

48910

---

GLOBAL  
PROGRAMME  
ON  
AIDS

---

THE HIV/AIDS PANDEMIC:  
1993 OVERVIEW



WORLD  
HEALTH  
ORGANIZATION

**THE HIV/AIDS PANDEMIC: 1993 OVERVIEW****CONTENTS**

|             |   |           |
|-------------|---|-----------|
| <b>I.</b>   | <b>Introduction</b> .....   | <b>1</b>  |
|             | <i>a. The HIV/AIDS pandemic</i> .....                                 | <i>1</i>  |
|             | <i>b. Modes of HIV transmission</i> .....                             | <i>4</i>  |
|             | <i>c. Progression from HIV infection to illness</i> .....             | <i>5</i>  |
|             | <i>d. Interactions between HIV infection and other diseases</i> ..... | <i>6</i>  |
| <b>II.</b>  | <b>Extent and geographical distribution of HIV infection and AIDS</b> |           |
|             | • Australasia, North America and Western Europe .....                 | 7         |
|             | • Latin America and the Caribbean .....                               | 8         |
|             | • Sub-Saharan Africa .....  | 9         |
|             | • South and South-East Asia .....                                     | 11        |
|             | • East Asia and the Pacific .....                                     | 13        |
|             | • Eastern Europe and Central Asia .....                               | 13        |
|             | • North Africa and the Middle East .....                              | 14        |
| <b>III.</b> | <b>Global estimates and projections of HIV/AIDS</b> .....             | <b>15</b> |

## I. Introduction

### a. *The HIV/AIDS pandemic*

In 1981 a new syndrome, the acquired immunodeficiency syndrome (AIDS), was first recognized among homosexual men in the USA. By 1983 the etiological agent — the human immunodeficiency virus (HIV) — had been identified. By the mid 1980s it became clear that the virus had spread, largely unnoticed, throughout the world and that its effects had reached truly global — or "pandemic" — proportions.

The HIV/AIDS pandemic consists of many separate epidemics (in many cases even within a single country). Each epidemic has its own distinct origin, in terms of geography and specific populations affected, and involves different types and frequencies of risk behaviours and practices — for example, having unprotected sex with multiple partners or sharing drug injection equipment.

The extensive spread of HIV appears, in retrospect, to have commenced in the late 1970s or early 1980s — in the Americas, Australasia and Western Europe primarily in homosexual or bisexual men and injecting drug users in certain urban areas; and in parts of the Caribbean and East and Central Africa among men and women with multiple sex partners. Today, the virus is being transmitted on all continents. As of mid 1993, more than 14 million HIV infections are estimated to have occurred since the beginning of the pandemic, over 13 million of them in adults (Figure 1; Table 1).

