
Abstracts and Reports



Status of the AIDS Epidemic

Eight years have passed since the United States Centers for Disease Control reported the occurrence of an unusual disease in five homosexual men in San Francisco. This was the first awareness of an epidemic that is now known to have begun before 1981 with the silent spread of the human immunodeficiency virus (HIV) throughout the world during the mid- to late 1970s. The magnitude of HIV's spread can still only be estimated. According to the World Health Organization, 5 to 10 million people are currently infected worldwide, and, using the best available data, the Pan American Health Organization estimates that 2.0 to 2.5 million of those infected people reside in the Region of the Americas.

CURRENT KNOWLEDGE ABOUT AIDS

A vast amount of information has been gathered about HIV and many significant advances have been made in understanding the virus's genetic composition and how it interacts with human cells. However, the knowledge that has emerged

leads to the sobering conclusion that public health interventions will be more complex and difficult than had been thought. For example, the virus has an impressive ability to change its outer envelope, the part of the virus which is essential for its attachment to cells and which is very active immunologically. One single amino acid change in the envelope glycoprotein may result in a total loss of reaction with antibodies produced by the host. These changes take place with amazing frequency as the virus makes mistakes—in its favor—during replication. Various new mechanisms have been described by which the virus can incorporate itself into a number of cells other than lymphocytes, its primary targets. Moreover, laboratory studies suggest that under certain conditions, the human immune response itself may contribute to enhancement of viral replication in human monocytes. Finally, many areas of the viral structure which contribute to its infectiveness are not readily accessible to the immune system.

There is considerable optimism regarding the possibility of developing chemotherapeutic approaches to contain, retard, or stop the currently inevitable deterioration of the human immune system. However, much more pessimism exists regarding the possible development of a vaccine. Even if a vaccine were available which adequately stimulated the production of antibodies, it might not protect against infection by this virus.

Sources: Pan American Health Organization, Acquired Immunodeficiency Syndrome (AIDS) in the Americas (Document CD33/21 and Annex), Washington, D.C., 11 August 1988; and AIDS in the Americas, Presentation to the XXXIII Meeting of the Directing Council of PAHO by Dr. Ronald St. John, Program Coordinator, Health Situation and Trend Assessment, Pan American Health Organization, Washington, D.C., 28 September 1988.

It is now clear that the asymptomatic infected person is not disease-free; the slow, steady, progressive deterioration of the immune system and the inevitable progression from an asymptomatic infected state to AIDS may take much longer than was originally supposed. Roughly 3% of infected people develop AIDS per year; only about 18% to 20% of those infected will develop the disease within five years and 48% within 10 years. It is estimated that the median time from infection to disease may be as long as 14 years. The implication is that asymptomatic infected persons who may have no reason to be tested for AIDS may remain undetected and infectious for a very long period of time. Also, infected people must be persuaded to change their lifestyles and sexual behaviors and sustain those changes for a very long time.

Evidence has also come to light that a small number of infected people may lose their antibody production when the virus goes into a dormant phase, a phenomenon that has been found in both adults and children. In these people, the virus enters quietly and may undergo rapid proliferation with a readily detectable antibody response. Then follows a gradual slowdown in replication and finally a truly dormant period of unknown duration with a concomitant shutdown of the antibody response. Thus, an infected, antibody-positive person may no longer be detectable by currently available tests, but nevertheless remains infectious.

In summary, the more that is learned, the more apparent it is how difficult and complex the fight against AIDS will be.

CURRENT SITUATION IN THE AMERICAS

The Pan American Health Organization initiated AIDS surveillance throughout the Region of the Americas in 1983.

Only officially reported cases of full-blown AIDS have been tabulated, and, as elsewhere in the world, the number of reported AIDS cases grossly underestimates the magnitude of the problem. As of 2 March 1989, 101,368 cases of AIDS had been reported in the Americas, and of those cases, 55,825 had died.

