AIDS: a global perspective

MUKEH KAPILA
Health Education Authority, London, United Kingdom

SUMMARY
The AIDS epidemic is a global phenomenon with significant social, economic, demographic, legislative and political implications, and crucial practical and ethical concerns for civil rights and public health. An overview of AIDS in the world is presented, based on the insight provided by the World Summit of Ministers of Health on Programmes for AIDS Prevention and the First International Conference on the Global Impact of AIDS, both held early in 1988.

INTRODUCTION
The first quarter of 1988 saw two major international conferences on AIDS in London. At the first, 148 countries, representing the vast majority of the world's peoples, participated in the World Summit of Ministers of Health on Programmes for AIDS Prevention, which was organized jointly by the Government of the United Kingdom and the World Health Organization (WHO) and held on 26-28 January. Six weeks later (8-10 March), over 1000 delegates and experts from various professional disciplines, institutions and international organizations, met at the First International Conference on the Global Impact of AIDS, co-sponsored by WHO and the London School of Hygiene and Tropical Medicine.

Scores of speakers, presentations, posters, exhibits, demonstrations and ministerial statements later, what fresh insight has been offered into the current state of the global AIDS epidemic? This article presents an overview of the world AIDS situation, drawing on the material presented at the two conferences in London.¹

CLINICAL UPDATE
The conferences provided a useful opportunity to state authoritatively and publicly the facts on the transmission of human immunodeficiency virus (HIV). These form the basis for preventive strategies. After a decade of intensive study of the epidemic, only three routes of transmission are known.

The first is penetrative sexual intercourse with an infected person; the partners may be men or a man and woman. Receptive anal intercourse and inflammatory genital disease increase the risk of transmission. There is no convincing evidence that genito-oral sex or kissing transmits the infection.

The second route is by inoculation with infected blood. In practice, this occurs principally through the transfusion of contaminated blood and blood components and the sharing of infected equipment between drug abusers. Medical injections using unsterile equipment and other skin-piercing practices (such as tattooing and acupuncture) are also potential means of transmission.

Third, HIV can be transmitted from an infected mother to the unborn fetus or to a baby during birth or breastfeeding. Up to 50% of the babies born to infected mothers may become infected; the prognosis for them is poor.

HIV is not transmitted by social contact, food or water, insect bites or toilet seats. It is not transmitted by contact at the workplace, with rare exceptions in health care settings. By January 1988, a total of 11 cases worldwide had been reported in which the virus was transmitted from infected patients to people caring for them. These mostly involved gross contamination or exposure through damaged skin or the mucous
membranes of the health care workers concerned. The follow-up of many hundreds of health care workers injured by infected needles shows that less than 1% have subsequently developed HIV.

Current global experience suggests that, within five years, 10-30% of people who are HIV positive progress to AIDS, and a further 25-50% to AIDS-related illnesses. AIDS itself is usually fatal within two years of onset. Evolving clinical experience suggests that the traditional classification of HIV, persistent generalized lymphadenopathy, AIDS-related complex (ARC) and AIDS is rather arbitrary and could usefully be replaced by two terms: asymptomatic HIV disease and symptomatic HIV disease.

Much has been learned in a short time about the morphology, genome structure and biological properties of the different varieties of HIV, as well as the pathogenesis of HIV infection. Despite rapid advances in molecular biology, recombinant DNA technology and immunology, an HIV vaccine is unlikely to be generally available for another 5-10 years, or even longer. No specific antiviral therapy is yet generally available and although zidovudine has shown the most promising results, it is expensive, highly toxic and the duration of its effects is unknown.

In conclusion, after a decade of intense scientific research, it remains true that, in the words of Norman Fowler, former Secretary of State for Social Services in the United Kingdom, "in the absence of medical defences against AIDS, public education is the main weapon in the fight to limit the spread of infection".

**EPIDEMIOLOGY**

To describe the global AIDS situation, it is useful to divide the problem into three separate but interdependent epidemics:

- infection with HIV
- the disease AIDS
- the response—social, cultural, economic and political—to the first two epidemics.

