epidemic.

Why do young African women appear so prone to HIV infection?

Despite recent positive trends among young people (especially females) in some African countries, overall about twice as many young women as men are infected in sub-Saharan Africa. In 2001, an estimated 6–11% of young women aged 15–24 were living with HIV/AIDS, compared to 3–6% of young men. This appears to be due to a combination of factors.

Women and girls are commonly discriminated against in terms of access to education, employment, credit, health care, land and inheritance. With the downward trend of many African economies increasing the ranks of people in poverty, relationships with men (casual or formalized through marriage) can serve as vital opportunities for financial and social security, or for satisfying material aspirations. Generally, older men are more likely to be able to offer such security. But, in areas where HIV/AIDS is widespread, they are also more likely to have become infected with HIV. The combination of dependence and subordination can make it very difficult for girls and women to demand safer sex (even from their husbands) or to end relationships that carry the threat of infection.

Studies have shown that young women tend to marry men several years older, and that their risk of infection increases if a husband is three or more years older than they are. Meanwhile, ignorance about sexual and reproductive health and HIV/AIDS is widespread. In countries with generalized epidemics in Africa, up to 80% of women aged 15–24 have been shown to lack sufficient knowledge about HIV/AIDS. This, combined with the fact that young women and girls are more biologically prone to infection (the cervix being susceptible to lesions), helps explain the large differences in HIV prevalence between girls and boys aged 15–19.

Massive efforts—from the world at large—are needed to bring treatment and care to the millions of Africans in need, and to cushion the epidemic's impact.

Nineteen African countries have set up national HIV/AIDS councils or commissions at senior levels of government, and local responses are growing in number and vigour. Across the region, 40 countries have completed national strategic AIDS plans—evidence of their determination to reach the targets outlined in the Declaration of Commitment on HIV/AIDS. Also encouraging is the active involvement of regional bodies, such as the Economic Commission for Africa, the Africa Union, and the Southern African Development Community, in tackling HIV/AIDS as a development issue.

Notwithstanding such progress, a lot of ground still needs to be made up. The vast majority of Africans—more than 90%—have not acquired HIV. Enabling them to remain HIV-free is a massive challenge, with the protection of young people a priority.

Treating and caring for the millions of Africans living with HIV/AIDS poses an inescapable challenge to the continent and the world at large. Relatively prosperous Botswana has become the first African country to adopt a policy to ultimately make antiretrovirals available to all citizens who need them. However, comparatively few people (approximately 2000) are currently benefiting from this commitment. In addition, a handful of companies (such as AngloGold, De Beers, Debswana and Heineken) have announced schemes to provide antiretrovirals to workers and some family members. These are valuable efforts. Measured against the extent of need, however, they are plainly inadequate.

Latin America and the Caribbean

There are indications that the epidemic could be stabilizing in the Dominican Republic.

The epidemics in Latin America and the Caribbean are well established. There is a danger that they could spread both more quickly and more widely in the absence of strengthened responses. An estimated 1.9 million adults and children are living with HIV in this region—a figure that includes the estimated 210 000 people who acquired the virus in 2002.

Twelve countries in this region (including the Dominican Republic and Haiti, several Central American countries, such as Belize and Honduras, and Guyana and Suriname) have an estimated HIV prevalence of 1% or more among pregnant women. In several Caribbean countries, adult HIV prevalence rates are surpassed only by the rates experienced in sub-Saharan Africa—making this the second-most affected region in the world. HIV/AIDS is now a leading cause of death in some of these countries. Haiti remains worst affected (with an estimated national adult HIV prevalence of over 6%) along with the Bahamas (where prevalence is 3.5%).

It should be noted, however, that the quality of surveillance systems varies widely across the region, making it possible that serious, localized epidemics in other parts of the region might be escaping detection.

Sentinel surveillance data from 1991 to 2001 suggest that HIV prevalence among pregnant women has stabilized or perhaps begun to

Fighting stigma and discrimination—the 2002–2003 World AIDS Campaign

HIV/AIDS-related stigma and discrimination rank among the biggest—and most pervasive—barriers to effective responses to the AIDS epidemic.

Stigma and discrimination target and harm those who are least able to enjoy their human rights: the poorest, the least educated, and the most marginalized. In fact, stigma, discrimination and human rights violations form a vicious circle, generating, reinforcing and perpetuating each other.

The outcome, in a world of AIDS, is life-threatening. Stigma and discrimination increase people's vulnerability and, by isolating people and depriving them of treatment, care and support, worsen the impact of infection.

This is why the 2002–2003 World AIDS Campaign is aimed at spurring worldwide efforts to remove the barriers of stigma and discrimination. Under the slogan, 'Live and let live', the World AIDS Campaign is:

- encouraging leaders at all levels, and in all walks of life, to visibly challenge HIV/AIDS-related discrimination, spearhead public action and act against the many other forms of discrimination that people face in relation to HIV/AIDS;
- involving people living with HIV/AIDS in the response to the epidemic;
- creating a positive legal environment for fighting discrimination;
- enabling people to challenge discrimination and receive redress through national institutions; and
- ensuring that prevention, treatment, care and support services are accessible to all.

decline in the Dominican Republic (where estimated adult HIV prevalence was 2.5% in 2001). These findings appear to correlate with evidence of increased condom use among female sex workers and a reduction in the number of sexual partners among men.

Over the past decade, the ratio of men with HIV infections to women with HIV infections has narrowed considerably—to about 3-to-1 in Latin America and 2-to-1 in the Caribbean. Paradoxically, men who have sex with men appear to feature prominently in the increasing feminization of the epidemic: recent research has shown that a large proportion of men who have sex with men also have sex with women. While HIV/AIDS programmes focusing on men who have sex with men are vital, sexual identities are more fluid than often assumed. Prevention efforts need to be tailored to apparently widespread—but hidden—bisexual behaviour in this region (as in many parts of Asia, too).

This is underscored by evidence that unsafe sex among men who have sex with men is rife across the entire region. For example, a recent study in two Honduran cities revealed an HIV prevalence level of 13%, very low rates of condom use, high numbers of sexual partners and low perceptions of risk. A seven-country study in Central America has revealed HIV prevalence rates of between 8% and 18% among men who have sex with men. Evidence of unsafe sex has emerged in a variety of studies in the Andean countries of South America, too. There, high HIV prevalence among men who have sex with men has ranged from 14% (Lima, Peru) to 20% (Bogotà, Colombia) and 28% (Guayaquil, Ecuador).

Most countries of the region have mounted prevention programmes oriented towards men who have sex with men. Their quality varies, however, and often depends on countries' legal contexts and the extent to which a wide range of social sectors is involved. Brazil offers a particularly positive example on this front, with prevention efforts directed also at countering the vulnerability, stigma and discrimination experienced by men who have sex with men. Other examples include the prevention, care and support activities in Jamaica and in Trinidad and Tobago. However, many such initiatives are impeded by discriminatory laws on homosexuality.

