

PERSPECTIVE

GLOBAL HEALTH

The AIDS Epidemic in 2004

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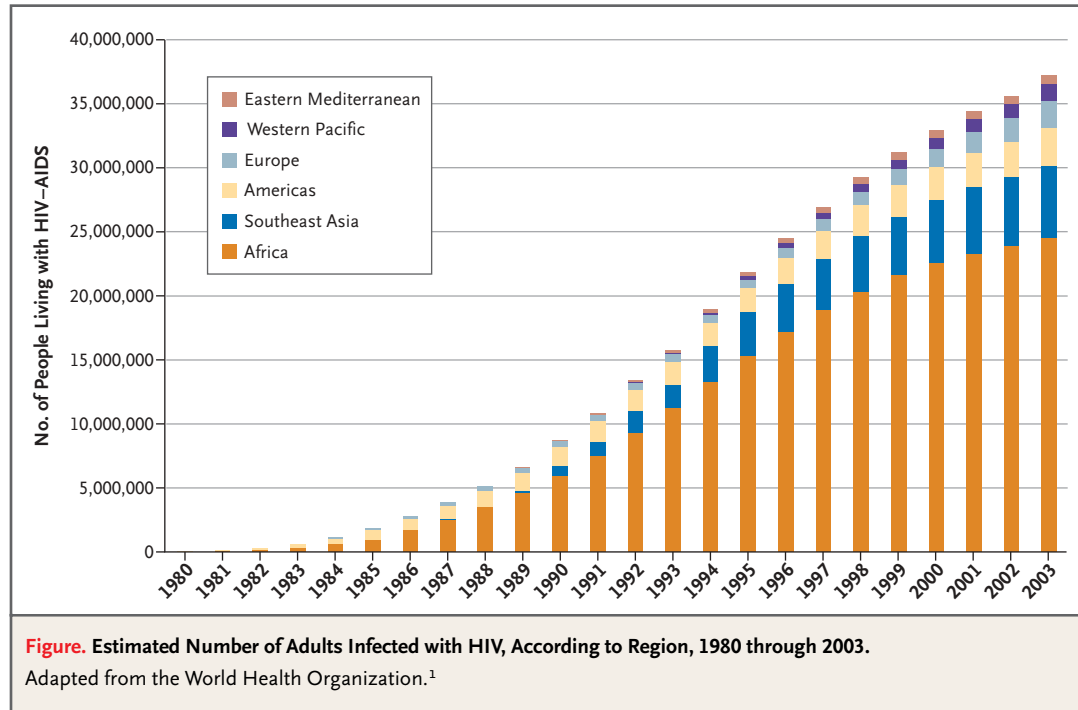
As the AIDS pandemic enters its 24th year, the number of people living with human immunodeficiency virus (HIV) infection continues to increase steadily (see Figure).¹ Two thirds of infected persons are in Africa, where the epidemic exploded during the 1990s, and one fifth are in Asia, where the epidemic has been growing rapidly in recent years. As of the end of 2003, an estimated 34.6 million to 42.3 million people throughout the world were living with HIV infection, and more than 20 million had died of AIDS.² In that year alone, about 4.8 million people became infected with HIV, and about 2.9 million died of AIDS.

The challenge of the epidemic is that despite the increases in funding, global attention, and political will, more infections and more deaths continue to occur. The participants in the 15th International AIDS Conference, which begins in Bangkok, Thailand, on July 11, will once again consider the daunting task of reversing these trends. In preparation for the meeting, the Joint United Nations Program on HIV/AIDS (UNAIDS) has updated its global statistics (see Table).² On the basis of better data than have previously been available from many countries, the estimation of the number of people living with HIV infection as of the end of 2003 has been revised downward — to a point estimate of 37.8 million from an earlier estimate of about 40 million. The estimated number of deaths due to AIDS has also been revised downward. Nonetheless, the statistics are merely estimates that reflect many assumptions and uncertainties; the situation in particular countries, such as those where accurate data are hardest to obtain, may be better or worse. Of all people between 15 and 49 years of age worldwide, 1.1 percent are now infected with HIV.