By 31 August 1988, a total of 111 854 cases of AIDS had been officially reported from 140 countries (Table 1). This represented a ninefold increase, over nearly four years, in the number of cumulative reported cases of AIDS. Over 100 more countries report AIDS cases today than in January 1984. Although this is an indicator of the rate of progression of the global AIDS epidemic (doubling time 10-11 months), it also points to growing openness and international cooperation from national authorities.

The underreporting of AIDS cases to national health authorities varies; 90% of cases is not reported in some developing countries with limited health infrastructures while 10% is not identified in some developed countries. WHO estimates that, since the beginning of the AIDS pandemic in the middle of the 1970s, the actual number of AIDS cases worldwide is about 250 000 to 300 000.

Even less reliable information is available on the global prevalence of HIV infection. WHO estimates that 5-10 million people worldwide are infected with HIV. More valid data on HIV prevalence are required to help target prevention programmes and to measure their effectiveness, as well as to plan for the medical and social services that will be required. This can only be done through national serosurveillance (including population studies, which raise ethical and legal problems and may not be socially and politically acceptable). There has been some technical debate on these issues, but little informed public debate.

The HIV epidemic has three distinct epidemiological patterns worldwide (Table 2). In pattern I countries, people who abuse drugs by injection are likely to attain greater prominence in HIV transmission. Transmission through blood or blood products is not a continuing problem, as blood is screened and blood products are treated. Heterosexual transmission occurs in pattern I countries but its rate of progress is a matter for speculation, in the absence of reliable data on people's sexual behaviour and on the transmissibility of HIV between men and women.

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### Table 1: AIDS cases officially reported to WHO by 31 August 1988

<table>
<thead>
<tr>
<th>Region</th>
<th>AIDS cases</th>
<th>Countries reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>≥ 1 cases</td>
</tr>
<tr>
<td>Americas</td>
<td>80 994 (72)</td>
<td>40</td>
</tr>
<tr>
<td>Africa</td>
<td>14 939 (13)</td>
<td>45</td>
</tr>
<tr>
<td>Europe</td>
<td>14 610 (13)</td>
<td>28</td>
</tr>
<tr>
<td>Oceania</td>
<td>1 034</td>
<td>5</td>
</tr>
<tr>
<td>Asia</td>
<td>227</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>111 854</td>
<td>140</td>
</tr>
</tbody>
</table>

Source: WHO
Table 2: Three epidemiological patterns of the HIV epidemic

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Regions</th>
<th>Means of HIV transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Western Europe</td>
<td>Mostly male homosexual intercourse</td>
</tr>
<tr>
<td></td>
<td>North America (some areas)</td>
<td>Drug use by injection</td>
</tr>
<tr>
<td></td>
<td>South America</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Australia and New Zealand</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Africa</td>
<td>Mostly heterosexual intercourse</td>
</tr>
<tr>
<td></td>
<td>Caribbean (some areas)</td>
<td>Transfusion of infected blood</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Perinatal</td>
</tr>
<tr>
<td>III</td>
<td>Asia</td>
<td>Heterosexual and male homosexual</td>
</tr>
<tr>
<td></td>
<td>Oceania</td>
<td>intercourse</td>
</tr>
<tr>
<td></td>
<td>Middle East</td>
<td>Use of infected imported blood or</td>
</tr>
<tr>
<td></td>
<td>Eastern Europe</td>
<td>blood products</td>
</tr>
</tbody>
</table>

In pattern II countries, HIV is transmitted through both men and women. In some urban areas of Africa, infection rates of 75–90% in female prostitutes and 15–25% in the general population have been noted. Perinatal transmission is a substantial problem; in some areas, 5–15% of pregnant women are infected. Transfusions of infected blood remain a public health problem, although facilities for HIV testing are being expanded rapidly under the national short-term AIDS programmes drawn up by many developing countries with assistance from WHO.