The spread of HIV through the sharing of injecting drug equipment is of growing concern in several countries, notably Argentina, Brazil, Chile, Paraguay and Uruguay (in South America), the northern parts of Mexico, and Bermuda and Puerto Rico (in the Caribbean). Injecting drug use accounts for an estimated 40% of reported new infections in Argentina and 28% in Uruguay; in both countries, an increasing number of women with HIV are either injecting drug users or sexual partners of male drug users.

Despite many constraints, the region has made admirable progress in provision of treatment and care, with Brazil continuing to show the way. Though now guaranteed in many countries, access to antiretroviral treatment is still unequal across the region, due largely to drug price discrepancies.

Like Argentina, Brazil has adopted a less punitive approach to dealing with the dual challenge of injecting drug use and HIV infection—to good effect. Prevention programmes among injecting drug users have contributed to a substantial decline in HIV prevalence in this population in several large metropolitan areas. In addition, a national survey has shown increasing condom use among injecting drug users (from 42% in 1999 to 65% in 2000)—a sign that sustained education and prevention efforts are bearing fruit. Argentina authorized its Ministry of Health to introduce a national policy on harm reduction in 2001, and is collaborating with Chile, Paraguay and Uruguay to set up similar schemes.

New light is being cast on a hitherto hidden dimension of the epidemic: HIV infection among prisoners. A study in three urban prisons

in Honduras has revealed an HIV prevalence of almost 7% among male prisoners in general, and almost 5% among those aged 16–20 years (who, because of their young age, are likely to have become infected relatively recently). Less than 10% of the men reported regular condom use. The likelihood that similar patterns of transmission could be occurring in other countries of the region underscores the need for both more research and more systematic programmes that can protect prisoners and their partners against HIV/AIDS. Despite a clear need for focused HIV prevention work among prison inmates, institutional barriers impede the development and evaluation of such programmes.

Among the factors helping drive the spread of HIV in the region overall is a combination of unequal socioeconomic development and high population mobility. Central America's worsening AIDS epidemic, for example, is concentrated mainly among socially marginalized sections of populations, many of whom are compelled to migrate in search of work and income. Unless overcome, the economic difficulties plaguing several countries in the region are likely to further entrench a socioeconomic context that can facilitate the epidemic's spread.

At the same time, though, countries' determination to stem the epidemic and limit its impact is more evident than ever—most obviously through their efforts to provide antiretroviral drugs to patients with HIV/AIDS-related illnesses. An estimated 170 000 people (most of them in Brazil) were receiving such treatment at the end of 2001. Countries such as Argentina, Costa Rica, Cuba and Uruguay now guarantee free and universal access to these drugs through the public sector, while sharp price reductions have recently been secured in Honduras and Panama. In mid-2002, the Pan Caribbean Partnership against HIV/AIDS signed an agreement with six pharmaceutical companies in a bid to improve access to cheaper antiretroviral drugs. However, actual access to these drugs remains unequal across the region as a whole, partly due to widely varying drug prices.

The Middle East and North Africa

Lingering denial among both social and political leaders in some countries provides the epidemic with an ideal environment for continued spread.

Available data point to increasing HIV infection rates, with an estimated 83 000 people having acquired the virus in 2002. This brings to 550 000 the estimated number of people living with HIV/AIDS. The epidemic claimed about 37 000 lives in 2002.

However, systematic surveillance remains inadequate, making it very difficult to deduce accurate trends. It is possible that hidden epidemics could be spreading in this region. Better surveillance systems (such as those introduced in Iran, Jordan, Lebanon and Syria) will enable more countries to accurately track the development of the epidemic and mount effective responses.

Significant outbreaks of HIV infections among injecting drug users have occurred in about half the countries in the region, notably in North Africa and in the Islamic Republic of Iran.

Unless countries promptly introduce harm reduction and other prevention services for injecting drug users, the epidemic could grow dramatically and spread into the wider population.

Other infected groups include men who have sex with men, sex workers and their clients. In Morocco, the National AIDS Control Programme has noted the relatively high prevalence of other sexually transmitted infections—a sign that unsafe sex is more common than routinely assumed.

Overall, recognition of the need for more effective and far-reaching prevention efforts has grown in this region. Some countries are fashioning potentially potent responses. Examples include the mobilization of nongovernmental organizations around prevention programmes in Lebanon, and harm-reduction work among injecting drug users in the Islamic Republic of Iran.

Poor surveillance systems in several countries of this region hinder an accurate assessment of the epidemic and the mounting of an effective response.

In Iran, most HIV transmission is occurring among the country's estimated 200 000–300 000 injecting drug users, about 1% of whom are believed to be living with HIV. High-risk behaviour is widespread in this largely male population: about half of the users share injecting equipment, and as many are believed to have extramarital sexual relations. According to some estimates, a significant percentage (more than 30%) of them is married. Yet condom use is very rare. In addition, about 10% of prisoners are believed to inject drugs and more than 95% of them share needles. HIV prevalence among imprisoned drug injectors was 12% in 2001.

But appropriate surveillance data on HIV infections and behaviours are in short supply, capacities are still limited, and HIV/AIDS responses are still concentrated almost exclusively in the health sector. A tendency to exaggerate the protective effects of social and cultural conservatism also continues to hamper an adequate response. In the absence of greater candour, political commitment and improved prevention programmes, wider HIV/AIDS spread can be anticipated.

HIGH-INCOME COUNTRIES

The epidemic continues to shift into marginalized populations that lack access to the services and information they need to protect themselves against HIV/AIDS.

Approximately 76 000 people became infected with HIV in high-income countries in 2002. A total of about 1.6 million people are now living with the virus in these countries, where an estimated 23 000 people died of AIDS in 2002.

Several salient changes have emerged in recent years. The introduction of antiretroviral therapy since 1995/1996 has dramatically reduced HIV/AIDS-related mortality, although this trend has begun to level off in the past two years. Longer survival of people living with HIV/AIDS has led to a steady increase in the number of people living with the virus in high-income countries. About 500 000 people were receiving these drugs at the end of 2001—in a context, however, where complacency has become pervasive and where prevention efforts have dwindled. Both counselling and prevention services need to be stepped up if an increase in HIV transmission is to be avoided.

A rise in unsafe sexual behaviour underscores the need to resist complacency and revitalize prevention programmes to access the millions of young people who reach sexual maturity each year.

A larger proportion of new HIV diagnoses (59% more overall between 1997 and 2001) in several Western European countries is occurring through heterosexual intercourse. More than half of the 4279 new HIV infections diagnosed in the United Kingdom in 2001 resulted from heterosexual sex, compared to 33% of new infections in 1998. In Ireland, a similar trend is visible, with the number of heterosexually transmitted HIV infections increasing fourfold between 1998 and 2001. Although injecting drug use remains the main mode of transmission in Spain, about one-quarter of all HIV infections have been heterosexually transmitted.

In the United Kingdom, as in some other European countries, a large share of heterosexually transmitted HIV infections are being diagnosed in persons who originate from, or who have lived in or visited, areas where HIV prevalence is high. Prevention, treatment and care activities need to become more culturally appropriate and socially relevant if they are to reach and benefit such diverse communities.

