

# Epidemiological Bulletin

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## Special Program on the Acquired Immunodeficiency Syndrome of the World Health Organization

### Introduction

As of 26 March 1987, 45,597 Acquired Immunodeficiency Syndrome (AIDS) cases had been reported to the World Health Organization (WHO). The current number of reported cases from many areas of the world, however, does not reflect the actual AIDS situation. A total of 130 countries

reported on AIDS, of which 101 reported cases. In Table I the figures are compared with those reported to the Thirty-ninth World Health Assembly.

The name "human immunodeficiency virus" (HIV) recommended by the International Committee on Taxonomy of Viruses for the etiological agent of AIDS — previously referred to as lymph-

**Table 1. Total number of cases and number of countries reporting by continent.**

Continent	26 March 1987			25 March 1986		
	Cases	Countries reporting	Countries reporting 1 or more cases	Cases	Countries reporting	Countries reporting 1 or more cases
Africa	3,531	36	22	31	5	2
Americas	36,782	45	39	19,756	43	32
Asia	112	19	12	46	10	6
Europe	4,732	27	26	2,053	23	20
Oceania	440	3	2	183	2	2
Total	45,597	130	101	22,069	83	62

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adenopathy-associated virus/human T-lymphotropic virus, type III (LAV/HTLV-III) — has been adopted by WHO.

Additional human retroviruses have been identified, principally in west Africa. A virus identified by French researchers as lymphadenopathy-associated virus, type 2 (LAV-2) was isolated from persons originating from west Africa and having clinical and immunological features typical of AIDS. A virus identified by United States researchers as human T-lymphotropic virus, type 4 (HTLV-4) was isolated from asymptomatic persons in west Africa. These two viruses appear quite similar to each other, are both distinctly different from HIV, and appear antigenically closer to the simian immunodeficiency virus (STLV-III) than to HIV. Seroepidemiological studies suggest that LAV-2 or HTLV-4 antibodies are present in a small percentage of healthy subjects in several west African countries.

The number of countries in Africa reporting on AIDS to WHO has increased substantially. National and international collaborative studies have established the basic features of AIDS and HIV epidemiology in Africa, including the knowledge that transmission occurs in the same manner as in other parts of the world (sexual, parenteral, perinatal). The primacy of bidirectional heterosexual transmission (male to female; female to male) in the epidemiology of AIDS in Africa is also accepted. Additional studies have established the importance of blood transfusions and injections with non-sterile equipment in HIV transmission. Perinatal transmission is also recognized to be important, especially in areas where 5-10% of pregnant women have been recorded as HIV seropositive. There is no epidemiological support for transmission through casual contacts (including within households), and there is considerable epidemiological evidence against the hypothesis of insect vector transmission of the disease. While the precise extent of HIV within Africa is not known, central, eastern and parts of southern Africa appear most affected, and western Africa appears less affected. The actual number of HIV-infected persons or AIDS cases is not known. An estimate of one million infected persons (with an extrapolated estimate of an annual incidence of at least 10,000 AIDS cases) has been advanced, but is considered a minimum by some scientific observers.

In the Americas (as in Europe and Australia) the basic epidemiological patterns have not changed during the past year, and cases occur mainly among young (20-49 year old) homosexual or bisexual men and intravenous drug users. However, the estimate of the proportion of cases of AIDS acquired through

heterosexual contact has increased from 1 to approximately 4%. The United States Public Health Service has estimated that 270,000 cases of AIDS will have occurred in the USA by 1991 (more than 8 times the approximate 32,000 reported cumulatively since the beginning of the epidemic); the majority are expected to occur in persons already infected with HIV. AIDS cases have been reported from 39 countries in the Americas in addition to the USA, with the largest numbers from Brazil, Canada, Haiti, Mexico, Trinidad and Tobago, and the Dominican Republic.

In Central and South America the epidemiological picture is dominated by the "western" pattern, involving homosexual/bisexual men and intravenous drug abusers. However, in Haiti an increasing number of cases apparently associated with heterosexual transmission have been reported; the male/female AIDS case ratio is currently about 3:1 (compared with ratios of 10:1 or greater in the USA, Europe and Australia). It is believed that the situation may be similar in other parts of the Caribbean area.

In Europe most countries are now considered to be facing an epidemic situation. Throughout Europe an estimated 500,000 to one million persons may be infected with HIV. The highest rates (cumulative cases of AIDS per million population) have been reported from: Switzerland (30.1), Denmark (25.6), France (22.3), and Belgium (20.9). The percentage of cases originating from Africa or the Caribbean has decreased (now about 8% of all reported cases), while that of cases associated with intravenous drug abuse is increasing rapidly (from 5% in June 1985 to 12% in October 1986). This phenomenon has been noted particularly in southern Europe. On the basis of current trends, between 25,000 and 30,000 cases of AIDS are expected to have occurred in Europe by the end of 1988.

Relatively few AIDS cases have been reported in Asia, and most of those confirmed have been associated with exposure to blood products or persons of western origin. However, serological evidence of HIV infection has been detected in male and female prostitutes in several countries and indigenous HIV transmission has been recorded. Seroepidemiological studies suggest that, so far, HIV has not widely penetrated the general population.