**Figure 1. Estimated global distribution of cumulative HIV infections in adults, by continent or region — mid 1993**

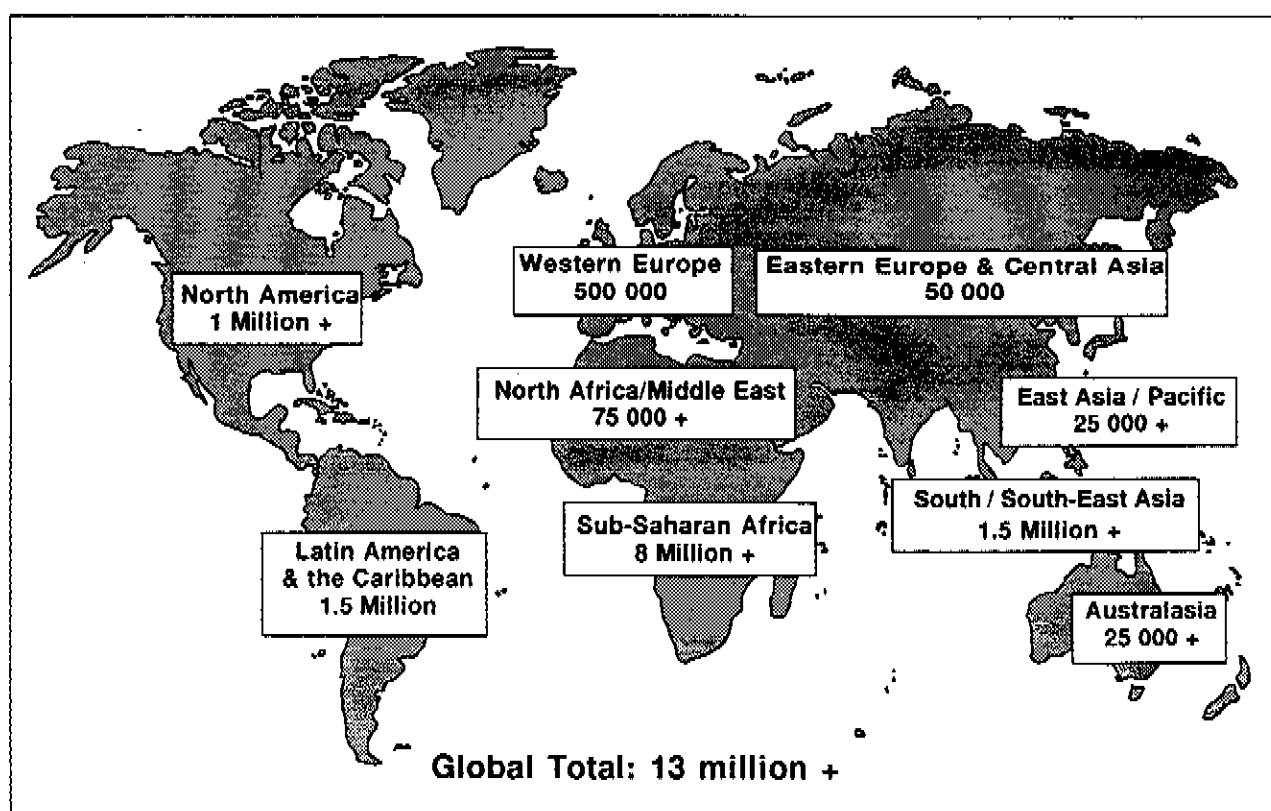


Table 1. The HIV/AIDS situation — 1993

| Region                         | Estimated cumulative adult HIV infections <sup>1</sup> | Estimated cumulative adult AIDS cases <sup>2</sup> | Reported cumulative AIDS cases <sup>3</sup> | Distribution of adult HIV prevalence by sex<br>men (%) women (%) |
|--------------------------------|--|--|---|--|
| Australasia                    | > 25 000   | < 5 000  | 3 963                                       | 85 15  |
| North America                  | > 1 million  | > 300 000  | 249 035                                     | 85 15  |
| Western Europe                 | 500 000  | > 120 000  | 78 049                                      | 85 15  |
| Latin America & the Caribbean  | 1.5 million  | > 240 000  | 64 048                                      | 80 20  |
| Sub-Saharan Africa             | > 8 million  | > 1.5 million                                      | 210 376                                     | 45 55  |
| South and South-East Asia      | > 1.5 million  | > 30 000   | 1 445                                       | 65 35  |
| East Asia and Pacific          | > 25 000   | 1 000  | 663   | 85 15  |
| Eastern Europe & Central Asia  | 50 000   | > 3 000  | 2 850                                       | 87 13  |
| North Africa & the Middle East | > 75 000   | 10 000   | 1 160                                       | 80 20  |
| <b>Global Total</b>            | <b>&gt; 13 million</b>                                 | <b>&gt; 2.2 million</b>                            | <b>611 589</b>                              | <b>60 40</b>   |

<sup>1</sup> Including deaths.<sup>2</sup> Estimated as of June 1993.<sup>3</sup> As of 4 January 1993 — adults and children.

The HIV/AIDS pandemic was initially centred in urban locations but in most countries is now thought to be present in rural areas as well. The precise nature and extent of HIV spread in rural areas varies between, and even within, individual countries and is largely influenced by the transportation infrastructure.

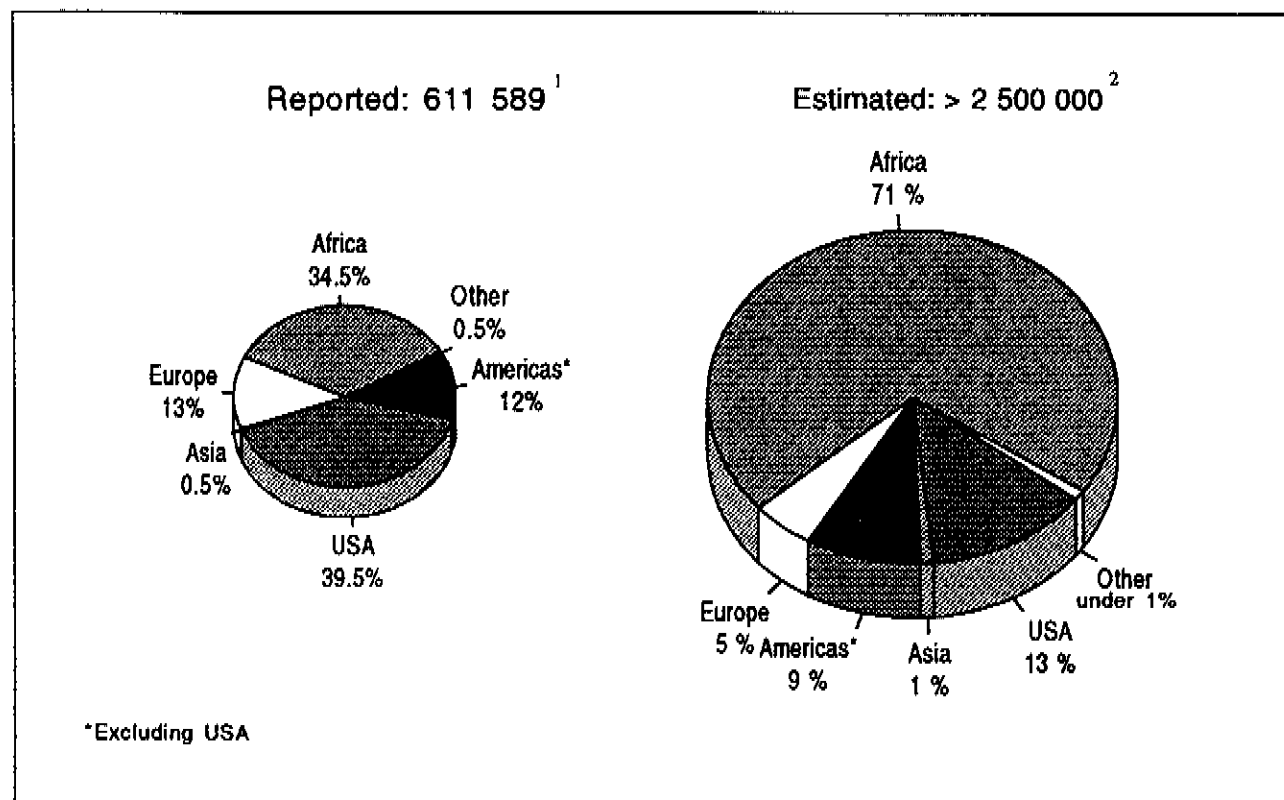
Initially, in developed countries, men were more exposed to HIV than women, primarily as a result of homosexual intercourse or drug injecting, but the difference in the numbers of men and women infected with HIV has gradually narrowed as heterosexual transmission has become more common. In other parts of the world, where heterosexual transmission predominated from the outset, the difference between the sexes is even narrower. Worldwide, there are 3 men already infected for every 2 women (see Table 1) and by the year 2000 the number of new infections among women is expected to approach that among men. The rising infection rates in women are accompanied by a corresponding rise in the number of children born with HIV infection. To date, it is estimated that about 1 million children have been infected with HIV through mother-to-child transmission. These children rapidly develop AIDS and die — usually before the age of 5.