The global statistics make it clear that the burden remains greatest in Africa, although it is home to only 11 percent of the world's population. On that continent, AIDS has single-handedly reversed gains in life expectancy and reductions in childhood mortality. Botswana, a country of less than 2 million people, has an HIV prevalence rate

among adults of 37.3 percent. Of the nine countries that have the most HIV-infected people, eight are in sub-Saharan Africa: South Africa (5.3 million), Nigeria (3.6 million), Zimbabwe (1.8 million), the United Republic of Tanzania (1.6 million), and four others where more than 1 million people are infected (the Democratic Republic of Congo, Ethiopia, Kenya, and Mozambique). An estimated 950,000 people are living with HIV in the United States, 860,000 in the Russian Federation, 840,000 in China, 680,000 in Brazil, 570,000 in Thailand, 400,000 in Sudan, 360,000 in Ukraine, 330,000 in Myanmar, 280,000 in Haiti, and 220,000 in Vietnam. (All these figures are based on a range of high and low estimates, but the estimates for India — which is one of the countries with the most infections — and for China are particularly imprecise: estimates range from 2.2 million to 7.6 million for India and from 430,000 to 1.5 million for China.)

The primary modes of transmission of HIV have changed little over the years: unprotected intercourse, unprotected penetrative sex between men, injection-drug use, unsafe injections and blood transfusions, and transmission from mother to child during pregnancy, labor and delivery, or breastfeeding. Direct blood contact, such as the sharing of drug-injection equipment, is a particularly efficient means of transmitting the virus. The specific nature of the epidemic, however, continues to vary both among regions and within countries. Globally, "unprotected sexual intercourse between men and women is the predominant mode of transmission of the virus," according to the World Health Report 2004, which the World Health Organization (WHO) released in May.¹ "In sub-Saharan Africa and the Caribbean, women are at least as likely as men to become infected." In India, many infected persons are sex workers and long-distance truck drivers.³ There are parts of China, India, Thailand, and Vietnam where the epidemic is being driven primarily by injection-drug use. In parts of Cambodia, Myanmar, Thailand, and Vietnam, men who have sex with sex workers are a major



factor. In his Perspective article in this issue of the *Journal* (pages 117–120), Field discusses the situation in the countries of the former Soviet Bloc, where the epidemic is also expanding.

The updated statistics highlight the global disparities in deaths due to AIDS. Without treatment, it typically takes 9 to 11 years for HIV infection to progress to full-blown AIDS. A total of 2.2 million people died of AIDS in sub-Saharan Africa in 2003 (accounting for 76 percent of the global total). By comparison, in Western Europe, where effective treatment is widely available, only 6000 people died of AIDS in 2003.² The same year, there were a total of 12.1 million children in sub-Saharan Africa who had been orphaned by AIDS — an increase of 2.5 million from 2001. Because the epidemic is newer to Asia, fewer people there have died of AIDS than might be expected, given the number of people infected. Nonetheless, in 2003, Thailand had about 58,000 AIDS-related deaths, and China 44,000 (although these estimates are imprecise). UNAIDS is in the process of estimating the number of AIDS-related deaths in India.

AIDS in children remains concentrated in sub-Saharan Africa. More than 2 million women with HIV infection give birth each year.¹ Despite the availability of effective antiretroviral treatment,

about 630,000 infants contract HIV infection from their mothers each year, including 550,000 in sub-Saharan Africa.² Of an estimated 2.1 million infected children younger than 15 years of age at the end of 2003, 90 percent were in Africa, where Nigeria alone had 290,000 infected children and South Africa 230,000. In 2003, about 490,000 children in this age group died of AIDS, including 440,000 in sub-Saharan Africa.

