HIV/AIDS in the last 10 years

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Introduction

Now, 28 years after acquired immune deficiency syndrome (AIDS) was first recognised [*1*], it has become a global pandemic affecting almost all countries. WHO/UNAIDS (Joint United Nations Programme on HIV/AIDS) estimate the number of people living with human immunodeficiency virus (HIV) worldwide in 2007 at 33.2 million. Every day 68 000 become infected and over 5700 die from AIDS [*2*]; 95% of these infections and deaths have occurred in developing countries. The HIV pandemic remains the most serious of infectious disease challenges to public health.

Sub-Saharan Africa remains the most seriously affected region, with AIDS the leading cause of death there. Although percentage prevalence has stabilized, continuing new infections (even at a reduced rate) contribute to the estimated number of persons living with HIV, 33.2 million (30.6–36.1 million) (Figures 1,2).

A defining feature of the pandemic in the current decade is the increasing burden of HIV infection in women, which has additional implications for mother-to-child transmission. In sub-Saharan Africa, almost 61% of adults living with HIV in 2007 were women [*2*].

The impact of HIV mortality is greatest on people in their 20s and 30s; this severely distorts the shape of the population pyramid in affected societies. Globally, the number of children living with HIV increased from 1.5 million in 2001 to 2.5 million in 2007, 90% of them in sub-Saharan Africa [*2*].

HIV/AIDS also poses a threat to economic growth in many countries already in distress. According to the World Bank

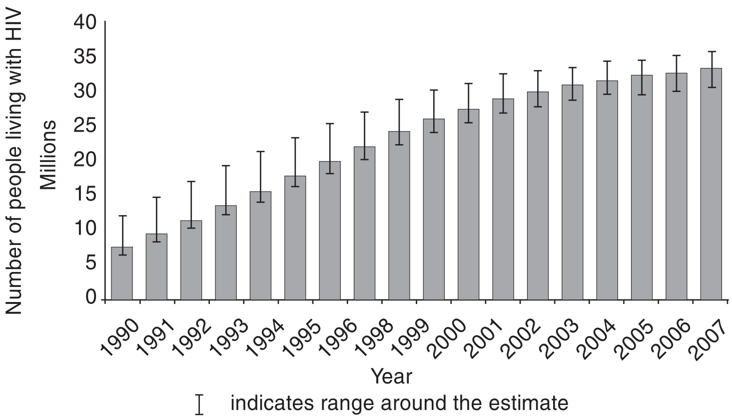

Figure 1 **Estimated number of people living with HIV globally, 1990–2007, data from UNAIDS [*2*]**

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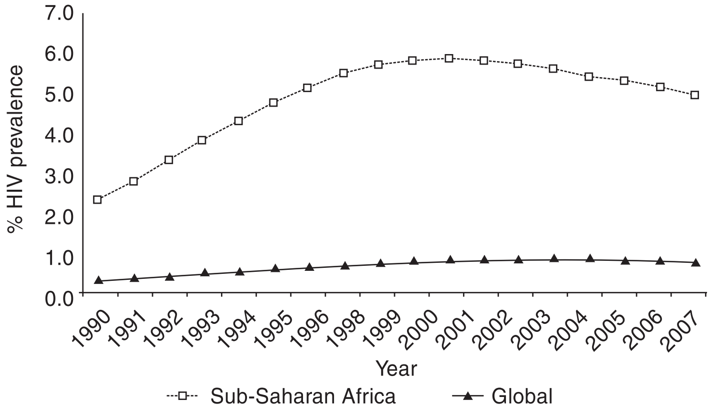

Figure 2 **Estimated adult (15–49 years) HIV prevalence (%) globally and in sub-Saharan Africa, 1990–2007, data from UNAIDS [*2*]**

analysis of 80 developing countries, as the prevalence of HIV infection increases from 15% to 30%, the per capita gross domestic product decreases 1.0%–1.5% per year [*3*]. The powerful negative impact of AIDS on households, productive enterprises and countries stems partly from the high cost of treatment, which diverts resources from productive investments, but mostly from the fact that AIDS affects people during their economically productive adult years, when they are responsible for the support and care of others.

This crisis has necessitated a unique and truly global response to meld the resources, political power, and technical capacity of all UN organizations, developing countries and others in a concerted manner to curb the pandemic.

AIDS often engenders stigma, discrimination, and denial, because of its association with marginalized groups, sexual transmission and lethality, hence it requires a more comprehensive and holistic approach.

During the past 10 years, many developments have occurred in response to this pandemic. WHO has played an important role in this response. This article reviews the major developments in treatment and prevention and the role of WHO in response to these developments.

Treatment of HIV

During the first decade of the AIDS epidemic, the outcome for nearly every person infected with HIV around the world was virtually the same: most of those who became infected with HIV eventually died as a result of AIDS. This began to change, however, in 1996 with the advent of protease inhibitors and highly active antiretroviral therapy.