Two serotypes of HIV are currently recognized, namely HIV-1 and HIV-2. Worldwide, the predominant virus is HIV-1. However, HIV-2 appears to have spread extensively during the 1980s, principally in West Africa, although sporadic infections with this serotype have now been reported from East Africa too, as well as from Europe, Asia and Latin America. The modes of transmission of HIV-2 are similar to those for HIV-1, and the two viruses appear to cause clinically indistinguishable AIDS. However, HIV-2 may be less easily transmitted, and the period between initial infection and illness may be longer in the case of HIV-2.

In the light of recent reports of cases of severe immunodepression in the absence of either HIV-1 or HIV-2 infection, concern has been raised that another, as yet undetected, virus may be spreading. Between June and September 1992 a worldwide investigation was conducted by WHO and the US Centers for Disease Control and Prevention. No evidence of a link between the cases or of a new HIV-like virus was found.

By January 1993, more than 600 000 AIDS cases had been reported to WHO (Table 1), but WHO estimates that as of mid 1993, allowing for under-diagnosis, under-reporting, and delays in reporting, there have been more than 2.5 million cumulative AIDS cases worldwide (Figure 2). Of these, it is estimated that more than 500 000 are paediatric AIDS cases resulting from mother-to-child transmission, almost all of these having occurred in sub-Saharan Africa.

Figure 2. Cumulative AIDS cases in men, women and children — 1993



<sup>1</sup> As of January 1993

<sup>2</sup> As of June 1993

### b. Modes of HIV transmission

An understanding of the ways in which HIV can be transmitted is central to an understanding of the epidemiology of the pandemic. It has now been established, as a result of laboratory and epidemiological investigations, that HIV is transmitted in three ways: through **sexual intercourse**, through **blood** and from **mother to child**.

HIV transmission as a result of **sexual intercourse** accounts for about three-quarters of all HIV infections worldwide. In other words, HIV infection is a sexually transmitted disease (STD). Transmission through intercourse between men occurs in most parts of the world, although in the developed countries it has become far less common thanks to the adoption of safer sex practices by homosexual men. The majority of the world's infections have been acquired through intercourse between men and women (heterosexual transmission). This mode of transmission continues to grow in importance worldwide.

As with certain other STDs, HIV infection can also be transmitted through **blood**, for example as a result of the medical transfusion of infected blood or blood products. In many parts of the world progress towards a safer supply of blood and blood products is being achieved through the appropriate selection of donors, the screening of donated blood, and through more rational use of blood aimed at decreasing the number of people being transfused. Less commonly, HIV is also transmitted through the use of non-sterilized skin-piercing instruments, both in health facilities (nosocomial transmission, mostly occurring from patient to patient) and outside the health care setting. A major problem in both the developed and developing world is HIV transmission resulting from the use of contaminated injection equipment by drug users.

The transmission of HIV from **mother to child** includes transmission during pregnancy, during delivery and through breast-feeding. Overall, approximately one third of children born to HIV-infected mothers will be infected with HIV. Much of mother-to-child transmission occurs during pregnancy and delivery, although up to half of all HIV infections from an infected mother to an uninfected child are believed to occur through breast-feeding.

Laboratory and epidemiological studies have also shown that HIV is **not** transmitted by everyday contact, by hugging or kissing, through food or water, or by mosquitos and other biting insects.

*c. Progression from HIV infection to illness*

The interval between infection with HIV and the onset of clinical symptoms is unusually long compared with other communicable diseases, and varies considerably between individuals. Approximately 50% of those infected become ill within ten years of initial infection. Current evidence suggests that, in the absence of other causes of death, almost all HIV-infected people will ultimately die of AIDS. Once an individual develops AIDS, the average survival time appears to be between one and three years.

Less is known of the natural history of HIV-2 infections, although the evidence to date suggests that people infected with HIV-2 progress to AIDS considerably more slowly than those infected with HIV-1.

Several factors may influence the rate of progression from HIV infection to onset of clinical illness. Some strains of HIV may be more pathogenic than others. Human genetic factors and other host-specific factors may affect the rate at which different individuals develop disease. Yet other factors, including concurrent infections, may also play a role. There is clear evidence that young children and adults over 40 years of age progress to disease faster than young adults.

d. *Interactions between HIV infection and other diseases*

The transmission of other **sexually transmitted diseases**, including gonorrhoea, syphilis and chancroid, is associated with the same behaviours that expose individuals to potential HIV infection and ultimately AIDS. Furthermore, data suggest that STDs — especially those such as chancroid and syphilis, which cause ulcerative lesions — greatly facilitate both the acquisition and transmission of HIV. For both these reasons, effective STD diagnosis, care and education are imperative for the prevention of HIV infection.

Policies have been developed by WHO to provide a basis and a framework for the development, strengthening and implementation of STD programmes. However, since STD control relies heavily on the extent and quality of health care provision, the general performance of the health care system in individual countries may largely determine the degree to which STDs can be prevented, or diagnosed and treated.

About 30% to 50% of adults in most developing countries have latent **tuberculosis** infection — i.e., they have been infected with *Mycobacterium tuberculosis* at some point in their lives, but have not developed active tuberculosis.

Tuberculosis is already one of the leading causes of adult death in many developing countries, killing around 3 million people a year. An alarming increase in cases has been reported in parallel with the AIDS epidemic in many countries. HIV infection is now the strongest known risk factor for the development of active tuberculosis. People with latent tuberculosis infection more readily develop the disease once their immune system has been damaged by HIV. As many as 8% of these dually infected people may develop active tuberculosis each year.

The increased risk of tuberculosis is not confined to HIV-infected people, however. About half of all dually infected people will develop contagious tuberculosis and be capable of spreading the disease to any susceptible individual. This may consequently lead to a dramatic increase in tuberculosis cases among people who are not infected with HIV.

## II. Extent and geographical distribution of HIV infection and AIDS

This section illustrates some of the recent characteristics and trends in the spread of HIV/AIDS, with emphasis on the regions in which the virus has been spreading for the longest time and where the pandemic is thus best understood.