Table 1 reveals the large differences that exist between different subregions in totals of cases reported. The Andean group of countries had reported 772 cases through 31 December 1989, and the Southern Cone countries had reached a total of 492, while Brazil had reported 4,946 cases. In the Central American countries and Panama, there had been 503 reported cases, while the total in Mexico was 2,158. The Latin Caribbean, which includes Cuba, the Dominican Republic, and Haiti, had reported a total of 2,593 cases, and the non-Latin Caribbean countries 1,198 cases. North America had reported a total of 88,706 cases, the great majority of those from the United States of America. Five countries—the United States, Brazil, Canada, Haiti, and Mexico—had contributed approximately 96% of the total number of cases in the Region (Figure 1).

The percentage increase between 1986 and 1987 in the number of reported cases in the subregions is shown in Table 2. Although reported cases from North America increased by 13%, several other subregions experienced much more dramatic increases, for example, 213% in the Southern Cone countries, 155% in the Latin Caribbean, and 117% in the Central American Isthmus.

This epidemic has been tracked by monitoring the total number of accumulated cases since 1981, but comparisons based on the total number of cases are not particularly useful because they do not take into account the size of the populations out of which the cases arise. A better method of comparison is provided

Table 1. Cumulative reported AIDS cases and deaths for subregions and countries of the Americas, through 31 December 1988, as received by 2 March 1989.

| Country/subregion | Cases | Deaths | Country/subregion | Cases | Deaths |
|----------------------------------|--------|--------|---|----------------|---------------|
| Latin America^a | 11,464 | 4,399 | Caribbean | 1,198 | 699 |
| Andean Area | 772 | 377 | Anguilla | 3 | 0 |
| Bolivia | 16 | 12 | Antigua and Barbuda | 3 | 2 |
| Colombia | 308 | 98 | Bahamas | 269 | 130 |
| Ecuador | 45 | 26 | Barbados | 70 | 50 |
| Peru | 137 | 75 | Cayman Islands | 4 | 2 |
| Venezuela | 266 | 166 | Dominica | 6 | 6 |
| Southern Cone | 492 | 242 | French Guiana | 113 | 78 |
| Argentina | 315 | 158 | Grenada | 16 | 5 |
| Chile | 123 | 48 | Guadeloupe | 86 | 46 |
| Paraguay | 9 | 8 | Guyana | 40 | 19 |
| Uruguay | 45 | 28 | Jamaica | 79 | 52 |
| Brazil | 4,946 | 2,564 | Martinique | 46 | 21 |
| Central American Isthmus | 503 | 243 | Montserrat | — | — |
| Belize | 11 | 8 | Netherlands Antilles | 26 | 16 |
| Costa Rica | 93 | 41 | Saint Lucia | 11 | 8 |
| El Salvador | 55 | 16 | St. Kitts and Nevis | 18 | 9 |
| Guatemala | 47 | 36 | St. Vincent and the Grenadines | 14 | 6 |
| Honduras | 211 | 97 | Suriname | 11 | 11 |
| Nicaragua | 2 | 2 | Trinidad and Tobago | 336 | 206 |
| Panama | 84 | 43 | Turks and Caicos Islands | 7 | 6 |
| Mexico | 2,158 | 602 | Virgin Islands (UK) | 1 | — |
| Latin Caribbean ^b | 2,593 | 371 | Virgin Islands (US) | 39 | 26 |
| Cuba | 43 | 11 | North America | 88,706 | 50,727 |
| Dominican Republic | 701 | 65 | Bermuda | 100 | 78 |
| Haiti | 1,849 | 295 | Canada | 2,449 | 1,259 |
| | | | United States of America ^{b,c} | 86,157 | 49,390 |
| | | | Regional total | 101,368 | 55,825 |

Source: Pan American Health Organization. AIDS Surveillance in the Americas. Health Situation and Trend Assessment Program, PAHO/WHO Global Program on AIDS in the Americas.