Most high-income countries are contending also with concentrated HIV epidemics, including in the United States of America where injecting drug use is a prominent route of HIV infection (accounting for 14% of all reported HIV diagnoses). Reported HIV prevalence among injecting drug users in Spain in 2000 was 20–30% nationwide, while, in France, prevalence rates ranged between 10% and 23%. Portugal's serious epidemic among injecting drug users accounted for more than half the newly diagnosed HIV infections in both 2000 and 2001, though the number of reported HIV infections among injecting drug users declined significantly in 2001.

Reported HIV infections among young people can indicate overall trends in incidence, since those persons are likely to have become exposed to HIV relatively recently. In the 34 areas of the United States with confidential HIV reporting, the bulk of HIV infections among 13–19-year-olds reported in July 2000–June 2001 were among females (56%), a disproportionate percentage of them African-American. Most young women had acquired the virus through heterosexual intercourse.

Latest available data show that the epidemic's shift into poorer and marginalized sections of society is continuing. African-Americans

accounted for an estimated 54% of new HIV infections in 2000 (but constitute only 13% of the population of the United States). According to a 2002 CDC report, AIDS-related illnesses remained the leading cause of death for African-American men aged 25–44 and the third-leading cause of death for Hispanic men in the same age group. (In Canada, meanwhile, aboriginal persons accounted for 9% of new HIV infections in 1999, although they constituted less than 3% of the general population.) HIV prevalence levels are exceptionally high among African-American men who have sex with men—up to 30% among 23–29-year-olds, according to one six-city survey. About 64% of the women diagnosed with HIV in 2001 in the United States were African-American. A significant number of these women acquired the virus from men who also have sex with men.

Heterosexual transmission of HIV accounts for an increasing share of new infections, with young, disadvantaged people at particular risk.

Sex between men remains a prominent transmission route in several countries, and accounts for a growing share of new infections in Japan. In most high-income countries, the almost-legendary successes achieved by, and among, men who have sex with men are clearly now a thing of the past.

HIV subtypes: moving targets

HIV has shown a remarkable ability to exploit and adapt to changes in the social environment. At the molecular level, also, the virus is constantly changing.

In order to map the genetic variation of HIV-1, scientists have classified different strains of the virus into three groups: M (main), O (outlier) and N (non-M, non-O).

The main group (M) is further classified into a number of subtypes, as well as variants resulting from the combination of two or more subtypes, known as 'circulating recombinant forms' (CRF). Subtypes are defined as having genomes that are at least 25% unique. Eleven subtypes have been identified and each is designated by a letter (subtype A or C and so on). When subtypes blend with each other (for example, when an individual is infected with two different HIV subtypes), and the resulting genetic blend successfully establishes itself in the environment, it is known as a CRF. So far, 13 CRFs have been identified.

To date, some subtypes have remained largely limited to certain geographic areas. Subtype C, for example, is widespread in southern Africa, India and Ethiopia. Subtype B is common in Europe, the Americas and Australia. But nearly all subtypes can be found in Africa, together with a number of CRFs.

These unique genetic forms of HIV are providing molecular epidemiologists with valuable tools for tracking the spread of the epidemic.

The subtypes have been studied long enough for some key trends to be revealed. Subtype C is the most common subtype, accounting for approximately 50% of all new HIV infections. Subtype A is the second-most prevalent variant of HIV-1. This subtype accounts for about 30% of HIV infections in the east of the continent, but 80% in West Africa.

In Eastern Europe, subtype A featured in the epidemic that began in Kaliningrad in 1995/96, while elsewhere subtype B spread among injecting drug users. Both variants have now re-combined into a new CRF, known as AB, which is spreading eastwards in that region.

Another recombinant form, CRF02_AG, is becoming prominent in West Africa—an area that had seen relatively stable HIV prevalence for several years, but where the epidemic recently began expanding rapidly (in Cameroon, for example). There, over 30% of new infections now involve CRF02_AG.

And, in China, three variants have been identified. Subtype E settled along the coast (likely because of the sexual liaisons of passing sailors), while subtype C probably arrived from India, and subtype B

Prevention efforts appear not to be reaching the large numbers of men among whom increases in unsafe sex are being mirrored by higher rates of sexually transmitted infections—in Australia, Canada, the United States and countries of Western Europe. Quite telling is the ongoing trend of increasing unsafe sex that has been documented among men who have sex with men in San Francisco, for example. A survey of self-reported sexual behaviour has shown increases in unprotected anal sex (32% to 38% between 1999 and 2001), much of it between serodiscordant partners (i.e., one partner is HIV-positive). The survey also found rising rates of other sexually transmitted infections among the respondents.

Underscoring the need for renewed prevention efforts, especially among young people, are recent findings of increases in high-risk behaviours, less frequent condom use and higher rates of sexually transmitted infections in several countries. In the United Kingdom, for example, rates of gonorrhoea, syphilis and chlamydial infections have more than doubled since 1995, while increases have been found in other Western European countries, too.

In Japan, where a record 621 people (most of them males) acquired HIV in 2001, the virus is spreading increasingly among young people. A reportedly growing trend of casual sex with multiple partners (known as *sukusutomo* or 'sex friends'), along with falling condom sales, suggests that new patterns of HIV spread could widen significantly. Nearly 40% of new HIV infections in 2001 were among people in their teens and twenties—a development that seems to match reports of increased rates of sexually transmitted infection among Japanese men (up 21% between 1998 and 2000) and women (up 14%) under 24.

initially circulated among injecting drug users. There is now evidence that B and C have re-combined and are spreading northwards in China.

It remains uncertain whether the existence of different subtypes has important implications for the transmissibility or treatment of HIV. Some scientists have postulated, for example, that the predominant strain in southern Africa is more aggressive than others. One study in the United Republic of Tanzania indicated that subtypes A and C might be more easily transmitted from mother to child. Another study claimed that female sex workers in Senegal were up to eight times more likely to develop AIDS when infected with subtypes C, D or G than with A. Studies elsewhere, however, have not confirmed such observations.

The good news is that nearly all subtypes identified so far are clearly responsive to antiretrovirals. While some studies have found some variation in the ways different subtypes and CRFs respond to antiretrovirals, there are other studies that have found no such differences. Further clinical evidence on whether different subtypes have different therapeutic implications (for example, in the combination of drugs used or in dosages), awaits a substantial increase in clinical access to antiretrovirals among populations where subtypes other than B predominate.

However, as well as variation between populations, HIV is constantly mutating within individuals, and this has important clinical and public health implications. Together with 'natural' variation, HIV genes also mutate in response to external pressures, such as the immune response a person's body musters or the use of antiretroviral drugs.

Since 1995/1996, when antiretrovirals were widely introduced, an increase in resistance mutations in newly infected people has been reported in the Americas and Europe. New multidrug-resistant strains are now being documented.

The genetic variability of HIV is one reason vaccine development has been such a scientific challenge. Some potential vaccines may work only against particular subtypes, so subtyping has influenced vaccine testing. In Thailand, for example, an experimental vaccine was modified when molecular epidemiologists reported that the dominant subtype B had been replaced with another—subtype E—in a population of injecting drug users among whom the trial was to be conducted. The vaccine-makers modified the vaccine by including two vaccine components, targeting both subtypes.