### **Australasia, North America and Western Europe**

In Australasia, North America and Western Europe, HIV began to spread extensively in the late 1970s to early 1980s. The people predominantly affected thus far have been homosexual or bisexual men and injecting drug users, together with their sex partners.

As of mid 1993, over 1.5 million cumulative HIV infections in adults are estimated to have occurred in this region, with about two-thirds, or 1 million infections, occurring in the USA. In total about 332 000 cumulative AIDS cases in adults and children have been reported but over 400 000 cases are estimated by WHO to have occurred (Table 1).

Marked differences continue to exist between and even within these countries in the distribution of AIDS cases among homosexual men and injecting drug users, reflecting the variability in HIV transmission patterns. For example, on the west coast of the USA, about 90% of the total number of people with AIDS have been homosexual men, while on the east coast up to 40% have been injecting drug users. Similarly in Europe, the vast majority of AIDS cases in Scandinavia have occurred in homosexual men, whereas injecting drug users constitute two-thirds or more of the AIDS cases reported from Italy and Spain.

HIV incidence among homosexual men appears to have decreased markedly since the mid 1980s. In contrast, HIV incidence among injecting drug users is continuing to increase in many places; in Europe this transmission route accounts for about 30% of recent AIDS cases, up from about 20% in the mid 1980s.

The transmission of HIV through heterosexual intercourse increased during the latter half of the 1980s and the early 1990s, with especially noticeable increases in urban populations with high rates of injecting drug use or STDs. Up to one-third of new HIV infections in some urban centres in Scotland are now due to heterosexual transmission. Among women attending antenatal clinics in London during 1992, HIV prevalence ranged between 1 and 5 per 1000. Similar surveys of women attending antenatal clinics in the USA gave a nationwide figure of 1.7 per 1000.

In many large cities of Australasia, North America and Western Europe, AIDS has become a major cause of death in young adults aged 20-40 years. By 1988, AIDS was the leading cause of death among both men and women aged 25-34 in New York City, for example.

### **Latin America and the Caribbean**

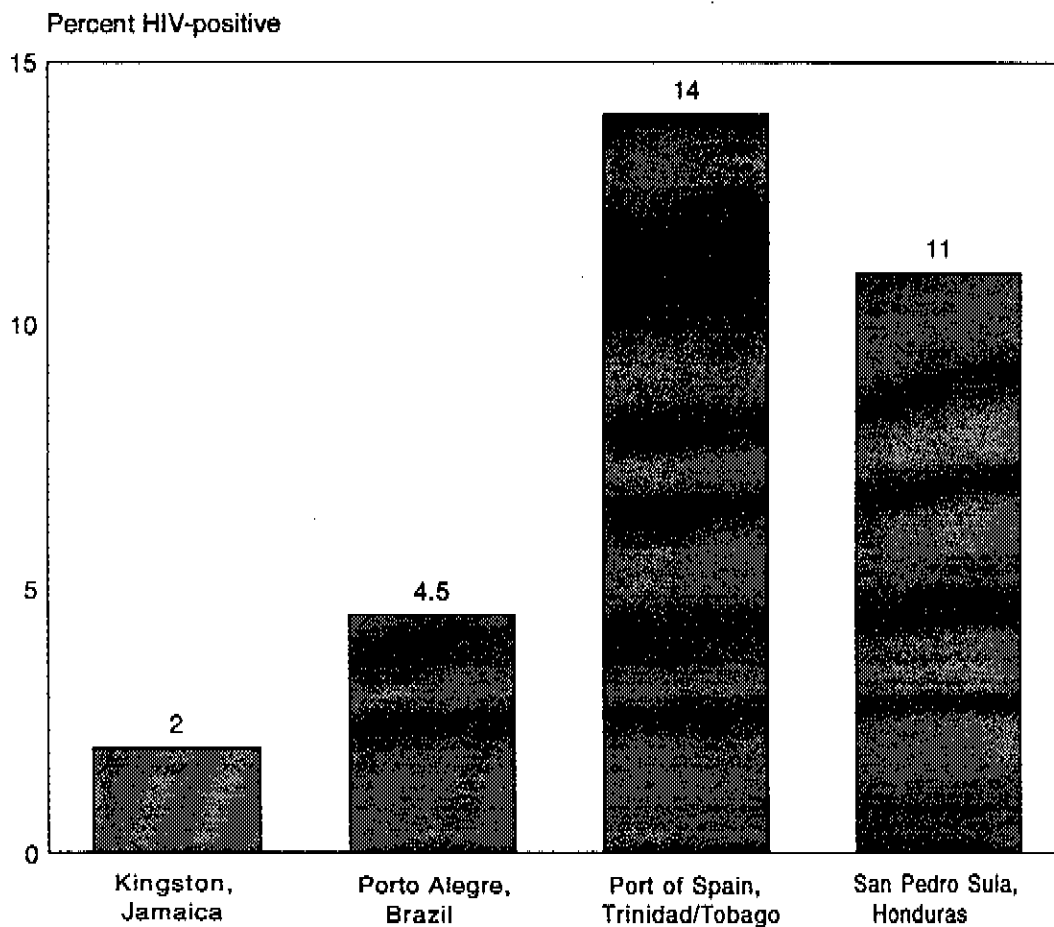
Extensive spread of HIV began in this region during the late 1970s or early 1980s. In Latin America, most infections were initially among homosexual or bisexual men. Since the mid 1980s, there has been increasing heterosexual transmission, principally among bisexual men and their female sex partners, and among female sex workers and their clients. For example, in Brazil the percentage of reported AIDS cases due to heterosexual transmission increased from 7.5% in 1987 to 23% in 1992. HIV infections among injecting drug users are a growing problem, for example in Argentina (where prevalence ranges from 30% to 50%) and Brazil (20% to 60%). In most of the Caribbean, heterosexual transmission has been the predominant mode of transmission for at least a decade.