The prevalence of reported HIV infection in pattern III countries is still low, but there is evidence that HIV transmission within these countries is increasing.

In the absence of effective preventive strategies, the three patterns may merge. Thus, as safe blood and blood products and safe injections and other skin-piercing practices become the rule worldwide, most HIV transmission will be sexual and perinatal. In addition, regardless of the current sexual and geographic distribution, sexual transmission may ultimately affect all groups who engage in risky behaviour.

DEMOGRAPHIC IMPACT

Based on extrapolation from current trends, a cumulative global total of one million cases is anticipated by 1991. As 90% of HIV infection and AIDS cases occur among young adults and infants, a decline in national life expectancies may be expected in many industrialized and developing countries. For example, in a pattern I country such as France, AIDS-related mortality in 1990–1991 will approach or exceed that from two of the current major causes of death: suicide and traffic accidents.

In pattern II countries, adult mortality rates may double by 1991. Infant mortality rates are also expected to increase by 13–50 per 1000 live births, negating the gains made through the various child survival initiatives under the WHO strategy for health for all.

A variety of mathematical modelling techniques is being developed to predict the demographic impact of the epidemic. Although limited by the many uncertainties that surround key epidemiological and behavioural variables, these studies are important to public health authorities responsible for long-term planning. In developing countries, the AIDS epidemic can cause a decline in population within a few decades but is unlikely to change the ratio between the economically active and economically dependent portions of the population.

SOCIAL IMPACT

Examining the social impact of AIDS from the perspective of the family is particularly useful. The family, whatever its form and functioning within a particular cultural context, is a basic institution of socialization. Families teach people their social roles and socially approved and disapproved behaviour.

Once a family member is known to have HIV or AIDS, family disruption is inevitable because of:

- the social stigma attached to people with HIV and AIDS;
- discrimination against them and their families;
- the revelation of previously unknown homosexuality, prostitution, infidelity, promiscuity or drug use, and the shame and guilt felt about these practices;
- the heavy burdens on family members who provide care; and
- the need to plan for the care of dependents after the death of the family member with AIDS.

Families typically have powerful feelings of ambivalence, resentment, denial, guilt and anger towards members with HIV or AIDS. These feelings, and those of hurt, rejection and regret
about broken ties may remain with survivors as a persisting cause of family disruption long after the death of the person with AIDS.

Rapid urbanization in many developing countries has accelerated the disruption of traditional family systems. Anecdotal reports from eastern Africa and the United States suggest that families may not be able to deal as spontaneously with AIDS as they have done with past health problems. It is possible that the traditional reliance on extended kin systems may not be warranted. The long-term impact of AIDS on the structure and stability of family units in different societies is essentially unknown and requires further research. The epidemic may have further social consequences, ranging from impact on the practice of early marriage in some African societies to the burden on grandparents and on the adoption and fostering of children in the United States and Europe.

The impact of AIDS on social relations between groups may be manifested in racism and sexism. Irrational fear of homosexuals is a growing problem and the increasing harassment of homosexuals may sometimes have the implicit sanction of the state. The control of supposed deviants, and attempts to monitor and control personal life in different settings and through control over travel are other harmful effects of the third epidemic—the social and political responses to the HIV and AIDS epidemics.

In conclusion, policy responses to the social consequences of the AIDS epidemic must contain both an understanding of its impact on families and households, and the recognition of their role in forging the links between the individual and society.

**ECONOMIC IMPACT**

The economic impact of AIDS is likely to be considerable. The financial burden on individual families is illustrated by a study from Zaire showing that the costs of hospital care and a funeral for a child with AIDS can be as high as US $90 and US $320, respectively: the equivalent of 14 months' income for a Kinshasa family.

The cost to communities is illustrated by a case study of Zambia's primary industry, mining. The typical Zambian miner is in his middle thirties with a wife, five children and two other dependents. Even an unrealistically low estimate of HIV prevalence (3–5%) among miners is predicted to result in substantial costs to the industry in health service and sickness leave, the training of replacement staff, and death benefits and other dues to surviving dependents, as well as considerable indirect and social costs.