The hope now is that vaccine scientists can discover aspects of the virus that are consistent enough for a vaccine to provoke an effective immune response against multiple variants of HIV. If such viral features are found to exist, hope for a broadly effective vaccine grows. That search, however, continues.

HIV/AIDS AND HUMANITARIAN CRISES

Weakened by AIDS, traditional coping strategies become too frail to deal with further crises

Humanitarian crises take many forms. Some involve violent conflict. Others result from a combination of natural and man-made disasters. Invariably they threaten lives through food shortages, and loss of shelter and basic security—on a scale and with a severity that defy people's capacities to cope.

Increasingly, it is becoming evident that the HIV/AIDS epidemic can be a potent factor in such crises. Indeed, the current food emergencies in southern Africa highlight the potentially dynamic interplay between HIV/AIDS and other crises—and the need to tackle them in unison.

In countries and communities where the prevalence of HIV is very high, the epidemic already constitutes a major crisis. Millions have died. If current trends continue, millions more will suffer the same fate.

Longstanding, severe epidemics are plunging millions of people deeper into destitution and desperation as their labour power weakens, incomes dwindle, assets shrink and households disintegrate. Weakened by AIDS, traditional coping strategies become too frail to cope with further threats such as armed conflict, crop failures or natural disasters. As is now evident in southern Africa, an ensemble of setbacks can then converge to create a crisis.

The epidemic can rob households and communities of the capacity to produce or afford food, turning a food shortage into a food crisis. If such an emergency is allowed to persist, it can generate further social displacement, disrupting education and health systems, spurring migration, and worsening the sexual exploitation of women and children—all factors that favour the further spread of HIV/AIDS.

But these are not inevitable outcomes. Human action and inaction have abetted them. Human action can also prevent them.

HIV/AIDS AND SOUTHERN AFRICA'S FOOD CRISIS

The food emergencies sweeping through southern Africa highlight how vulnerable many countries are to shocks that disrupt food production and consumption. In each of the affected countries, the HIV epidemic itself constitutes a shock of considerable proportion.

As 2002 draws to a close, an estimated 14.4 million people are at risk of starvation in the six worst famine-affected countries: Lesotho, Malawi, Mozambique, Swaziland, Zambia and Zimbabwe.

A chain of links

The food-related crisis in southern Africa is not simply a 'natural' disaster caused by unfavourable weather patterns. It stems also from a complex web of mishaps and policy mistakes, which varies from country to country. Drought or floods; mismanagement and poor governance; misguided market reforms; a lack of extension and other support services for stricken farmers; the removal of consumer protection (allowing food prices to rocket as an emergency worsens); and political instability are among the factors involved. So is the HIV/AIDS epidemic—in every country now facing a food emergency.

Where the resulting lack of availability of, or access to, affordable food is greatest, the prevalence of HIV is also alarmingly high: adult HIV prevalence rates range from 15% in Malawi to 33% in Swaziland and Zimbabwe.

Since the major drought that swept across southern Africa in 1992, this subregion has become home to the worst HIV/AIDS epidemic in the world. Almost 15 million people in southern Africa were living with HIV at the end of 2001; an estimated 1.1 million died of AIDS last year, the majority of them in their productive prime.

According to the United Nations Food and Agricultural Organization (FAO), seven million agricultural workers in 25 severely affected African countries have died from AIDS since 1985. It warns that 16 million more could die in the next 20 years if massive and effective programmes are not mounted.

Generally, households are able to achieve food security when they can produce sufficient amounts of nutritious food, earn enough cash income to purchase food, sell or barter assets for food in hard times, and rely on social support networks for assistance. The HIV/AIDS epidemic is eroding each of these coping methods. It reduces households' capacities to produce and purchase food, depletes their assets, and exhausts social safety nets.

The mounting toll

As the impact of the epidemic grows more severe, it strips households and communities of valuable labour power. Adults become ill and less able to attend to agricultural and other work, including wage labour. Some 60% of commercial and smallholder farmers in Namibia told researchers in 2001 that they had suffered labour losses due to HIV/AIDS. Others—typically women and children—are also drafted in to care for the ill, thereby reducing the time and energy they can devote to paid labour or farming tasks. In badly affected areas, regular funeral duties can have similar effects.

The agricultural output of family-based farmers and their supplementary incomes from wage and

Focus on Malawi

Early in 2002, Malawi crossed the divide that separates seasonal food shortages from a full-scale food emergency that threatens more than 3 million people. The crisis is said to be the worst in living memory, with older farmers comparing it to that which followed the disastrous drought of 1949/1950.

Adverse weather conditions rank among the factors—including the HIV/AIDS epidemic—that have helped stoke this humanitarian crisis. The decision to sell off grain reserves left Malawi with hardly any safety net when crops failed. The scaling back of a successful free-seeds-and-fertilizer programme contributed to a slump in food production, while other government programmes that had supported farmers in growing and marketing their harvest have also been cut back. Underlying causes include chronic and deepening poverty, skewed access to land, poor management of farming resources, over-reliance on a single food crop (maize), and high levels of inflation.

Malawi's longstanding and severe HIV/AIDS epidemic is a powerful contributing factor to the food crisis in this country, where an estimated 70% of hospital deaths are now AIDS-related, and where some 470 000 children under the age of 15 have been orphaned by AIDS.

The epidemic has wrought drastic demographic changes in farming communities, with families now increasingly headed by women, children or grandparents. Many of them lack the skills and labour power to farm successfully. A 2002 field study in Malawi, carried out by FAO and the World Food Programme, identified a range of links between the epidemic and the onset of household food insecurity. These include the loss of able-bodied labour in households, the loss of remittances from working family members, the additional challenge of caring for orphans, child-headed families, and increased expenditures on health care and funerals.

Another 2002 study in central Malawi has shown that about 70% of surveyed households have suffered labour losses due to sickness. The study also found that more than 50% of poor households affected by chronic illnesses, such as HIV/AIDS, delayed their own farming in order to try to earn cash incomes elsewhere to cover basic expenses. Such delays usually reduce agricultural yields; in dry regions, it may mean no yield at all. In addition, opportunities for piecemeal cash labour are in short supply.

The epidemic is also sapping the government's capacity to support small-scale farmers. Despite increasing mortality among extension workers, the training and recruitment of replacement workers all but halted in 1995.

other paid labour—so vital to food security in many low- and middle-income countries—cannot be sustained in such circumstances. Fields are more likely to be left fallow and smaller areas kept under cultivation, weeding is neglected, infrastructure (such as fences and irrigation ditches) falls into disrepair, and pest-control becomes too expensive.

Studies in east and southern Africa show that households make several adjustments in order to cope. In some cases, they switch from labour-intensive cash crops to less demanding and fast-maturing food crops. In central Malawi, for example, about a quarter of poor households have been switching their crop mixes, abandoning certain crops or leaving land fallow if household members are seriously ill.

The rewards, though, can be meagre, especially if other setbacks occur. Overall, these adjustments often lead to falling farming incomes, which, in turn, limit the ability to purchase food at market prices. In Kenya, for example, the death of a household head was associated with a 68% reduction in the net value of farming output—largely because labour losses had forced farmers to cultivate much smaller areas of land. In Zimbabwe, another study found that output on smallholder farms shrank by 29% for cattle, 49% for vegetables and 61% for maize if the household had suffered an AIDS-related death.