^aFrench Guiana, Guyana, and Suriname included under Caribbean.

^bPuerto Rico included under USA.

^cData through 13 February 1989.

by calculating the ratio of reported cases in a given calendar year to the median population estimates for that year. This ratio, shown in Table 2, reveals that prevalence is highest in North America, with 67.2 AIDS cases per million population, and that the non-Latin Caribbean area, with 53.9 cases per million in 1987, is second.

Even this subregional average obscures significant differences that exist between countries. For example, there were 11.1 AIDS cases reported per million population in 1987 in Brazil, while the ratios in French Guiana, Bermuda, and the Baha-

mas ranged from 240 to 400 cases per million inhabitants.

With the exception of Montserrat, AIDS cases, and thus evidence of the spread of HIV, have been found in all the countries and territories of the Americas.

Patterns of Transmission

Sexual transmission. Initially, AIDS cases in Latin America were reported among male homosexuals and bisexuals with a history of travel outside Latin America and the Caribbean. Sexual transmission among males continues to

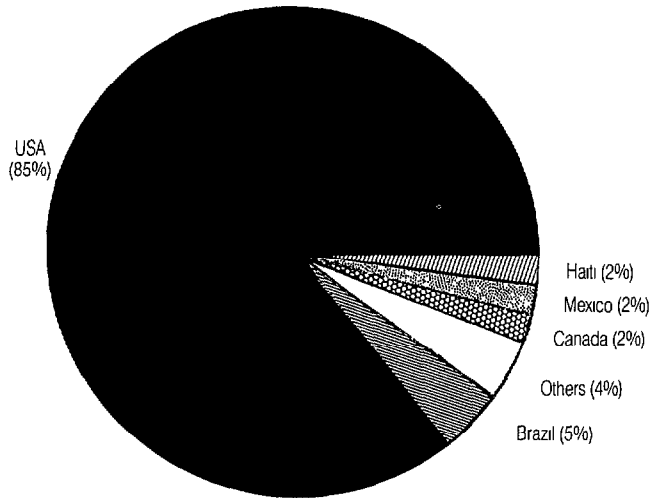


Figure 1. Distribution of reported AIDS cases, by country in the Americas, based on information as of 2 March 1989.

be the predominant pattern in most countries in the southern part of South America (Chile, Argentina, Uruguay, and Paraguay), as well as the Andean countries (Venezuela, Colombia, Ecuador, Peru, and Bolivia).

Seroprevalence studies of HIV in some groups of homosexual and bisexual men, most of them volunteers, have disclosed rates of infection of 8.3% in the Dominican Republic in 1986, 20% in Costa Rica in 1985-1986, 37.5% in Brazil in 1987, and 30.9% in Mexico in 1987. Although these

rates are far below the very high rates (above 70%) of HIV infection found among some homosexual groups in some areas of the United States, the difference may only indicate the later introduction and spread of HIV infection among homosexual men in Latin American and Caribbean countries. Indeed, HIV prevalence rates found in prospective studies have risen from below 5% to 10-20% in some countries, such as Argentina and Uruguay.

The proportion of cases in which het-

Table 2. Number of AIDS cases and ratios per million population in 1986 and 1987, with percentage increase.

| Subregion/country | 1986 | | 1987 | | % increase |
|--------------------------|--------|------------------------|--------|------------------------|------------|
| | Cases | Cases per million pop. | Cases | Cases per million pop. | |
| Latin America | 1,807 | 4.5 | 3,337 | 8.1 | 80 |
| Andean Area | 111 | 1.3 | 246 | 2.9 | 123 |
| Southern Cone | 42 | 0.8 | 129 | 2.5 | 213 |
| Brazil | 844 | 6.1 | 1,574 | 11.1 | 82 |
| Central American Isthmus | 62 | 2.3 | 139 | 5.0 | 117 |
| Mexico | 440 | 5.4 | 451 | 5.4 | 0 |
| Latin Caribbean | 308 | 13.2 | 798 | 33.7 | 155 |
| Caribbean | 252 | 35.1 | 393 | 53.9 | 54 |
| North America | 15,886 | 59.5 | 18,111 | 67.2 | 13 |
| Regional total | 17,945 | 26.5 | 21,841 | 31.7 | 20 |