Radical declines in available labour may also drastically affect food production systems, with associated secondary consequences such as the loss of control over natural vegetation and the spread of endemic diseases such as trypanosomiasis.

The cost of AIDS to national economies is immense. By 1991, the testing, screening and health care costs attributable to HIV-related disease in the 32 countries of the WHO European Region may exceed US $5 thousand million per year. In the United States, 2% of all hospital beds occupied and 3% of total hospital costs will be attributable to HIV and AIDS, amounting to US $37.6 thousand million from 1986 to 1991.

The predicted indirect economic costs of AIDS in 1991, in the United States alone, are estimated at over US $55 thousand million. For developing countries, deprived of their most productive citizens in the group aged 20–40 years, the consequences are potentially devastating, resulting in declining gross national products, the necessity to rethink development priorities, and the deferral or abandonment of vital development programmes to cope with the AIDS crisis.

The direct cost of HIV infection for each adult showing symptoms is related to a country's gross national product per capita and varies from US $104 in Tanzania to US $10 200 in the United Kingdom and US $50 380 in the United States. Is the prevention of HIV transmission cost-effective? In developing countries with a host of other public health problems demanding a share of limited national resources, it is instructive to note that every case of HIV infection prevented saves 6.6 years of discounted productive healthy life. On this measure, HIV infection ranks fifth as a cause of death in childhood, after sickle cell anaemia, neonatal tetanus, birth injury and severe malnutrition, but ahead of childhood pneumonia, measles, tuberculosis and gastroenteritis.

Further, with the very high costs of treatment and relatively poor gains in duration and quality of life, is it efficient to treat people with AIDS? This question raises ethical dilemmas for policymakers concerned with making the best use of limited national resources for the maximum public good.
LEGISLATIVE IMPACT

The balance between the public interest and individual human rights is an increasingly important issue in the third epidemic. By March 1988, over 40 countries had introduced new AIDS-related legal measures, while several others had extended existing public health codes or communicable disease statutes to include the disease. AIDS-related laws can be broadly classified into three categories:

- product-related laws, protecting blood or transplant organs, and relaxing restrictions on the manufacture, distribution, taxation or advertising of condoms;
- institution-oriented laws, seeking to establish special facilities (such as specifically designated research institutes and reference laboratories) and relaxing regulatory controls on clinical trials; and
- behaviour-oriented laws, requiring the compulsory notification of AIDS cases (in at least 30 countries), imposing international travel restrictions and permitting compulsory screening for HIV antibody, quarantine and treatment.

Laws for the mandatory testing of populations or specific groups and frontier control laws are ineffective, inefficient and potentially even harmful approaches to the social regulation of AIDS. An example of an ineffective law is the system of legal control of female prostitutes in many countries, which may encourage rather than constrain risky behaviour. The Government of South Africa has made an inefficient law to screen migrant workers for HIV or AIDS and then repatriate those found positive. This is unlikely to have major impact on the progress of the epidemic in South Africa, and has considerable social and political implications.

Ineffective and irrational policies and oppressive laws that sanction discrimination against people with or at risk of HIV and AIDS are a matter of growing global concern and were condemned by the Forty-first World Health Assembly in Geneva in May 1988. Such measures may undermine entire national AIDS programmes and ultimately endanger public health.

ETHICAL CONCERNS

As more and more societies grapple with the practical issues of controlling HIV transmission, they face ethical dilemmas in giving practical advice on risk reduction. A major concern is striking an appropriate balance between public education campaigns aimed at the general public and those for specific target groups. The latter is a necessary part of any effective prevention strategy but may place further stigma on already marginalized people such as homosexuals and injecting drug abusers. In any case, particular types of risky behaviour (such as unprotected anal intercourse) are not exclusive to a particular risk group.