Results from HIV sentinel surveillance among people attending selected STD clinics suggest that between 2% and 14% may be infected in different parts of the region (Figure 3). In addition, studies among pregnant women attending antenatal clinics in 1990-1991 found HIV prevalences of 2.9% in the Bahamas, and 1.3% in Santo Domingo, Dominican Republic, and São Paulo state, Brazil.

Further indication of the spread of the pandemic in this region is provided by studies conducted in 1991 indicating a prevalence of 0.6% in police employees in Guatemala City and of 0.2% among blood donors in Tegucigalpa, the capital city of Honduras.

As of mid 1993, WHO estimates that 1.5 million cumulative adult HIV infections have occurred in Latin America and the Caribbean (Table 1). WHO also estimates that over 240 000 AIDS cases have occurred in this region. As of January 1993, more than 64 000 adult and paediatric AIDS cases had actually been reported. By December 1992, Colombia and Venezuela taken together had reported over 5000 cumulative AIDS cases, while Argentina had reported close to 2000 cases. The number of AIDS cases, and the resulting burden on health care, is highest in Brazil, which had over 31 000 reported cases as of December 1992.

**Figure 3. HIV prevalence in STD clinic attenders**  
— Latin America and the Caribbean, 1991-1992



### Sub-Saharan Africa

Most of the available epidemiological data indicate that the extensive spread of HIV started in sub-Saharan Africa in the late 1970s. In some populations the relatively high rates at which new sexual relationships are entered into, combined with high levels of conventional STDs, are believed to be important factors in heterosexual HIV transmission.

As of mid 1993, WHO estimates that over 8 million adult HIV infections have occurred in sub-Saharan Africa (Table 1). Of this total, about half to two-thirds have been in East and Central Africa, an area which accounts for only about one-sixth of the total population of the sub-Saharan region.

At the beginning of 1993, around 211 000 cumulative adult and paediatric AIDS cases had been reported in sub-Saharan Africa; however, in view of extensive under-diagnosis, under-reporting and reporting delays, WHO estimates that more than 1.5 million AIDS cases had occurred in this region as of mid 1993, constituting over two-thirds of the current global total (Table 1; Figure 2).

Because heterosexual transmission is predominant, the number of HIV infections in men and women are more or less equal, with females outnumbering males by 6 to 5. Thus, over 4 million women of childbearing age have been infected.

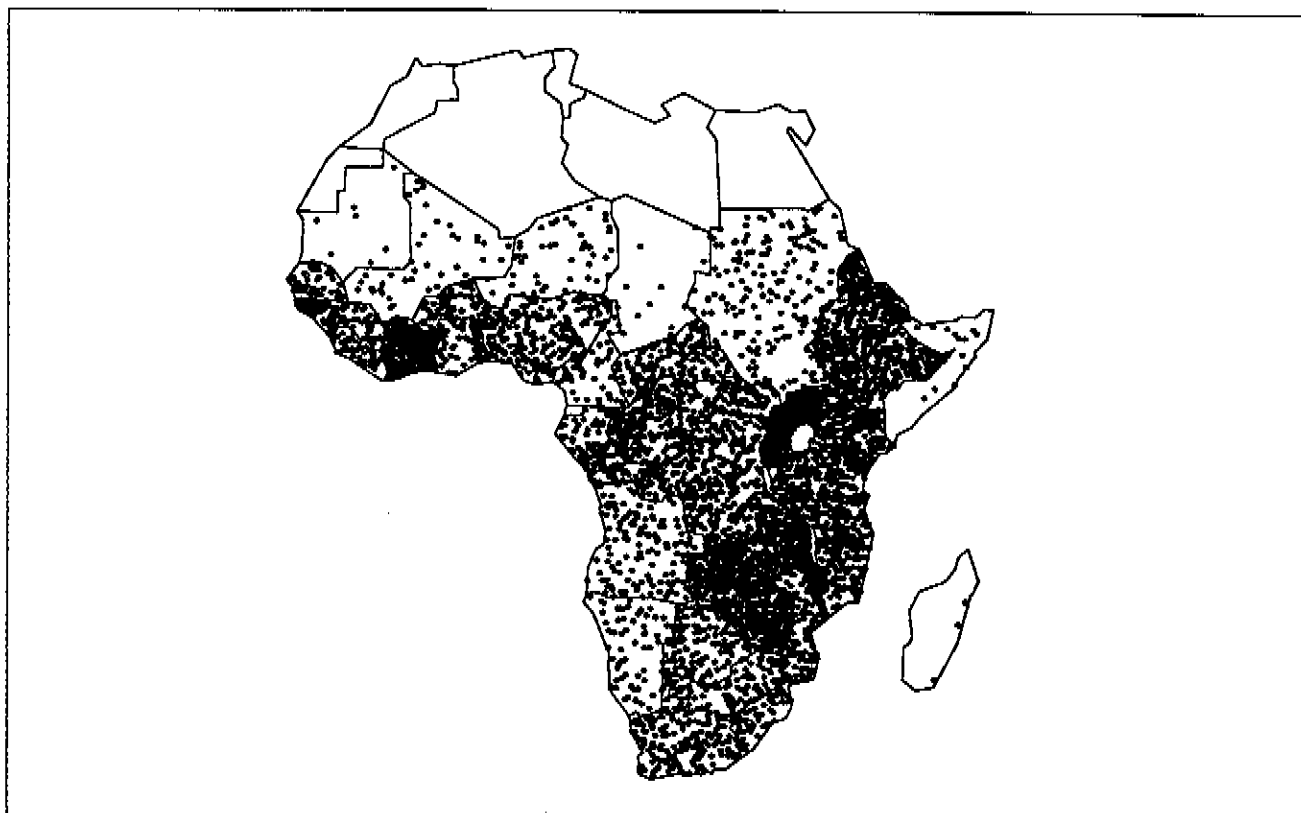
Perinatal transmission is a widespread and increasing problem. As of late 1992, WHO estimates that there have been close to 500 000 AIDS cases in children.

In this region, transmission through the transfusion of HIV-infected blood continues to account for a relatively small proportion of total HIV infections — probably less than 10%. The incidence of HIV transmission through this route is declining as routine HIV screening of blood donated for transfusions, and the more rational use of blood, are implemented more widely.