Antiretroviral therapy was a real breakthrough, changing HIV infection from an almost uniformly fatal infection into a chronic disease. At the XI International Conference on AIDS in 1996, results of studies in high income countries confirmed the effectiveness of combination antiretroviral regimens in preventing AIDS-related illness and death [*4*]. It was clear that this would make a tremendous change in rich countries, but treatment would remain be-

yond the reach of people living with HIV in low- and middle-income countries. Hence the human toll from the epidemic will continue to erase decades of public health gains in sub-Saharan Africa.

Voices rejecting this situation increased, including those of people living with HIV, and leaders in governments, religion, industry and civil society. Between 1998 and 2000, WHO and UNAIDS started to exert pressure on company leaders towards differential pricing for anti-retrovirals. There was also international pressure to end the so-called treatment apartheid. Due to these efforts, the Accelerating Access Initiative was launched in May 2000; this included the pharmaceutical companies and UNAIDS, WHO, the World Bank, UNICEF and the UN Population Fund. This agreement was followed by a Declaration of Commitment on HIV/AIDS, endorsed by the UN General Assembly in 2001, embracing equitable access to care and treatment as a fundamental component of a comprehensive and effective global response [*5*].

In late 2001 and early 2002, a number of factors converged to increase the momentum for treatment access. WHO took the first steps in developing guidance on a public-health approach, including simplified treatment regimens and clinical monitoring, and added 10 antiretroviral drugs to its list of essential medicines. The first edition of the WHO treatment guidelines for resource-limited settings was published in March, 2002 (it included the first mention by WHO of the 3 by 5 target) [*6*]. These guidelines included simplified schemes for treatment and clinical diagnosis, including reduced laboratory support. These approaches facilitated wider access to large populations in need of treatment in the poorest countries.

In September 2003, in the follow-up meeting to the UN General Assembly Special Session in New York, Richard Feachem, Executive Director of the Global Fund to Fight AIDS, Tuberculosis and Malaria, UNAIDS and WHO declared the gap between those who do and those who do not have access to treatment a "global health emergency" [*7*]. By December of that year, WHO had launched its plan for achieving 3 by 5, and UNAIDS allocated additional resources for its support [*8*].

The 3 by 5 initiative

The 3 by 5 initiative committed all components of the UNAIDS family and a broad array of partners to a highly ambitious target: to provide 3 million people living with HIV/AIDS in low- and middle-income countries with antiretroviral treatment by the end of 2005.

In fact there were good results. In a recent survey, 36 out of 39 of the 3 by 5 focus countries had developed national antiretroviral therapy guidelines with at least one WHO first-line treatment regimen [*9*]. From a baseline of approximately 400 000 people receiving antiretroviral therapy in low- and middle-income countries in December 2003, more than 1.3 million people were receiving treatment by December 2005. Antiretroviral therapy coverage in low- and middle-income countries increased from 7% at the end of 2003 to 12% by the end of 2004 and 20% at the end of 2005. Over the past year, the number of people receiving treatment increased by about 300 000 every 6 months. The scale-up in sub-Saharan Africa was most dramatic, from 100 000 at the end of 2003 to 310 000 at the end of 2004 and 810 000 at the end of 2005. More than half of all people receiving treatment in low- and middle-income countries are now living in this region compared with a quarter 2 years ago.

By the end of 2005, data reported from 18 countries indicated that they had met the 3 by 5 target of providing treatment to at least half of those who need it [*10*].

In sub-Saharan Africa, the number of people receiving treatment increased more than 8-fold over the 2-year reporting period, and has more than doubled in the past year. Coverage increased from 2% in 2003 to 17% at the end of 2005. About 1 in 6 of the 4.7 million people in need of antiretroviral therapy in this region now receives it [*10*]. Worldwide, it is estimated that between 250 000 and 350 000 deaths were averted in 2004–2005 as a result of increased treatment access [*11*].

The 3 by 5 initiative highlighted the value of target-setting in driving important public health initiatives and will continue to influence the public health landscape as we move towards universal access by 2010.

Funding

Despite these many achievements, as of December 2005 at least 80% of those in clinical need of antiretroviral drugs were not receiving them.

On the funding front, many international organizations have been set up to assist in funding and implementing HIV prevention and care programmes and related health initiatives worldwide. These include the President's Emergency Plan for AIDS Relief; the Global Fund to Fight AIDS, Tuberculosis and Malaria; Rollback Malaria, the Global Alliance for Vaccines and Immunization; the Global Health Council; Médecins Sans Frontières; the Bill and Melinda Gates Foundation; the World Bank Multicountry HIV/AIDS Programme; the Accelerating Access Initiative and the William J. Clinton Presidential Foundation.

These organizations contribute increasing amounts of money to confront AIDS and other pressing global health issues. UNAIDS reports that in 1996, approximately US$ 330 million was available for HIV/AIDS initiatives worldwide [*12*], a figure which had risen to US$ 4.7 billion by 2003. Although this represents a huge increase in funding, it is still less than half the US$ 12 billion that is now required, and this demand is expected to rise to US$ 20 billion by 2007 [*12*]. The relative availability of funds encouraged the international community to plan for more-accessible services. At the June 2006 United Nations General Assembly High-Level Meeting on HIV/AIDS in New York, Member States agreed to work towards the goal of "universal access to comprehensive prevention programmes, treatment, care and support" by 2010.