A survey of prisoners in 17 European countries showed that more than 10% were HIV antibody positive. Should national prison authorities, on epidemiological considerations alone, make condoms and clean injection equipment available to prisoners?

Public health advice on risk reduction may conflict with what is acceptable to religious and other opinion leaders, thus placing governments in a dilemma. It is right to advise people to stick to one faithful partner, but is it acceptable to advise that, if they don't, they should use condoms? It is right to advise people not to abuse drugs by injection, but is it acceptable to provide needle exchange schemes for those who can't, so that they are less hazardous to others?

Further, as the epidemic proceeds to affect their profits, a number of major international corporations have introduced HIV antibody screening for their employees. This places pressure on competitors to do the same, thus leading to a progressive deterioration of conditions and rights of employment.

The AIDS epidemic also has profound implications for the life insurance industry. How can the rights of investors in life insurance companies to maximum profits be balanced against any social obligation to provide affordable life and health insurance to people with or at risk of HIV infection?

By January 1988, Cuba's mass screening programme had tested 1.5 million people (or 22% of the sexually active population) for HIV antibody, yielding 174 seropositive people. A further 3 million tests are planned for 1988. Can this be justified on public health grounds, and what would be the economic, social and ethical implications for other countries wishing to pursue the example?

Different cultural beliefs and values are implicit in the diverse approaches to AIDS pre-
vention around the world. At the core is the conflict between the individual choice and socially determined models of behaviour. How much direct personal responsibility do people have for health behaviour? How much can they be persuaded to assume? Alternatively, if health behaviour is predominantly a product of social forces outside individual control, should the creation of social change be the real focus for health promotion activities against AIDS?

HEALTH PROMOTION RESPONSES

The WHO global strategy on AIDS aims to unify national and international efforts to prevent HIV infection and to reduce its personal and social impact. This strategy is based on the following principles:

- public health must be protected;
- human rights must be respected and discrimination prevented;
- education is the key to AIDS prevention;
- AIDS control requires a sustained social and political commitment;
- the planning of comprehensive national AIDS programmes should be integrated into national health systems; and
- programmes must be systematically monitored and evaluated.

Over 100 countries have now prepared short- and medium-term national plans on AIDS, with assistance from WHO. This is an impressive indicator of national resolve and international cooperation. Although the actual impact of these programmes has yet to be systematically evaluated, experiences from around the world indicate a variety of interesting and useful approaches. For example, in the United Kingdom, strong government leadership was central to a well accepted mass media campaign that achieved very high levels of public exposure to the key AIDS prevention messages. The Swiss “STOP AIDS” programme with its “Hot Rubber” campaign led to a 60% increase in condom sales. In Amsterdam, the methadone bus has become the symbol for a well organized programme of support and resocialization of drug addicts, an otherwise hard-to-reach audience.

The importance of empowerment in stimulating behaviour change was illustrated from experience in Kenya, in which half the prostitutes targeted in a campaign came to insist that their clients use condoms. Genuine community participation as a key to successful health promotion was shown in the pioneering work of Grace Smallwood with her fellow Aborigines in Australia: creating, through exhaustive consultation, culturally meaningful methods for AIDS education. The value of getting the support of key community leaders was shown in Uganda’s “zero-grazing” campaign, which received crucial support from the pulpit—important in a country where church attendance exceeds 90%.

Work involving traditional healers and “downtown social ladies” in Zimbabwe showed that participatory communication can be a meaningful alternative to the didactic process of giving information on AIDS. Work with women in New York City showed the importance of meticulously building an understanding of the characteristics of a target audience: in this case, women in some of their different social roles: adolescent, sexually active adult, parent and sexual partner. In Denmark, a careful study of the lifestyles of adolescents led to a programme tailored specifically for them. These examples illustrate the importance of determining the most appropriate mixture of channels and messages to be used in a coherent strategy for audience-specific communication for preventing AIDS through public education.