As income from farming activity shrinks, women and children often have to seek wage labour, which, in most countries of southern Africa, is in short supply. It becomes even tougher to cope, as a result. Usually, household and other assets constitute valuable insurance in rural communities. In times of hardship, such as during poor harvests, these can be sold or exchanged—enabling people to purchase food, for example. But HIV/AIDS-affected households are forced to dispose of those assets as medical, funeral and other expenses mount.

In sub-Saharan Africa, women and girls make up the majority of those living with HIV/AIDS. They are also responsible for 50–80% of food production, including the most labour-intensive work, such as planting, fertilizing, irrigating, weeding, harvesting and marketing. Their work also extends to food preparation, as well as nurturing activities. The epidemic upends this division of labour—often with disastrous results.

Research in the United Republic of Tanzania has shown that women spend up to 60% less time doing farm work when their husbands are seriously ill. And when a husband dies, the wife may lose access to credit, agricultural inputs and distribution networks, and may even forfeit her rights to the land, house, livestock and other assets she had helped to develop and maintain.

The illness or death of an adult female can also threaten food security, often leading to the dissolution of the family. A survey carried out in two Zimbabwean districts in 2000 revealed that two-thirds of households that had lost a key adult female had disintegrated and dispersed.

The early death of farming parents disrupts the transfer of knowledge and skills from generation to generation. Children growing up as orphans have fewer opportunities to learn how to use and sustain land and to prepare nutritious food for family members. The widespread loss of this intangible, but essential, good could have severe and long-lasting consequences for food security in the region. At the moment, very few steps are being taken to counter this growing reality.

The sum effect is that multiple deaths and widespread hardship are steadily dissolving the traditional safety nets that, in the past, enabled households and communities to weather periodic adversity.

Children and orphans

Children in households beset by illness and lack of food are severely affected. As parents fall ill and die, family burdens shift to the children. For many, neither money nor time is available for normal schooling to continue. Opting out of school may help with cash needs over the short term but, in the long term, it entrenches the household's poverty and puts the children at greater risk of becoming infected with HIV. The result is a vicious circle linking poverty, food insecurity and HIV/AIDS.

Food insecurity also fuels the epidemic

Hunger and malnutrition are occurring in a region where access to HIV medicines is extremely rare. In such circumstances, good nutrition offers one of the few bulwarks against AIDS-related illnesses and early death. Yet it, too, can be a luxury; in September 2002, for example, it was reported that several patients were refusing to be discharged from a Zambian hospital (in Choma District Hospital), for fear of dying of hunger at home.

The food crisis also threatens to intensify and prolong the epidemic—by reinforcing some of the conditions in which the odds of HIV transmission increase. Bereft of food, people are compelled to adopt survival strategies that might further endanger their lives. Some migrate, often to urban slums where they are likely to live in marginalized circumstances and lack access to education and health facilities (including HIV prevention and care services). Women and children are being forced, as a last resort, to barter sex for jobs, food and other basic essentials. Large numbers of children are leaving school to find work or forage for food. Communities and social networks are breaking down. HIV/AIDS thrives amid such social displacement and disintegration.

Coping with the crisis

Addressing the crisis requires an integrated response that prioritizes food assistance; expands HIV/AIDS prevention, treatment and care services; provides more support (such as subsidies and quick-response distribution schemes) to save the most vulnerable households (those headed by women, children and the elderly) from destitution or disintegration; and puts in place longer-term strategies that boost the lives and livelihoods of the rural poor.

United Nations agencies have launched a joint appeal to assist those facing famine in southern Africa, requesting more than US$600 million from donors, including US$507 million for food aid through the Emergency Operation of the World Food Programme (WFP).

Already some relief operations are targeting the most vulnerable families, such as those affected by HIV/AIDS and those headed by women, children and the elderly. For example, in Lusaka, Zambia, where some 85% of the families living in the low-income outskirts of Lusaka are caring for orphans, WFP and local nongovernmental organizations are running urban school-feeding programmes to help children orphaned by AIDS to stay in school and to enable AIDS-affected families to cope with rising food prices. Many of the programmes mounted by the International Federation of Red Cross and Red Crescent Societies (IFRC), such as food distribution schemes, also target households affected by HIV/AIDS.

Working with the WFP, UNICEF is involved in several activities in affected countries, providing food to vulnerable children and households (including cooked meals at schools), mobilizing replacements for teachers lost to AIDS, advocating the elimination of school fees, and supporting HIV/AIDS education projects for humanitarian workers, as well as for truck drivers, the police and the military.

It is also evident that the long-term, structural factors fuelling such crises need to be redressed. Such measures would vary from country to country, but could include:

- improving access to affordable agricultural seeds, fertilizers and other inputs;
- providing equal access for women to health care and education, credit schemes, agricultural support programmes, and equality in employment, marital laws and inheritance;
- introducing income-generating projects, including public works schemes, so that households can replenish income losses;
- ensuring that the human capacity to provide agricultural extension programmes is maintained; and
- assessing the impact of policy adjustments—including agricultural, trade and macroeconomic interventions—on food security prospects and communities' capacities to avoid or cope with crises such as the HIV/AIDS epidemic.

HIV/AIDS IN CONFLICT SETTINGS

The food emergencies in southern Africa highlight the interplay between HIV/AIDS and humanitarian crises—and the urgent need to adapt responses to this reality. But there are other instances where this linkage is neither sufficiently appreciated nor addressed.

Wars and armed conflict typically spiral into wider humanitarian crises as civilians are targeted or trapped in the crossfire, driven from their homes and towns, and left to fend with the elements, hunger and disease.

In the past decade, no region of the world has escaped serious armed conflict. The number of states engaged in war more than doubled from 11 in 1989 to over 22 last year. At the end of 2001, there were almost 20 million refugees and displaced persons in the world, according to the United Nations High Commissioner for Refugees (UNHCR). A large number of these people are displaced in, or flee to, countries where HIV prevalence is high.

These conflicts generate and entrench many of the conditions and the human rights abuses in which the HIV/AIDS epidemic flourishes. Poverty, powerlessness and social instability, all of which can facilitate HIV transmission, are exacerbated during wars and armed conflict. Physical and sexual violence, forced displacement and sudden destitution, the collapse of social structures and the breakdown of rule of law can put people at much greater risk of HIV infection.

A well-documented example is that of Rwanda, where genocide and war stoked an HIV/AIDS epidemic that spread from cities to the countryside. Prior to the 1994 genocide, studies had shown HIV prevalence rates to be high in some urban areas (10% and higher) but low (just over 1%) in rural areas. By 1997, a well-designed survey revealed a HIV prevalence of about 11% in both urban and rural populations. During the genocide, more than 3% of women had been raped, almost half of them teenagers. (Of the women who had been raped, 17% tested HIV-positive, compared to 11% of those who had not been raped).