This goal calls for the international community to further build on the progress made in the global response to HIV/AIDS in recent years through, for example, the WHO/UNAIDS 3 by 5 initiative and the increased resources made available to countries by the Global Fund to Fight AIDS, Tuberculosis and Malaria, the World Bank, the President's Emergency Plan for AIDS Relief and other bilateral efforts, as well as those made available by private foundations and nongovernmental organizations.

Prevention

In the absence of curative therapy, control of the HIV/AIDS epidemic requires broad implementation of effective and sustainable prevention measures. In the past 20 years, substantial advances have been made in the field of HIV prevention. Prevention of infection must be based on strategies that interrupt sexual, blood-borne, and perinatal transmission of the virus.

A number of preventive interventions have been tested and proved to reduce HIV-associated risk behaviours across a variety of populations [*13*]. Strategies for the prevention of sexual transmission have focused on reducing unsafe sexual behaviour (by promoting sexual abstinence or decreasing

the number of partners), encouraging condom use, and treating sexually transmitted infections. In addition, effective prevention strategies have been developed to reduce mother-to-child transmission of HIV-1 infection and to reduce blood product transmission of HIV through use of sensitive and reliable screening methods [*13*].

At country, regional and global levels, there continue to be concerns about the unmet need for comprehensive HIV-prevention programming within the current state of AIDS response.

While coverage of some key prevention programmes such as the prevention of mother-to-child transmission increased markedly over the year, still only 17 of 108 low- and middle-income countries are on track to meet the United Nations General Assembly Special Session on HIV/AIDS, 25–27 June 2001 target of a 50% reduction in infection among infants. Even the most basic building block of successful HIV prevention programmes—knowing how HIV is transmitted—is far from being achieved: in only 10 out of 78 low- and middle-income countries do a majority of young people (15–24 years) have comprehensive AIDS knowledge. In view of this prevention challenge, WHO advocated dramatic scale-up of HIV testing and counselling and provided support for dissemination and implementation of guidance on provider-initiated testing and counselling. Comprehensive integration of Prevention of Mother to Child Transmission of HIV with maternal and newborn child health continued to be a priority for WHO. Guidance was developed on key prevention and care programmes for people living with HIV [*14*].

Male circumcision

Three recent randomized, controlled clinical trials have demonstrated the efficacy of adult male circumcision in reducing female-to-male transmission of HIV by approximately 50%–60% [*14–16*]. These results have heightened interest in male circumcision as an HIV prevention intervention and have led to an increased demand for male circumcision services.

In response to the findings of the trials, WHO, UNAIDS and their partners held an international consultation in early March 2007 with the goal of defining specific policy and programme recommendations for expanding and/or promoting male circumcision for HIV prevention. In addition to this practice being recognized as an important intervention to reduce the risk of HIV infection, experts at the consultation emphasized that, particularly in countries with high HIV prevalence as a result of heterosexual transmission and with low male circumcision rates, male circumcision could have a major impact on the HIV epidemic. It was recommended that these countries urgently consider expanding access to safe male circumcision services. Operational tools for male circumcision, including for training on surgical procedures, quality assurance, situation analysis, and monitoring and evaluation, were developed [*14*].

Future challenges

Despite the progress to date, some persistent challenges continue to hamper the scaling up of antiretroviral therapy and HIV prevention. These include critical weaknesses in health systems, difficulty in ensuring equitable access and lack of standardized systems for the management of programmes and for monitoring progress. There is still the challenge of making the money work by harmonizing the efforts of partners.

The World Health Report (2004) states that "the 3 by 5 initiative cannot be imple-

mented in isolation from a regeneration of health systems" [*17*]. Several studies support this statement, reflecting the unfavourable conditions in the health care systems of developing regions [*12,18*]. Concerted efforts are needed to address the challenge to health systems, including effective funding efforts. However, certain social and biological complexities profoundly affect the transmission, progression and mortality of the disease; these lie beyond the scope of health services.

To sum up, the HIV pandemic has continued to pose great challenges to public health. During the last 10 years different players have confronted the pandemic. WHO has played an important role in providing technical support to countries in prevention and in leading the initiatives in treatment.

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The estimated number of people living with HIV in the Region by end 2007 was 530 000 with HIV prevalence estimated between 0.1% and 0.3 % of the adult population aged 15-49 years. There are concentrated epidemics among injecting drug users in four countries with another at high risk of such an epidemic. Overall, countries succeeded in providing ART to 79% of people living with HIV known to the health system. However, this relates to only 6% of the estimated number in need of ART.

Source: The Work of WHO in the Eastern Mediterranean Region. Annual Report of the Regional Director1 January–31 December 2007