erosexual transmission of HIV is implicated is still below 10% of all cases in most countries of Latin America. However, in the Caribbean and parts of Central America, significant numbers of AIDS cases and HIV infections in women are being detected. As an example, 24 cases of AIDS were diagnosed in Jamaica in 1987, of which 10 occurred in women.

Studies of HIV infection rates in female prostitutes have found rates ranging from zero in some studies in Mexico and Argentina to 49% in one limited study in Haiti.

Transmission associated with blood and blood products. In some countries, notably Costa Rica, Mexico, Brazil, and Jamaica, between 5% and 10% of all cases of AIDS are presumed to be secondary to blood transfusions. HIV antibody prevalence among blood donors is highly variable, ranging from 0.00% among 4,000 donors in Argentina and 0.1% in more than 1,400 blood samples tested in Barbados to as high as 1.6% in the Dominican Republic and 7.3% among some paid blood donors in high-risk areas of Mexico City.

The contribution of contaminated needles and syringes to the transmission of the AIDS virus among I.V. drug abusers appears to be less significant in Latin America than in the United States. Less than 1% of AIDS cases are believed to be associated with I.V. drug abuse in Latin America, as opposed to 17% in the USA.

Transmission in children. Cases of perinatal transmission in Latin America and the Caribbean have been few so far. For example, less than one-fifth of cases in infants and children have been associated with perinatal transmission in Brazil. In Mexico, 16% of cases occur in infants of infected mothers. However, limited studies in Haiti have found prevalences of HIV infection of 3% to 8% in

pregnant women. The small number of reported cases in women and children may be related to the recent introduction of the virus into these two groups, as well as inadequate surveillance methods for identifying such cases.

The majority of cases in children outside the United States have thus far been associated with transfusion of blood and blood products, and in rare cases with sexual abuse and child prostitution. In contrast, more than 75% of pediatric cases in the United States can be traced to a parent with proven HIV infection or who engages in a high-risk behavior, principally I.V. drug abuse.

THE GLOBAL AIDS SITUATION

As of 31 January 1989, 145 countries had reported 143,156 cases of AIDS to WHO's Global Program on AIDS (Table 3). As a result of underreporting and underdiagnosis, this total probably represents a two- to fourfold underestimate of the actual number of cases. Figure 2 illustrates the evolution of the epidemic, based on case reports, and the distribution of those cases by region.

In Europe, 28 countries have reported almost 19,000 AIDS cases. The incidence rates per million population have been highest in France, Switzerland, and Denmark. WHO estimates that about 500,000 persons in Europe are infected with the AIDS virus.

The number of African countries reporting AIDS cases to WHO has increased substantially in the past year. In the most recent tabulation, 46 countries reported over 21,000 cases of AIDS.

So far, the number of cases reported from both Asia and Oceania has remained fairly low, with only two countries in Oceania (Australia and New Zealand) reporting substantial numbers of cases. Many of the Asian AIDS cases have been linked to persons who had vis-

Table 3. Cumulative AIDS cases for countries and regions worldwide, as reported to WHO by 31 January 1989.