In Oceania the 440 cases were from Australia (407) and New Zealand (33), and were typical of the "western" epidemiological pattern.

Earlier estimates of the rates of progression from asymptomatic HIV infection to AIDS and other AIDS-related syndromes have been revised up-

wards. On the basis of current information it appears that 10% to 30% of HIV-infected persons will develop AIDS and 25% to 50% more will develop AIDS-related syndromes during a five-year period. The annual risk of progressing from asymptomatic HIV-infected to AIDS appears to increase with time (i.e., the risk during the fifth year of infection appears greater than the risk during the second year). These current data suggest that the majority of HIV-infected persons may develop AIDS during the first 10 years after HIV infection and that the remainder may have AIDS-related syndromes.

HIV is neurotropic. The precise cellular element(s) infected are not fully understood, although mononuclear and multinuclear macrophages appear to support replication of HIV within the brain. HIV affects the neuraxis at all levels, resulting in clinical disorders involving the central and peripheral nervous systems. Approximately one-third of AIDS patients have clinical neurological findings attributable to HIV infection itself, rather than to opportunistic infections affecting the nervous system. The major clinical syndromes associated with HIV neurological infection include: subacute encephalopathy with progressive dementia, aseptic meningitis, encephalitis, and peripheral neuropathy. Given HIV's virological similarities with the lentiviruses (e.g. Visna virus), the occurrence of an epidemic of neurological disorders principally involving dementia among HIV-infected persons is considered possible during the next decade.

A recent clinical treatment trial among AIDS patients found that Zidovudine (Azidothymidine or AZT) prolonged life and was associated with clinical and immunological improvement. There were, however, side-effects, including bone marrow suppression. Longer-term benefits and risks are currently unknown. It may nevertheless represent the first major step towards the eventual development of safe and effective therapeutic agents. A pharmaceutical company has advised WHO that it is using WHO official statistics on AIDS as a basis for allocation between countries of available supplies of AZT after product registration. Analogues of Zidovudine (e.g. Dideoxycytidine) are under evaluation; it is hoped that they may offer increased antiviral efficacy with less toxicity. In addition, preliminary data suggest that the antiviral agent Ribavirin may prevent progression to AIDS among patients with lymphadenopathy syndrome.

Several prototype vaccines have reached the stage of immunogenicity and challenge testing in chimpanzees. Chimpanzees can be infected with HIV but do not demonstrate AIDS-like illnesses. Clinical

studies (phase I) for several prototype vaccine preparations will start during 1987. Current scientific consensus, however, is that no vaccine will be available for widespread human use for at least five years. In addition, since no vaccine has ever been prepared against a human retrovirus, several specialists in retrovirology have raised the possibility that the vaccines currently under development may not be protective.

### WHO Special Program on AIDS

The pandemic of HIV infection poses an unprecedented and urgent challenge to international public health. In January 1987, at its seventy-ninth session, the WHO Executive Board supported the priority accorded by WHO to activities for the prevention and control of AIDS. The WHO Special Program on AIDS was formally established by the Director-General on 1 February 1987. An unprecedented and coordinated global response is urgently required, in view of:

- *The magnitude of the epidemic.* The current magnitude of the HIV pandemic and its broad impact have been seriously underestimated. Further global spread and increase in HIV infection are certain to occur, and the evolution of the HIV pandemic cannot be accurately predicted.
- *The outcome of HIV infection.* The adverse health effect of HIV infection is of profound importance to the individual, the family and society. HIV infections threaten the health gains which had been projected in the developing world.
- *The social impact of HIV.* The personal, social and economic costs of the HIV pandemic are enormous. It threatens development through its impact on those aged 20 to 40 years and its effects on infant and maternal mortality.
- *The challenge of prevention and control.* International and national HIV control will require long-term efforts and commitment. As neither a vaccine nor therapy for large populations is likely to become available for at least several years, education is the key to preventing further spread. HIV control must be part of primary health care.

Available evidence suggests that we are witnessing the beginning of a major pandemic of infection with HIV (and perhaps with related retroviruses). While each feature of HIV is not in itself unprecedented, the combination of features as well as the timing appear to be without precedent. These features include:

- infection with HIV appears to be lifelong;
- infected persons may be asymptomatic for long periods yet capable of transmitting HIV;
- the natural history of HIV infection is not yet fully known, but the "at risk" period for progression to AIDS appears long;
- specific treatment (especially for infected persons not yet ill) and vaccine are not available;
- HIV is neurotropic and the ultimate burden of neurological pathology in the HIV-infected population is unknown;
- HIV is transmitted primarily sexually, from any infected person to his or her sexual partner, but also parenterally;
- perinatal transmission occurs, and as many as 50% of babies born to infected mothers may be affected;
- HIV-induced immunosuppression can interact with already existing endemic or epidemic diseases in the environment (e.g. tuberculosis);
- HIV-related issues have major potential impact in virtually all health areas (e.g. immunization, maternal health, child health, dental care, hospital care, infection control, sexually transmitted diseases, family planning).