The theme of the International AIDS Conference is “access for all.” There are really only two approaches to the epidemic: preventing new HIV infections and providing antiretroviral treatment to people who need it. Because there is no AIDS vaccine, prevention efforts involve education about sexual and other practices, behavioral change, and reaching the groups of people, including injection-drug users and sex workers and their clients, who are at high risk for infection. The public, the medical community, and government officials all need better information about AIDS. Many infected people do not know that they are infected; others may not seek care, even if it is available, because of the stigma or potential repercussions. Cambodia and Thailand are examples of nations that have effective prevention programs, such as programs to increase condom use by sex workers and their clients.¹

Table. The Global HIV–AIDS Epidemic at the End of 2003.*

Region	No. of People Living with HIV–AIDS	Prevalence of HIV–AIDS among Adults %	No. of New HIV Infections in 2003	No. of Deaths Due to AIDS in 2003
Total	37,800,000	1.1	4,800,000	2,900,000
Sub-Saharan Africa	25,000,000	7.5	3,000,000	2,200,000
South and South-east Asia	6,500,000	0.6	850,000	460,000
Latin America	1,600,000	0.6	200,000	84,000
Eastern Europe and Central Asia	1,300,000	0.6	360,000	49,000
North America	1,000,000	0.6	44,000	16,000
East Asia	900,000	0.1	200,000	44,000
Western Europe	580,000	0.3	20,000	6,000
North Africa and Middle East	480,000	0.2	75,000	24,000
Caribbean	430,000	2.3	52,000	35,000
Oceania	32,000	0.2	5,000	700

* Data are from the Joint United Nations Program on HIV/AIDS.²

The WHO has set a goal of providing antiretroviral treatment to 3 million people in developing countries by the end of 2005 — the so-called 3-by-5 initiative. Even if this ambitious plan succeeds —

which is by no means assured — only about half the people who need treatment will be receiving it. Despite substantial progress, there remains a large gap between the number of people in developing countries who need treatment (4 to 8 million) and the number being treated (about 400,000, as of the end of 2003, including about 100,000 in sub-Saharan Africa).¹ “Dismal” would be a charitable way of describing the treatment-coverage rates in many countries. Botswana, Senegal, and Uganda are three African nations that are doing better. Brazil, which has a large-scale universal program for the distribution of antiretroviral medications, is another developing nation that has made substantial progress against the epidemic. Botswana, which has one of the highest HIV infection rates in the world, has instituted routine HIV testing and is expanding access to treatment.⁴

The International AIDS Conference will bring new energy, attention, and perhaps resources to the battle against the pandemic. Unfortunately, global control is not in sight.

1. The world health report 2004 — changing history. Geneva: World Health Organization, May 2004. (Accessed June 17, 2004, at <http://www.who.int/whr>.)

2. 2004 Report on the global AIDS epidemic. Geneva: Joint United Nations Program on HIV/AIDS, July 2004.

3. Chase M. Gates Foundation bets it can stem India's AIDS crisis. Wall Street Journal. May 3, 2004:A1.

4. LaFraniere S. Mandatory testing bolsters Botswana in combating AIDS. New York Times. June 14, 2004:A1.

GLOBAL HEALTH

HIV and AIDS in the Former Soviet Bloc

Mark G. Field, Ph.D.

As compared with most nations affected by the human immunodeficiency virus (HIV) and AIDS, the countries of the former Soviet Bloc encountered the disease rather late. The first public announcement of cases of HIV infection in the former Soviet Union came in the mid-1980s and was greeted with denial and derision: many believed that AIDS could not happen there and that it must therefore be limited to homosexuals, drug addicts, and other “deviants,” as well as black Africans and foreign tourists. Some believed that HIV was developed by the United States as part of the Cold War, to be “tested” on marginalized persons who led a disorderly sexual life.

The epidemic may have taken a long time to reach this region because of the strict controls once placed on the movement of people and contacts with foreigners. With the collapse of the Soviet Union in 1991, the barriers between its republics and the rest of the world tumbled down, facilitating the propagation of the virus. Today, this region has some of the fastest-growing rates of HIV infection in the world, according to the United Nations Development Program (UNDP).¹

Because of the nature of the disease, measuring the extent and progression of the epidemic is a matter of educated estimates based on a variety of indexes and assumptions (see Figure). In 2003, the