| Country/region | Number of cases | Country/region | Number of cases |
|-----------------------------|-----------------|---------------------------------------|-----------------|
| Africa | 21,213 | Zambia | 1,296 |
| Algeria | 13 | Zimbabwe | 119 |
| Angola | 85 | Americas^a | 101,368 |
| Benin | 15 | Asia | 324 |
| Botswana | 34 | Afghanistan | — |
| Burkina Faso | 26 | Bahrain | — |
| Burundi | 1,408 | Bangladesh | — |
| Cameroon | 62 | Bhutan | — |
| Cape Verde | 18 | Brunei Darussalam | — |
| Central African Republic | 432 | Burma | — |
| Chad | 11 | China | 3 |
| Comoros | 1 | China (Province of Taiwan) | 1 |
| Congo | 1,250 | Cyprus | 5 |
| Côte d'Ivoire | 250 | Democratic People's Republic of Korea | — |
| Djibouti | 1 | Democratic Yemen | — |
| Egypt | 6 | Hong Kong | 13 |
| Equatorial Guinea | — | India | 16 |
| Ethiopia | 81 | Indonesia | 3 |
| Gabon | 18 | Iran (Islamic Republic of) | — |
| Gambia | 52 | Iraq | — |
| Ghana | 227 | Israel | 76 |
| Guinea | 10 | Japan | 97 |
| Guinea-Bissau | 29 | Jordan | 3 |
| Kenya | 2,732 | Kuwait | 1 |
| Lesotho | 2 | Lebanon | 5 |
| Liberia | 2 | Malaysia | 4 |
| Libyan Arab Jamahiriya | — | Maldives | — |
| Madagascar | — | Mongolia | — |
| Malawi | 2,586 | Nepal | — |
| Mali | 29 | Oman | 6 |
| Mauritania | — | Pakistan | 6 |
| Mauritius | 1 | Philippines | 20 |
| Morocco | 18 | Qatar | 21 |
| Mozambique | 27 | Republic of Korea | 4 |
| Niger | 43 | Singapore | 10 |
| Nigeria | 13 | Sri Lanka | 1 |
| Reunion | 8 | Syrian Arab Republic | 4 |
| Rwanda | 987 | Thailand | 8 |
| Sao Tomé and Príncipe | 1 | Turkey | 17 |
| Senegal | 149 | Viet Nam | — |
| Seychelles | — | Yemen | — |
| Sierra Leone | 5 | Europe | 18,971 |
| Somalia | — | Albania | — |
| South Africa | 150 | Austria | 236 |
| Sudan | 81 | Belgium | 408 |
| Swaziland | 14 | Bulgaria | 3 |
| Togo | 2 | Czechoslovakia | 12 |
| Tunisia | 21 | Denmark | 358 |
| Uganda | 5,508 | Finland | 37 |
| United Republic of Tanzania | 3,055 | France | 5,655 |
| Zaire | 335 | German Democratic Republic | 6 |

^aSee Table 1 for country totals.

Table 3. (Continued)

| Country/region | Number of cases | Country/region | Number of cases |
|------------------------------|-----------------|--------------------------------|-----------------|
| Germany, Federal Republic of | 2,779 | USSR | 5 |
| Greece | 170 | United Kingdom | 1,982 |
| Hungary | 17 | Yugoslavia | 65 |
| Iceland | 10 | Oceania | 1,280 |
| Ireland | 64 | Australia | 1,168 |
| Italy | 3,008 | Cook Islands | — |
| Luxembourg | 13 | Fiji | — |
| Malta | 12 | French Polynesia | 3 |
| Monaco | 1 | Kiribati | — |
| Netherlands | 694 | Mariana Islands | — |
| Norway | 100 | New Caledonia and Dependencies | 2 |
| Poland | 5 | New Zealand | 100 |
| Portugal | 199 | Papua New Guinea | 6 |
| Romania | 9 | Samoa | — |
| San Marino | — | Solomon Islands | — |
| Spain | 2,165 | Tonga | 1 |
| Sweden | 256 | Tuvalu | — |
| Switzerland | 702 | Vanuatu | — |
| | | World total | 143,156 |

^aSee Table 1 for country totals.

Source: World Health Organization. Acquired immunodeficiency syndrome (AIDS)—data as of 31 January 1989. *Wkly Epidemiol Rec* 64(5):29-30, 1989.