The HIV situation therefore calls for extraordinary energy, creativity, and resources. The potential impact of public health interventions at this phase of the HIV pandemic is considerable. A strong emphasis on primary prevention, for individuals and for societies, is warranted.

The WHO Special Program on AIDS has two major tasks:

- to support and strengthen national AIDS programs throughout the world;
- to provide global leadership, help ensure international collaboration, and pursue global activities of general value and importance.

At the national level a plan of action for AIDS control and prevention is required, including the following major aspects.

- Creation of a national AIDS committee (or the equivalent), which is a concrete expression of national commitment to confront AIDS and HIV-associated problems. The committee should include representatives from health, social services, education and other relevant sectors.
- Implementation of an initial epidemiological and resource assessment. The initial assessment can be conducted within a relatively brief (four-to eight-week) period. This assessment may involve review

and critical analysis of existing data on AIDS and HIV infection collected within the country, or it may require collection and analysis of new information (e.g. AIDS case-finding, seroprevalence surveys of selected populations). The resource/infrastructure assessment should determine the ability of the existing health system to support the epidemiological, laboratory, clinical and prevention components of the national AIDS program.

- Based on findings of the initial epidemiological assessment, a suitable surveillance system should be established to provide timely and useful epidemiological information regarding AIDS and HIV infection to the national committee. In addition, serosurveys may be conducted among designated sectors of the population (e.g. blood donors, prostitutes, patients attending sexually transmitted disease clinics, pregnant women), and specific serological monitoring or other epidemiological studies could be considered.

- Laboratory support is required for epidemiological, clinical and prevention activities. On the basis of the initial assessment decisions are made regarding in-country serodiagnostic needs. Laboratory capability would be strengthened in accordance with these requirements.

- Education of health care personnel at all levels is important, both for management of patients and other HIV-infected persons, and for public health education.

- The principal goal of the national AIDS program remains the prevention of HIV transmission to uninfected persons and groups. Prevention activities will vary according to national situations, but should in general include consideration of the following broad issues:

- Sexual transmission: education of identified high-risk groups as well as of the general population;
- Transmission through blood transfusions: review of existing blood transfusion policies and practices; possible implementation of donor education and notification programs, laboratory screening of donors or donated blood;
- Transmission through intravenous drug use: education of high-risk groups;
- Transmission through non-sterile injection equipment used for medical purposes by medical or paramedical personnel (including traditional practitioners): education of health providers and of the public, additional assistance in helping to ensure use of

sterile injection equipment (or other instruments that pierce the skin);

– Perinatal transmission: education/counseling approaches; possible screening programs among certain groups of pregnant women and women of child-bearing age.

• Reduction of the impact of HIV infection: the psychological, family, economic, cultural, social and political impacts of HIV infection are enormous — those who are infected, their sexual partners, members of the household and others must be assisted in dealing with the related problems.

The strategies, structure and projected needs of the WHO Special Program on AIDS are detailed in document WHO/SPA/GEN/87.1, issued in March 1987.

(Source: WHO Fortieth World Health Assembly, Provisional Agenda Item 18.2, 27 March 1987.)

## Editorial Comment

This article presents a summary of the AIDS situation in the world and outlines the principal objectives and approaches of WHO's Special Program on AIDS.

The Pan American Health Organization (PAHO), as the WHO Regional Office for the Americas, fully participates in the implementation of the Special Program on AIDS in this Region. The PAHO program is currently providing technical cooperation to several national AIDS prevention programs and to date has mobilized 1.1 million dollars to this effect. The future success of the WHO/PAHO Special Program on AIDS will depend on the political will and the financial and administrative commitment of each individual Member Country to the national, regional, and global efforts needed to combat this unprecedented epidemic.

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## Consensus Statements on Transmission of Human Immunodeficiency Virus and Infection of Health Workers

During the Third Meeting of the WHO Collaborating Centers on AIDS held in Washington, D. C., 6 June 1987, consensus statements were prepared on two issues that are subject to widespread concern and controversy. They are transcribed below.

### Transmission of Human Immunodeficiency Virus (HIV)

Epidemiological studies in Europe, the Americas, Africa and Australia repeatedly have documented only three modes of HIV transmission:

- sexual intercourse (heterosexual or homosexual);
- contact with blood, blood products, semen or transplanted organs. The vast majority of contacts with blood involve transfusion of unscreened blood or the use of unsterilized sy-

ringes and needles by IV drug abusers or in other settings;

- mother to child — mostly before, and perhaps during or shortly after birth (perinatal transmission).

There is no evidence to suggest that HIV can be transmitted by the respiratory or enteric routes or by casual, person to person contact in any setting, including household, social, work, school or prison settings.

Epidemiological and laboratory studies have established that of the "body fluids," transmission seems limited to blood, semen, and vaginal/cervical secretions. Kissing has not been documented to pose a risk of HIV transmission. While unproven, some theoretical risk from vigorous "wet" kissing (deep kissing or tongue kissing) may exist.

There is no evidence to suggest that HIV trans-