Indeed, rape is frequently used as a weapon of war and terror, primarily against women and girls. In the Balkan conflict, for example, an estimated 30–40 000 women were raped. A study in 2001 found that 9% of women displaced by armed conflict in 1997–1999 in Sierra Leone (50 000–64 000 women) had been sexually assaulted by combatants. The study concluded that war-related rape and other forms of sexual violence were committed on a widespread basis among internally displaced persons. A 1998 study revealed that the prevalence of war-related sexual assault was even higher in Liberia—15%.*

The mixing of civilians with armed forces increases the risk of HIV transmission, particularly in times of conflict. UNAIDS estimates that HIV infection rates among armed forces personnel are, on average, higher than among their civilian counterparts. For example, a study in Uganda in 1997 found that the national adult prevalence rate was 9.5%, while prevalence among Ugandan soldiers was 27%.

Conflicts invariably disrupt access to basic necessities, and fragment families, forcing people to become displaced as they flee in search of security and sustenance. Amid such desperation, people (especially women and girls) are more prone to the sexual predation of men who can control access to property, food, shelter and protection. In the eastern and central parts of war-ravaged Sudan, for example, studies have shown that about a quarter of single mothers were selling sex in order to survive. Studies carried out in Sierra Leone in 1995, for example, revealed that female sex workers in Freetown had HIV infection rates of 26.7%. By 1997, with much of the country embroiled in fighting, rates had soared to 70.6%.

The cessation of fighting does not necessarily remove the heightened risk of HIV/AIDS spread. Typically, armies are demobilized without HIV testing, counselling or education, despite the fact that returning HIV-positive soldiers could place their sexual partners at serious risk of infection.

There is a serious lack of reliable, contemporary data on the spread of HIV in conflict settings. This is not surprising. Health systems are often severely damaged during armed conflict; in recent decades, hospitals and clinics, along with doctors and other medical personnel, have

*The statute of the International Criminal Court has declared rape a crime against humanity.

been deliberately targeted by warring parties. As a result, the systems and structures (such as sexually transmitted infection and antenatal care clinics), normally used for sentinel surveillance, are often in disrepair. In Sierra Leone, almost two-thirds of rural health units were not functioning a year ago.

The paucity of reliable data hinders a better understanding of the complex ways in which HIV/AIDS takes root—or perhaps even fails to become lodged—in conflict settings. In the Balkans, for example, many of the risk factors commonly associated with HIV spread—mass displacement, sexual violence, large numbers of returning combatants and refugees, trafficking of women and more—have been present over the past decade. Yet available data show very low rates of HIV infection in this region. This may be due to the low level of HIV prevalence at the start of the conflict in the Balkans, or to other factors that are not yet fully understood.

Elsewhere, data collated from antenatal sentinel surveillance in eight Tanzanian refugee camps in 2001 indicated that median HIV prevalence among refugee women attending antenatal clinics was lower than in the women's countries of origin and the country in which the camps were located.

Clearly, better data collection, and more research and analysis are urgently needed to establish a better understanding of what countervailing factors might be at work in some settings.

The response from governments, donors, United Nations agencies and nongovernmental organizations to the dangers of HIV/AIDS spread in complex emergencies has been uneven. In camps of displaced persons where workers are hard-pressed to provide basic needs (such as food and shelter), health information and condoms are often unavailable, as are more sophisticated services such as those aimed at preventing mother-to-child transmission of HIV.

In some long-term and more stable refugee settings, however, sentinel surveillance is being carried out, and services that surrounding communities may often lack, such as voluntary counselling and testing, as well as prevention of mother-to-child transmission services, are being provided.

Recent moves promise to extend such improvements. Agreements have been reached with all humanitarian agencies to integrate HIV/AIDS components into their relief work. UNHCR, WHO and UNAIDS have developed a 'minimal initial services package' (MISP), which includes essential programmes for HIV/AIDS information, condom access, and materials for universal precautions in camps for refugees and internally displaced persons. In March 2002, the United Nation's Inter-Agency Standing Committee Reference Group on HIV/AIDS was created to improve coordination between organizations' efforts to carry out HIV/AIDS-related activities in emergency settings. The group is currently revising the *Guidelines on HIV Interventions in Emergency Settings*, developed by UNAIDS, WHO and UNHCR in 1996, to include a minimum standard of HIV/AIDS intervention services in conflict and post-conflict situations.

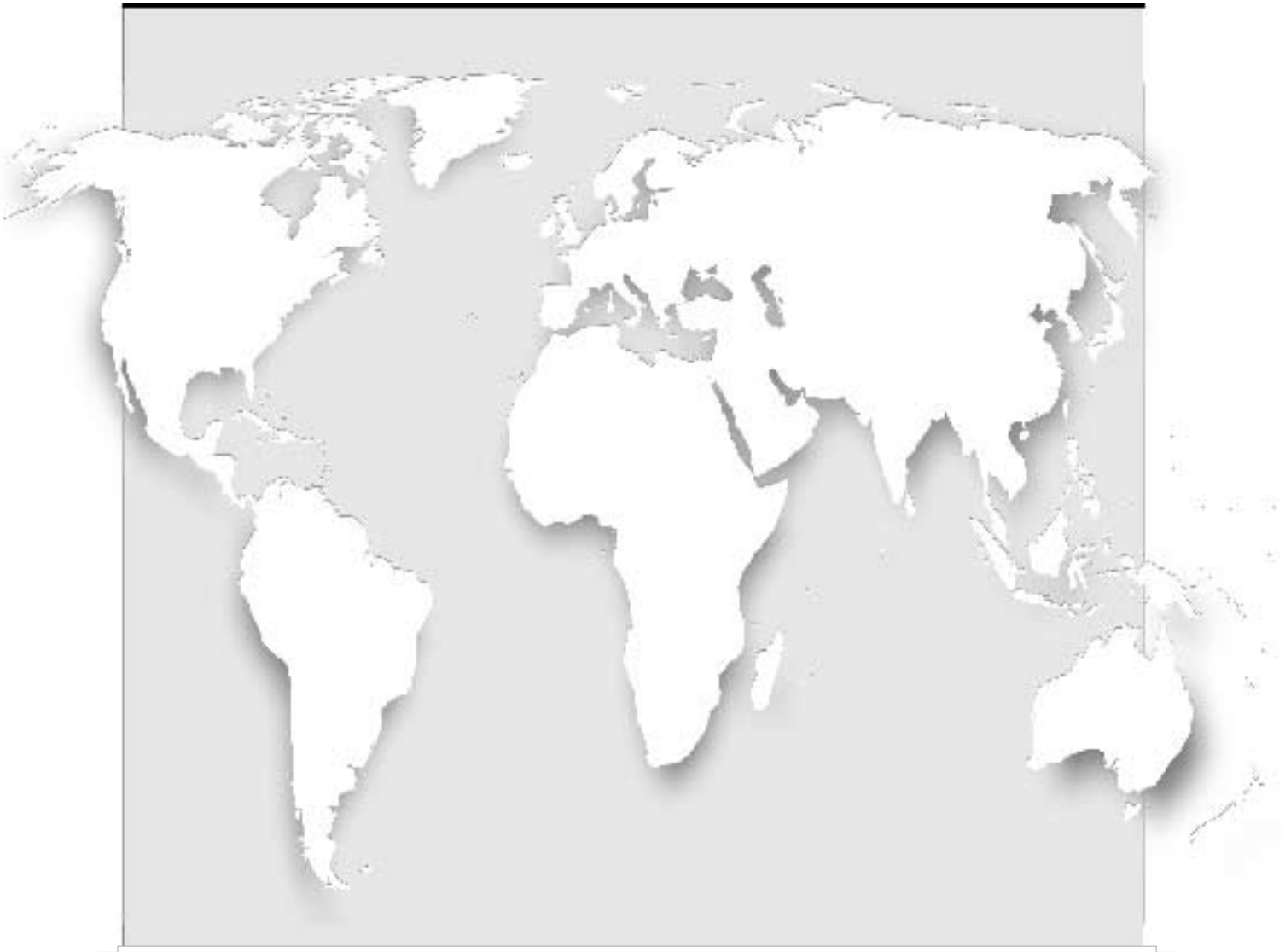
Meanwhile, United Nations agencies such as UNICEF and UNHCR, for example, are training displaced young people in Eritrea, Ethiopia and Uganda as HIV/AIDS educators who travel from camp to camp. And, in Afghanistan, HIV education is part of a programme for children who have been separated from their parents.