A particularly noteworthy response to the AIDS epidemic has been the pioneering work of different kinds of nongovernmental organization (NGO). The Shanti Project in California, United States; the Terrence Higgins Trust in the United Kingdom and the Noah’s Ark project in Sweden exemplify the earliest action to combat AIDS in the West. Despite their enormous diversity, NGOs share a number of useful attributes: a knowledge of and closeness to communities in which they work, flexibility, the ability to innovate, and the capacity to function in formal and informal networks.

A review of programmes from around the world offered useful lessons. AIDS health promotion activities should be scientifically based and ethically acceptable; they should aim at long-term goals, not short-term expediency. Health educators must scrupulously avoid victim-blaming, stereotyping and stigmatization. AIDS health promotion should:

- be based on genuine community participation;
• centre action and control in individuals, to enable them to make informed decisions about their lives and behaviour;
• have accurate, honest, consistent and realistic messages and expectations;
• reassure, not frighten; and
• favour human sexual expression, not oppose this life-enhancing activity.

Organized public education and general mass media coverage has had impressive impact. A Gallup International survey of 33 countries on 5 continents indicates very high levels of public awareness about the risks of contracting HIV, although significant myths, misunderstandings and fears persist. Most people around the world are sympathetic towards people with AIDS, but many would refuse to work or associate with such people. Further, there is little concern in the general population about contracting HIV, and relatively few people claim to have changed or to be considering changing their sexual behaviour. These results indicate the agenda for action in future AIDS education activities.

PROSPECTS

The World Summit of Ministers of Health on Programmes for AIDS Prevention was the largest gathering ever of health ministers meeting to discuss a single subject. Its political importance cannot be disputed. The London Declaration on AIDS Prevention named 1988 as a Year of Communication and Cooperation about AIDS and the delegates, from 148 nations, resolved to:

• open fully the channels of communication in each society so as to inform and educate more widely, broadly and intensively;
• strengthen the exchange of information and experience between all countries; and
• forge, through information and education and social leadership, a spirit of social tolerance.

The subsequent First International Conference on the Global Impact of AIDS provided valuable insight into all aspects of the AIDS epidemic and the magnitude of the task ahead.

Against the background of other public health and social problems with much greater impact (at least at present), AIDS has assumed a unique predominance. This is probably justified, but are the fervently advocated methods of AIDS education consistent with the WHO strategy for health for all and the vision of Alma-Ata? What are the negative and positive consequences of AIDS prevention activities on other public health programmes?

Within the WHO global strategy on AIDS, some countries are advocating more equitable, safer and ultimately richer personal relations, while others are imposing more rigid moral and legal controls. Can a worldwide effort to stop AIDS really accommodate such differing approaches and remain sensitive to the need for each country to plan within its own cultural, social and political traditions?

FOOTNOTE FROM STOCKHOLM

The IV International Conference on AIDS in Stockholm (12–16 June 1988) saw over 3000 presentations on all aspects of the epidemic. This provided the detail to the broad picture that has been described already.

The global epidemic continues to advance at an alarming rate, with nearly 112 000 cumulative cases reported to WHO by 1 September 1988. Although advances continue in the understanding of the transmission, pathogenesis, immunology, clinical course and management of HIV and AIDS, the prospects for an effective cure or vaccine remain distant.

Efforts to prevent HIV are gathering speed, with a variety of educational initiatives in different settings (such as schools, prisons and the workplace) that include the mobilization of new channels of communication. Although they are welcome, these initiatives must be evaluated with greater rigour, and programme experience must be shared more systematically.

Ethical issues (such as those involved in HIV testing) are a cause for growing concern. Organized efforts to protect human rights and prevent discrimination will be essential to the effectiveness of national programmes against AIDS.

NOTES

1. I am grateful to many authors for the use of the material they presented at both the conferences discussed. Interested readers may want to consult a report on the World Summit (AIDS prevention and control (1988). Geneva, World Health Organization) and the proceedings of the International Conference (to be published by Alan R. Liss, Inc., New York).
