HIV/ AIDS in Malawi

Estimates of the prevalence of infection and the implications

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National AIDS Commission

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# Table of Contents

LIST OF ABBREVIATIONS .................................................................................................................. iv
INTRODUCTION ................................................................................................................................. 1
I. BACKGROUND ................................................................................................................................. 2
   Sentinel Surveillance .......................................................................................................................... 3
   Current Estimates of HIV Prevalence .............................................................................................. 4
   AIDS Deaths and New HIV Infections ............................................................................................ 7
   HIV Transmission Mechanisms ...................................................................................................... 8
   Incubation Period ........................................................................................................................... 9
   Age and Sex Distribution of Reported AIDS Cases ....................................................................... 10
II. THE IMPACTS OF AIDS ................................................................................................................ 12
   Annual Adult Deaths ....................................................................................................................... 13
   Life Expectancy ............................................................................................................................... 14
   Population Size and Growth .......................................................................................................... 15
   Orphans and Vulnerable Children ................................................................................................. 16
   Gender and AIDS ........................................................................................................................... 17
   HIV and Tuberculosis .................................................................................................................... 18
   Other Impacts ................................................................................................................................. 19
III. THE WAY FORWARD .................................................................................................................... 21
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>DHS</td>
<td>Demographic and Health Survey</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>STIs</td>
<td>Sexually Transmitted Infections</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>UNAIDS</td>
<td>Joint United Nations Programme on AIDS</td>
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<td>VCT</td>
<td>Voluntary HIV Counselling and Testing</td>
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INTRODUCTION

The HIV/AIDS epidemic has become a serious health and development problem in many countries around the world. The Joint United Nations Programme on AIDS (UNAIDS) estimates the number of HIV infections worldwide at about 40 million by the end of 2001. About 28 million infected people—70 percent of the total—were in sub-Saharan Africa.

The virus that causes AIDS has already infected and is infecting many Africans. About 20 percent of the entire adult population aged 15–49 is currently infected in nine southern African countries—Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe. This is a staggering level, and most of these people do not even know they are infected. From the beginning of the epidemic through 2000, about 4.4 million persons may have developed AIDS in southern Africa, although most of these have not been officially recorded. No cure is available for AIDS, and the disease threatens the social and economic well being of the countries.

However tragic the HIV/AIDS epidemic is for Africa, there is still occasion for hope. HIV is not spread by casual contact or by mosquitoes or in the air or water. Africans do not have to wait for expensive vaccines to be developed at some time in the unknown future to protect themselves. HIV is spread by certain types of human behaviours; therefore, it can be controlled by changes in those behaviours. What is needed is continued involvement from all sectors of society to promote interventions to reduce high-risk sexual behaviours, treat and control other sexually transmitted diseases, maintain a safe blood supply, ensure safe use of needles, care for those already infected, ensure that human rights are respected and mitigate the problems of those already infected with HIV or otherwise affected by the epidemic. Most of the adult population remains free of the infection and all of these people have the opportunity to protect themselves from the disease.

This report presents the latest estimates of the extent of the HIV/AIDS epidemic in Malawi and discusses some of the implications.
I. BACKGROUND

Sentinel Surveillance

Current Estimates of HIV Prevalence

AIDS Deaths and New HIV Infections

HIV Transmission Mechanisms

Incubation Period

Age and Sex Distribution of Reported AIDS Cases
**Sentinel Surveillance**

Malawi has a sentinel surveillance system that provides data for estimating the extent of HIV infection. There are nineteen sentinel sites that include urban, semi-urban and rural locations. Each site is located at antenatal clinics, where women go for care during pregnancy. Blood samples are tested anonymously there for HIV infection, and the results are used to understand the status of the epidemic.

Results from surveillance in 2003 show that levels of infection are quite high in most of the country. More than ten percent of those tested are infected with HIV in all sites in the country except for two rural sites in the Centre. Infection rates are above 20 percent in many urban and semi-urban areas.
Current Estimates of HIV Prevalence

One commonly used measure of the extent of HIV in a population is adult prevalence, or the percentage of adults aged 15-49 who are infected with HIV. Prevalence is estimated on the basis of surveillance results from antenatal clinics. Studies in a number of countries in Africa have shown that HIV prevalence among pregnant women is a good estimate of prevalence among all adults aged 15-49.

Analysis of results from sentinel surveillance collected in 2003 indicates that HIV prevalence among all adults in Malawi is 12-17 percent. Prevalence is considerably higher in urban areas. These levels of infection imply that 700,000 to one million Malawians are infected with HIV today.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>National adult (15-49) prevalence</td>
<td>12 - 17%</td>
</tr>
<tr>
<td>Number of infected adults (15-49)</td>
<td>610,000 – 880,000</td>
</tr>
<tr>
<td>Urban adult prevalence</td>
<td>19 - 28%</td>
</tr>
<tr>
<td>Number of infected urban adults</td>
<td>190,000 – 280,000</td>
</tr>
<tr>
<td>Rural adult prevalence</td>
<td>10 - 15%</td>
</tr>
<tr>
<td>Number of infected rural adults</td>
<td>420,000 – 600,000</td>
</tr>
<tr>
<td>Number of infected children</td>
<td>60,000 – 80,000</td>
</tr>
<tr>
<td>Number infected over age 50</td>
<td>30,000 – 50,000</td>
</tr>
<tr>
<td>Total HIV+ population</td>
<td>700,000 – 1,000,000</td>
</tr>
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Prevalence for the entire country increased rapidly from the late 1980s to the early 1990s. By the middle of the 1990s prevalence stabilized and has remained roughly constant since. It is expected to remain at about the same level for the next few years if current conditions continue.