Practices such as ritual scarification and the use of inadequately sterilized skin-piercing instruments (e.g., needles and syringes) are believed to account overall for only a small proportion of all HIV infections in sub-Saharan Africa.

Recent serological data from sub-Saharan Africa indicate that the pandemic has continued to evolve, particularly in western and southern Africa (Figure 4). In Zimbabwe alone, for example, it is estimated that over 600 000 people have been infected. HIV prevalences of over 18% have been observed among adults in the major urban areas of Botswana. In West Africa, the 1992 results of sentinel surveillance from Nigeria, a country with almost one-fifth of sub-Saharan Africa's population, clearly indicate that HIV has spread throughout the country. HIV prevalences of 15% to 20% were found among some groups of female sex workers. In 9 of the 11 states in which sentinel surveillance has been instituted among people attending STD clinics, prevalence ranged from 0.5% to 22.1%. Among pregnant women, HIV prevalence estimates were as high as 5.8% in the same 11 states. In Abidjan, Côte d'Ivoire, HIV prevalence is 10% to 12%.

**Figure 4. Distribution of estimated cumulative HIV infections in adults  
— Africa, 1992**

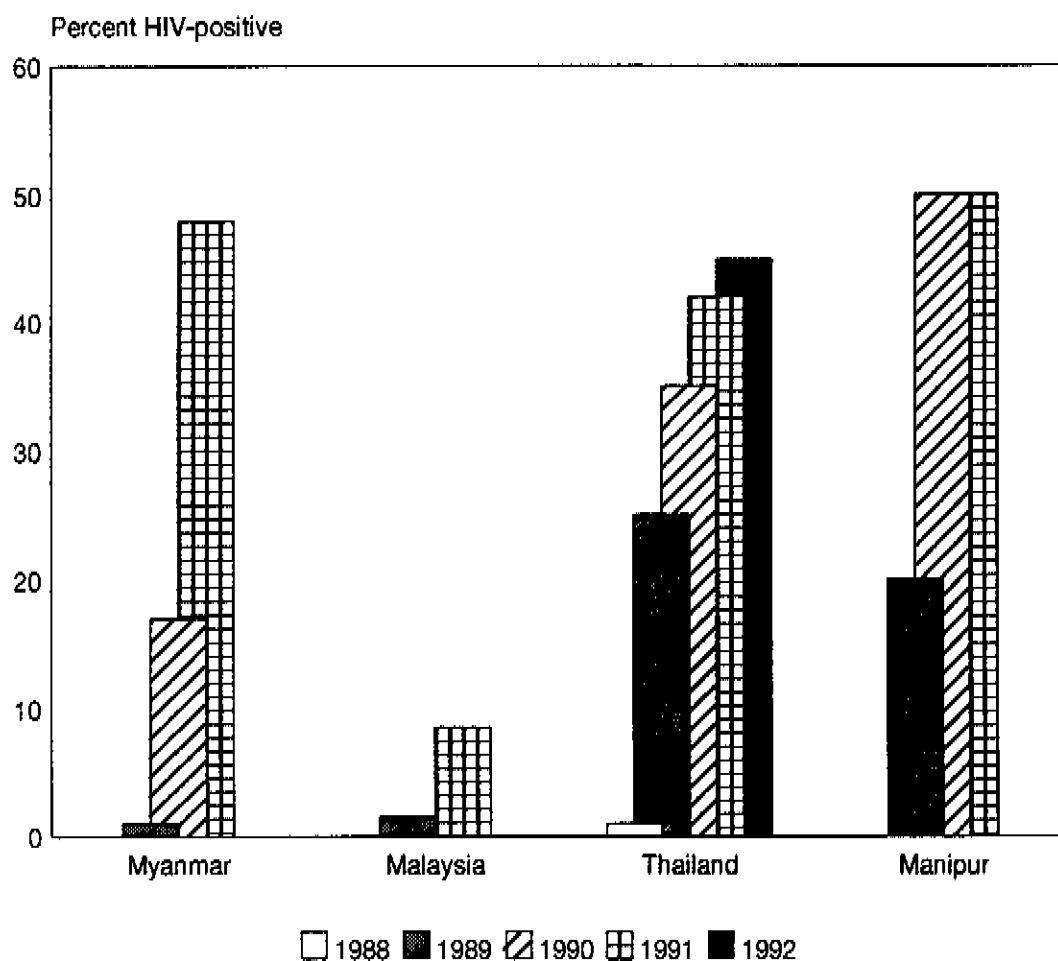


### **South and South-East Asia**

Although the extensive spread of HIV in South and South-East Asia began only in the mid 1980s or even later, the progression of the pandemic in this region has been rapid. As of mid 1993, WHO estimates that over 1.5 million HIV infections have occurred in adults (Table 1). While India and Thailand account for the majority of reported infections, rapid HIV spread into specific populations has been seen elsewhere in the region. An estimated 30 000 cumulative AIDS cases in adults and children are believed to have occurred to date, but only 1445 cases have been reported (Table 1).

In Yunnan Province, China, 10% to 30% of injecting drug users have been found to be infected with HIV. In other countries of the region there has been a dramatic increase in HIV prevalence among injecting drug users, as shown in Figure 5.

Figure 5. HIV prevalence in injecting drug users  
— South and South-East Asia, 1988-1992



Heterosexual transmission of HIV appears to be increasing rapidly in other vulnerable groups. In Thailand as of late 1991, overall median rates of 21% were seen in female prostitutes, and of 5.6% in people attending STD clinics.

As of early 1992, estimates from Thai sentinel surveillance studies indicated that HIV prevalence among pregnant women attending antenatal clinics was greater than 1.4% in over 20 provinces. In at least 4 provinces prevalence was more than 4%, and in one province reached 8.8%. In early 1990, the government of Thailand estimated that there were at least 50 000 HIV-infected people in the country. It is estimated that by late 1992 this number had risen to approximately 450 000.