Preventing armed conflict may be very difficult. But it is possible to reduce the increased risks of HIV/AIDS spread among people who have been forced from their homes by conflict—if HIV/AIDS control efforts are integrated more effectively into humanitarian, relief and peacekeeping efforts.

Maps

Global estimates for adults and children, end 2002
Adults and children estimated to be living with HIV/AIDS, end 2002
Estimated number of adults and children newly infected with HIV during 2002
Estimated adult and child deaths due to HIV/AIDS during 2002

GLOBAL ESTIMATES FOR ADULTS AND CHILDREN, END 2002



People living with HIV/AIDS	**42 million**
New HIV infections in 2002	**5 million**
Deaths due to HIV/AIDS in 2002	**3.1 million**

AIDS epidemic update: December 2002

World Health Organization

Joint United Nations Programme on HIV/AIDS
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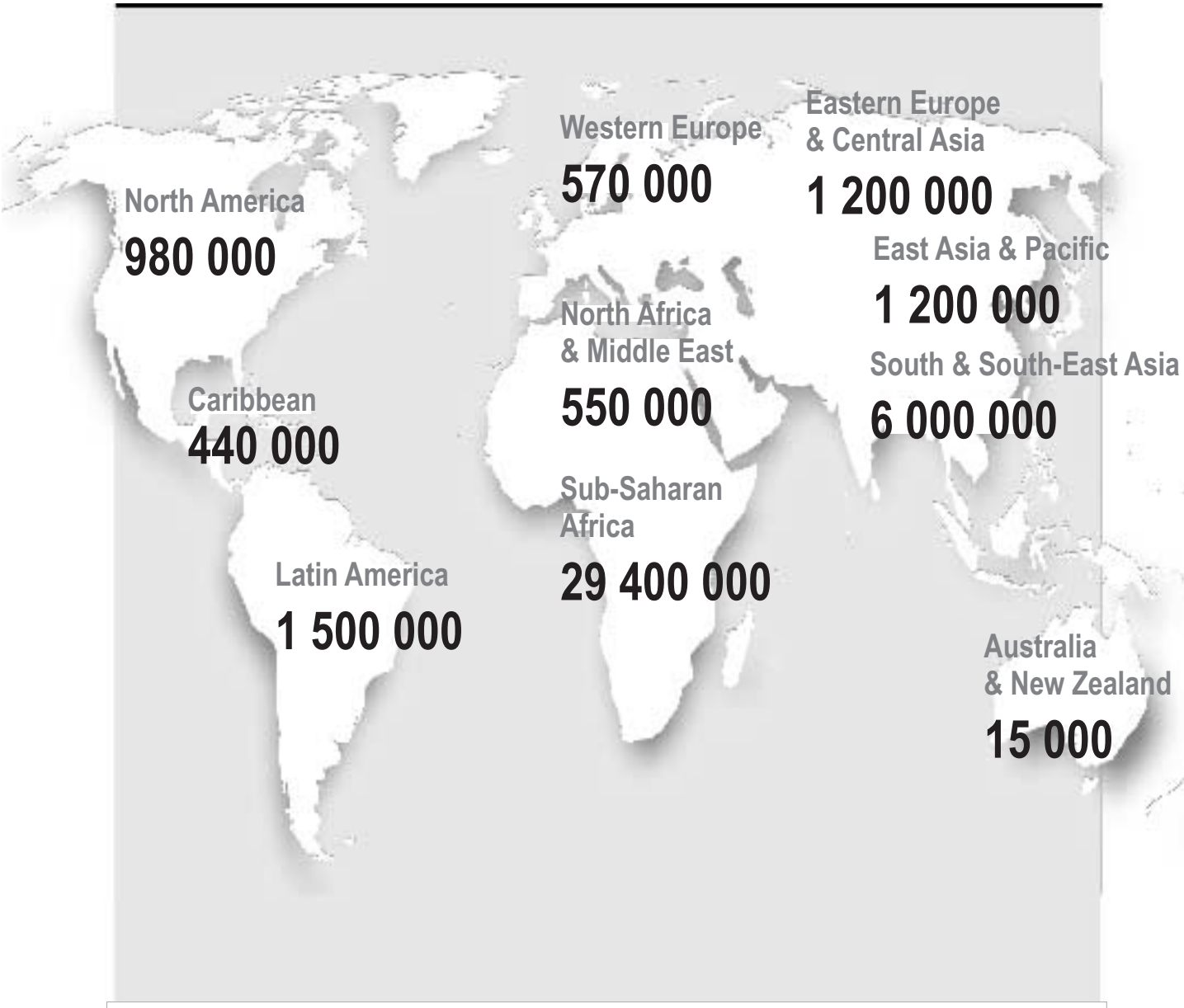
ADULTS AND CHILDREN ESTIMATED TO BE LIVING WITH HIV/AIDS, END 2002