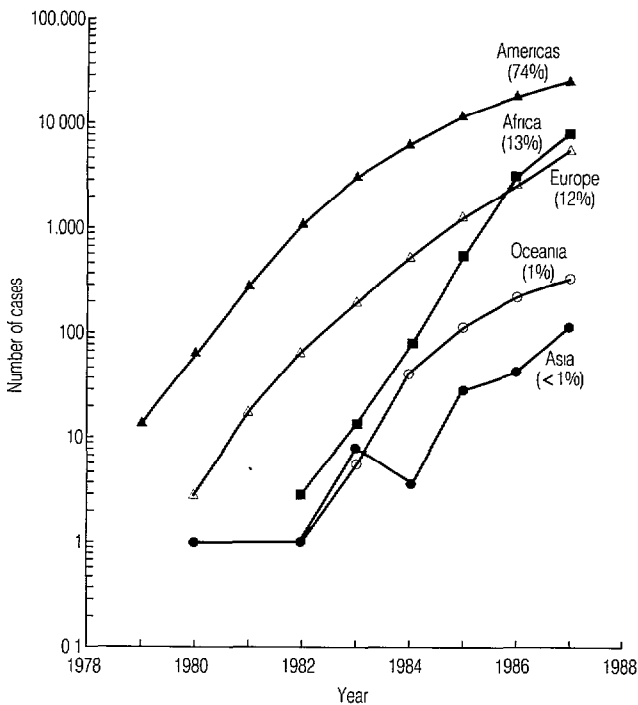


Figure 2. Reported cases of AIDS, by region, 1979-1987.

ited areas where AIDS is more prevalent.

In Europe, Australia, and New Zealand, as in the Americas, most AIDS cases have occurred among homosexual and bisexual men and intravenous drug users between the ages of 20 and 49. The proportion of cases acquired through heterosexual contact in these areas is estimated at about 5%. In Africa, however, heterosexual transmission is a major factor in the spread of HIV, along with transfusion of unscreened blood and use of unsterilized needles or syringes. Perinatal transmission is also a significant problem in Africa. In some urban areas, HIV infection has been found in up to 20% of pregnant women.

Outlook for the Future

In the coming years, the situation will get worse. The number of people infected with HIV is increasing, since trans-

mission is still taking place. The vast majority of infected people will progress to disease. Thus, given the long period between infection and disease, the number of cases of AIDS will continue to increase for some time in spite of prevention efforts already under way.

This disease will have repercussions for the basic legal, moral, and religious principles of society. Its impact on health care services and the burden that caring for affected people will place on society will be enormous. In economic terms alone, the cost would be very high even if an effective preventive measure were found tomorrow. AIDS cannot be approached with a traditional vertical disease-control mentality. Community participation, full commitment on the part of the health sector and other sectors such as education and finance, and planning for the future will be essential to minimize the impact of AIDS on all societies.



The World Health Organization's Global Program on AIDS

As many as 100 million persons may be infected with HIV by 1991. As many as three million new AIDS cases may occur between 1987 and 1991 among persons already infected by HIV in 1986. No vaccine will be available for widespread use. For each AIDS case, there may be up to 100 HIV-infected persons.

Even accepting that these projections are tentative and issued with great caution pending the collection and analysis of more worldwide epidemiological data, the numbers are still staggering. Without question, the epidemic of infection by HIV and related retroviruses is an international health problem of extraordinary

scope that demands unprecedented and urgent global responses. The World Health Organization (WHO), fulfilling its constitutional mandate to direct and coordinate international health, has responded by establishing its Global Program on AIDS (GPA).

In late 1983, as soon as it became clear that AIDS was a worldwide health problem, WHO began to consider how it could best confront this epidemic. By early 1986, having determined that an AIDS program would be useful, a small unit was set up at the Organization's headquarters in Geneva. In May of that year, the World Health Assembly, in res-