In South Asia, the evidence available suggests that as of early 1993 around 1 million adults had been infected with HIV. Studies of HIV prevalence in female sex workers point to a sharply rising trend in at least two cities of India. A study among STD patients in Pune, West India, found an HIV prevalence of almost 9% in 1991 and 17% in 1992. As of March 1992, HIV prevalence among blood donors ranged from 0.1% to 1.8% in four cities of northern, northeastern, southern and western India.

\* \* \*

The magnitude of the HIV/AIDS pandemic and the relative importance of the different routes of transmission are not, as yet, fully established in the following regions: East Asia and the Pacific; Eastern Europe and Central Asia; North Africa and the Middle East. However, significant foci of HIV spread have been reported from several areas within these regions since the mid 1980s. Approximately 15 000 AIDS cases are estimated to have occurred among men, women and children in these parts of the world to date; almost 5000 have been reported.

#### **East Asia and the Pacific**

WHO estimates that over 25 000 cumulative adult HIV infections had occurred in this region by late 1992 (Table 1). The limited data available indicate that the 663 cumulative AIDS cases reported as of January 1993 represent reasonably accurately the current status of the pandemic in most of East Asia and the Pacific. A large proportion of these AIDS cases were people with haemophilia who were transfused with HIV-infected blood products in the early to mid 1980s.

Yunnan Province, China, is geographically contiguous with South-East Asia, and the outbreak of HIV infections among injecting drug users in that province may be considered part of the epidemic in South-East Asia. The likelihood of further spread into adjoining Guangxi and Guangdong Provinces of China, as well as into Hong Kong, remains of great concern.

#### **Eastern Europe and Central Asia**

In two countries, localized outbreaks of HIV transmission have occurred in infants and young children as a result of unsafe medical practices. In the Kalmykia (Russian Federation) outbreak, several hundred children were infected through injections of medicines using shared syringes that had been contaminated with HIV-infected blood. In the Romanian outbreak, in

which it is believed between 1000 and 2000 children were involved, transmission occurred through transfusions of unscreened blood, and possibly as a result of the use of needles and/or syringes that had not been properly disinfected or sterilized.

However, there is no reason to believe that these are the main routes of HIV transmission in this region. As in other regions, sexual transmission is probably the predominant route.

As of mid 1993, WHO estimates that there have been about 50 000 cumulative HIV infections in adults in Eastern Europe and Central Asia (Table 1). More than 3000 cumulative adult and paediatric AIDS cases are estimated by WHO to have occurred in this region, 2850 having been reported.

HIV prevalence levels among injecting drug users of at least 10% have been reported in Poland since 1989. However, few other epidemiological studies of injecting drug users have been reported, and the magnitude of the HIV/AIDS problem in this population in Eastern Europe and Central Asia remains poorly defined.

### **North Africa and the Middle East**

The few studies which are available regarding this region suggest that the extensive spread of HIV began in some parts of North Africa and the Middle East in the late 1980s. As of mid 1993, WHO estimates that more than 75 000 cumulative adult HIV infections have occurred in North Africa and the Middle East (Table 1). An HIV prevalence as high as 40% has been found among female sex workers in southern Sudan and Djibouti, both of which are part of the HIV/AIDS epidemic in sub-Saharan Africa.

Only limited and indirect information is available regarding the extent of high-risk behaviours in North Africa and the Middle East. For example, reports have suggested substantial numbers of STDs among the employees of some oil companies. Substantial trade in drugs such as heroin also appears to occur in some parts of the region.

An HIV prevalence of over 1% was found in 1989 among female sex workers detained by police in one North African country. An HIV prevalence of about 14% was reported among injecting drug users known to police authorities in one Gulf state in 1989.

Of the approximately 1500 HIV infections among resident and immigrant expatriates reported over the past seven years in another Gulf state, one-third were believed to have occurred during 1992 alone, indicating the rapid evolution of the epidemic in the region.

### III. Global estimates and projections of HIV/AIDS

Uncertainties about the potential spread of HIV and the ultimate dimensions of the HIV/AIDS pandemic have existed since the initial recognition of AIDS in the early 1980s. The major uncertainties include:

- when, and at what level, HIV prevalence will peak in different populations at risk in the various geographical areas, and
- the rate at which HIV-infected children and adults will ultimately develop AIDS and die.

Despite these uncertainties, a variety of methods and models have been developed for making future projections of the pandemic.

The first step in making future projections is to gauge the current magnitude of the HIV pandemic. Here, the major problem is that HIV infection is largely silent — AIDS cases are the only visible part of the HIV "iceberg". Attempting to estimate the number of HIV infections from the number of AIDS cases has several major disadvantages. To begin with, the number of AIDS cases may itself be seriously underestimated in some countries because of inadequate diagnostic facilities and poor reporting mechanisms. Even if the true number of AIDS cases were known, estimating the number of HIV infections from this number is fraught with difficulty because of the long and variable time between initial HIV infection and the onset of AIDS symptoms. Moreover, because of the long interval between infection and illness, AIDS cases at best reflect the level and distribution of HIV infection 5-10 years earlier.

In making estimates of the current magnitude of HIV spread, WHO therefore draws on other sources of information, such as studies of HIV prevalence in specific population groups and areas, the estimated size of such groups, prevalence in neighbouring areas, and trends over time, for example the changes in prevalence from year to year in a given group (see Figure 5). WHO's estimates of cumulative HIV infections in adults, and of current and projected HIV prevalence by "macro" region, are shown in Tables 1 and 2 respectively.

The ultimate long-term dimensions of the HIV/AIDS pandemic cannot yet be forecast with any degree of confidence. However, on the basis of available data on the current global status of the pandemic and recent trends in its spread, WHO has generated a plausible range of projected new HIV infections during the 1990s. In making projections of the future magnitude of the pandemic, WHO uses the lower limits of its estimated regional ranges of HIV prevalence. The results of HIV/AIDS forecasting by WHO should thus be considered conservative. During this decade, WHO projects that around 10-15 million new HIV

infections may be expected in adults, mostly in developing countries. During the same period, WHO projects that as many as 5-10 million children will be HIV-infected at birth or through breast-feeding, the majority of them in sub-Saharan Africa. By the year 2000, the cumulative number of HIV-related deaths in adults is predicted to rise to more than 8 million from its current total of 2 million.