TOTAL: 42 MILLION

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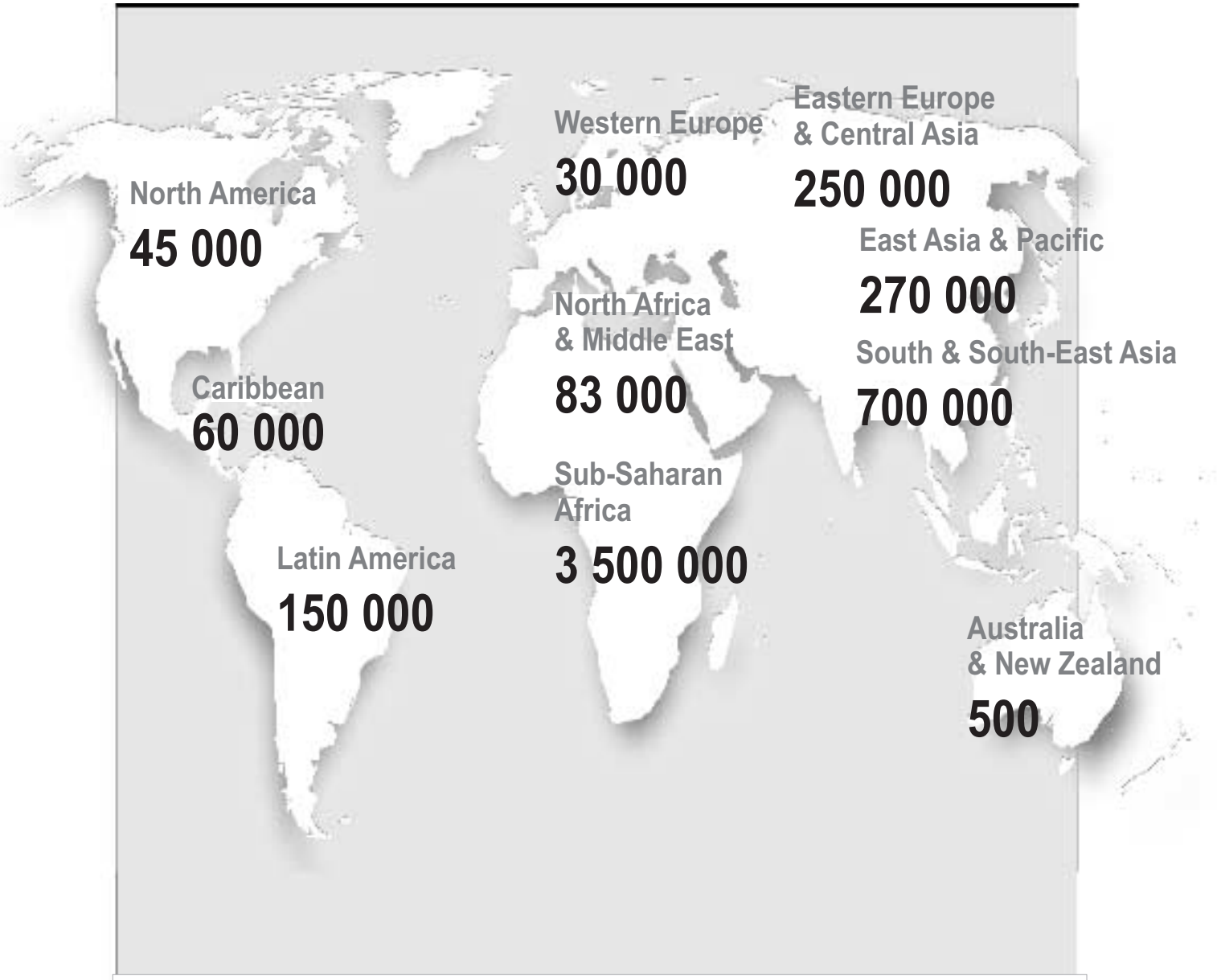
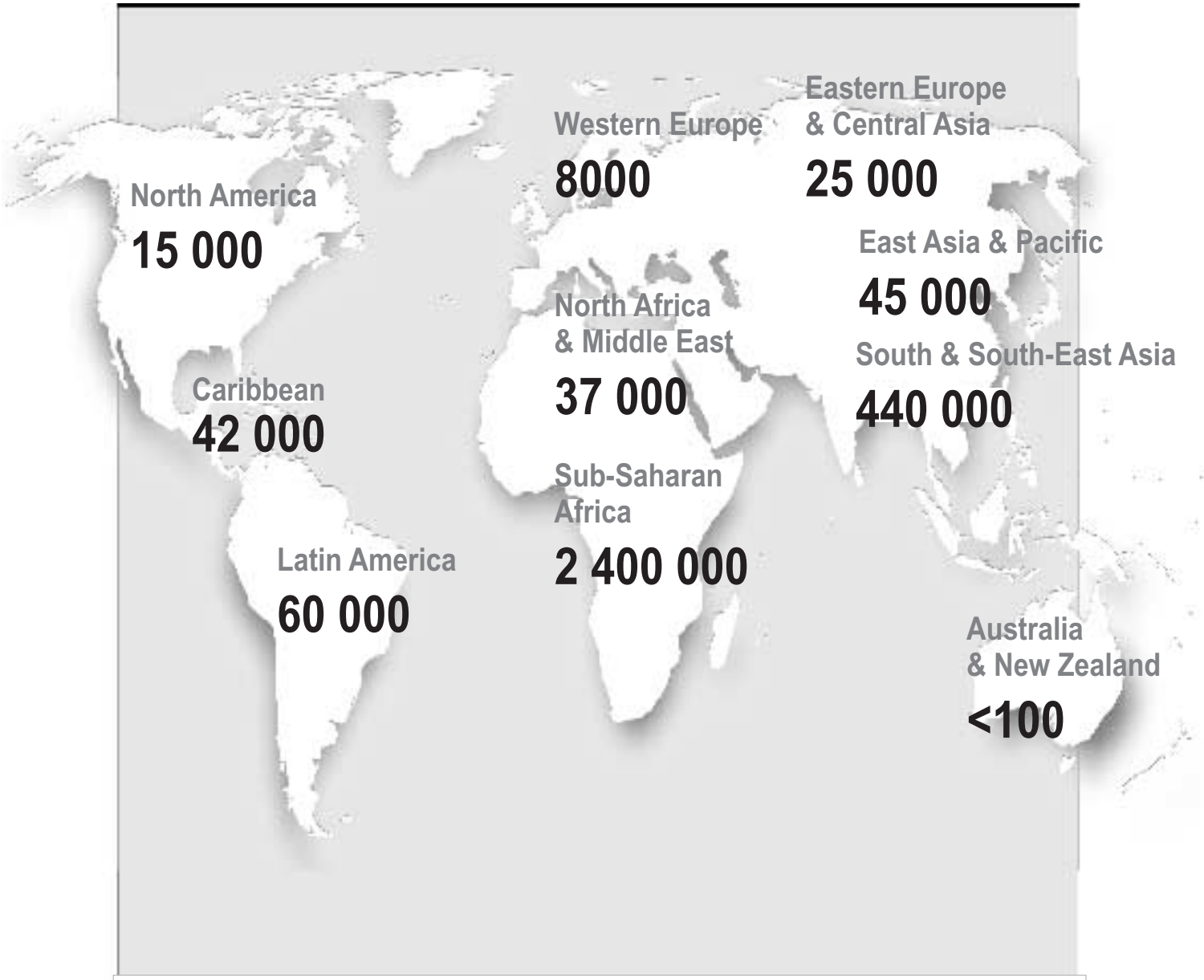
ESTIMATED NUMBER OF ADULTS AND CHILDREN NEWLY INFECTED WITH HIV DURING 2002



TOTAL: 5 MILLION

ESTIMATED ADULT AND CHILD DEATHS DUE TO HIV/AIDS DURING 2002



TOTAL: 3.1 MILLION

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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 from 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 HIV/AIDS epidemic. With maps and regional summaries, the 2002 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 examining the links between HIV/AIDS and humanitarian crises.

UNAIDS - 20 avenue Appia - 1211 Geneva 27 - Switzerland
Telephone: (+41) 22 791 36 66 - Fax: (+41) 22 791 41 87
E-mail: unaids@unaids.org - Internet: http:/www.unaids.org