Projections of the number of AIDS cases in infants and children are based on perinatal transmission rates of about 30%. This means that up to 70% of infants born to HIV-infected mothers will not be infected. However, because their infected mothers are likely to die of AIDS within 5 to 10 years of their birth, these uninfected infants will constitute a growing population of orphans. Already as many as 5-10 million children under 10 years of age will be orphaned by the end of the 1990s as a result of the AIDS-related deaths of their mothers, or both parents. The number of orphans will increase further in the early years of the next century as a result of the death of those parents infected with HIV in the 1990s.

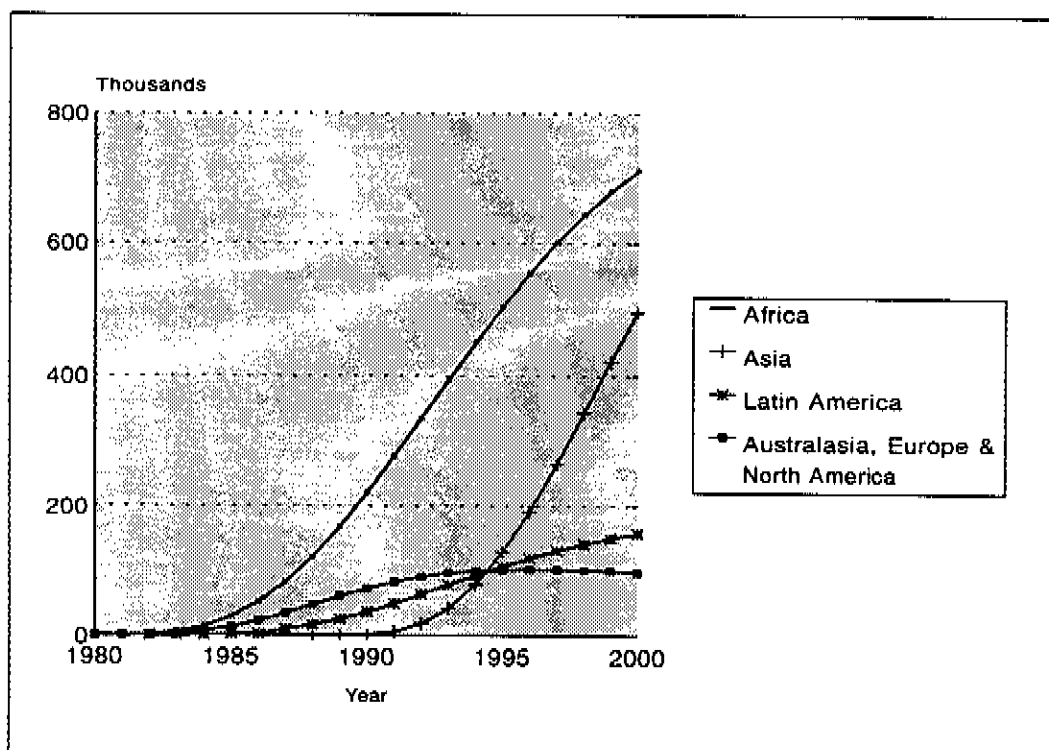
For the year 2000, the current WHO projection is that there will be a cumulative total of 30-40 million HIV infections in men, women and children, of which more than 90% will be in the developing countries. The projected cumulative total of adult AIDS cases is close to 10 million. Table 2 shows WHO's estimates, by "macro" region, of the number of adults infected with HIV as of mid 1993, and its projections of the number who will be living with HIV infection in the year 2000. Figure 6 illustrates estimated and projected annual AIDS incidences in the same regions.

**Table 2. Estimated and projected HIV prevalence in adults by "macro" region**

| "Macro" region                      | Mid 1993                              |  | 2000                     |                                       |
|-------------------------------------|---------------------------------------|--|--------------------------|---------------------------------------|
|                                     | Estimated HIV prevalence <sup>1</sup> | Estimated population aged 15-49 years (1990) | Projected HIV prevalence | Projected population aged 15-49 years |
| Australasia, Europe & North America | > 1.2 million                         | 646 million                                  | 1 million                | 675 million                           |
| Latin America & Caribbean           | > 1.3 million                         | 227 million                                  | > 2 million              | 282 million                           |
| Africa                              | > 6.5 million                         | 289 million                                  | > 9 million              | 397 million                           |
| Asia                                | 2 million                             | 1527 million                                 | 8 million                | 1843 million                          |
| <b>Global Total</b>                 | <b>&gt; 11 million</b>                | <b>2689 million</b>                          | <b>&gt; 20 million</b>   | <b>3197 million</b>                   |

<sup>1</sup> Total number of HIV-infected people currently alive.

Figure 6. Estimated and projected annual AIDS incidences<sup>1</sup> by "macro" region — 1980-2000



<sup>1</sup> Number of new AIDS cases each year.

The increased mortality among adults and children has raised concerns that AIDS may become so devastating as to reverse positive population growth rates and wipe out entire populations. In December 1989, WHO, in conjunction with the United Nations Population Division, used six mathematical models to examine the demographic consequences of the AIDS pandemic. In a population with a 3% growth rate, modelling showed that a negative growth rate would result only when HIV prevalence in the entire population exceeded 40% — a level that has not, thus far, been seen in any general population.

During the 1990s, the impact of AIDS will be greatest in large urban areas of sub-Saharan Africa, especially in Eastern and Central Africa, where today, in some cities, as many as a quarter to one-third of all adults aged 15-49 are infected with HIV. In such cities, AIDS deaths in young children and in those aged 15-49 may reduce expected population growth by over 30%, and the adult mortality rate may more than triple. In addition, the potential exists for the devastating spread of the pandemic throughout Asia — a continent in which over half of the world's population live.

\* \* \* \* \*