Prevalence is clearly highest in the Southern Region where it is about double the level in the Centre and North. The exact pattern of prevalence increase by region before 1994 is uncertain since there is very little surveillance information for that period and many sites that started in 1994 had already reached stable prevalence. However, these curves give an idea of how the epidemic has progressed.

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1 Prevalence estimates from antenatal clinics tend to under-estimate prevalence among all women and over-estimate prevalence among men. They also over-estimate prevalence among young women and over-estimate among older women. These differences compensate for each other. As a result, prevalence among pregnant women is generally a good estimate of prevalence among all adults aged 15-49.

2 The details of how this estimate was prepared are available in a technical report from the National AIDS Commission Estimating National HIV Prevalence in Malawi from Sentinel Surveillance Data: Technical Report, October 2003.
Adult HIV Prevalence by Region

Adult HIV Prevalence (15-49)

North
Central
South
AIDS Deaths and New HIV Infections

It is encouraging to note that adult HIV prevalence is no longer growing rapidly in Malawi. However, this is not a cause for complacency. Prevalence of 12-17 percent is quite high. In fact if HIV prevalence were to remain stable at this level for many years it would mean that a child born today would have a 45 percent chance of eventually becoming infected and dying from AIDS. This is because a stable level of prevalence means that the large number of people that are dying from AIDS each year is matched by an equal number of new infections. This year about 80,000 people will die from AIDS. A similar number of people will become infected. At least half of these infections will be among young people 15-24. The ultimate goal of prevention programs is to reduce HIV prevalence to very low levels. This means reducing the number of new infections occurring every year.

![Annual Number of AIDS Deaths and and New HIV Infections](chart.png)
HIV Transmission Mechanisms

HIV can be transmitted from one person to another in a number of ways. In Malawi, three transmission mechanisms are most important: heterosexual contact, mother-to-child transmission, and unsafe blood transfusions or medical practices.

**Heterosexual contact**  The majority of infections are transmitted through heterosexual contact. Although the probability of transmitting HIV in a single act of intercourse can be quite low, a number of factors increase the risk of infection dramatically. The two most important are the presence in either partner of a sexually transmitted infection (STI), like syphilis or gonorrhea, and having a large number of sexual partners. A significant number of adults suffer from STIs and many have a number of sexual partners. As a result, most new HIV infections are due to heterosexual contact. Programs designed to slow the spread of HIV need to focus on reducing transmission through sexual contact.

**Mother-to-child transmission**  Many children are infected perinatally; that is, they receive the infection from their mothers during pregnancy, at the time of birth, or through breastfeeding. About 25-40 percent of babies born to infected mothers will themselves be infected. The rest will not be infected, but are at risk of becoming orphans when their parents die from AIDS. About 10 percent of new HIV infections in southern Africa are due to perinatal transmission.

**Blood transfusion**  Transfusion with infected blood will almost always transmit HIV. Most blood is screened for HIV before transfusion. As a result, this mode of transmission is not significant, accounting for only a few percent of new HIV infections. Re-use of unsterile needles and syringes can also transmit HIV infection. The proportion of infections caused by unsafe injections is probably not more than a few percent.
Incubation Period

After transmission of HIV, a person does not develop AIDS immediately. There is often a lengthy period from infection with HIV to development of the disease AIDS that may last be only a few years or as many as 15 years or even longer. Some people may survive for a long time with an HIV infection while others may develop AIDS within two or three years and die soon thereafter. The average time from infection with HIV to death from AIDS is about nine years if no anti-retroviral therapy is available. That is, on average, a person does not die from AIDS until nine years after becoming infected. For most of this period, the person may not have any symptoms and, therefore, may not even be aware that he or she is infected. This contributes to the spread of HIV, since the person can transmit the infection to others without knowing it. People with full AIDS, of course, remain infectious. For children the incubation period is much shorter because their immune systems are not yet fully developed. Most children who are infected at birth develop AIDS and die within five years.

HIV Incubation Period (Adults)

-- 2 - 12 YEARS ---- - 1- YEAR ----
(On Average)
Age and Sex Distribution of Reported AIDS Cases

The chart below shows the distribution of reported AIDS cases by age group and sex. Reported cases represent only a small proportion of all AIDS cases; nevertheless, they provide useful information about the HIV/AIDS epidemic.

This bar chart illustrates several key facts:

- About three-quarters of AIDS cases are found among adults between the ages of 20 and 40. Since this is the most economically productive segment of the population, deaths in this age group are an important economic burden. Many productive years and much investment in education and training will be lost. These deaths also have significant family consequences since most people in this age group are raising young children.

- Although the total number of reported AIDS cases according to sex is about equal, the distribution by age group and sex is quite different. For females, cases are concentrated in the younger age groups; there are more than four times as many females as males reported to have AIDS in the group aged 15-19, while there are about one-third more females than males in the group aged 20-29. This pattern then reverses, where more males than females are reported to have AIDS in all of the groups aged 30 or more. Some of the difference may be due to transmission from older men to younger women, but young women may physiologically be more prone to HIV infection.
• A significant number of AIDS cases have been reported among young children. Virtually all of these children received the infection from their mothers.

• The small number of AIDS cases in the group aged 5-14 emphasizes the point that the main modes of transmission are through sexual contact or mother-to-child transmission. This group would have higher prevalence if mosquitoes or casual contact spread HIV. Since prevalence is so low among these young people, programs targeted at this group provide a special opportunity to affect the future course of the epidemic.
II. THE IMPACTS OF AIDS

Annual Adult Deaths
Childhood Survival
Life Expectancy
Population Size and Growth
Orphans
Gender and AIDS
HIV and Tuberculosis
Other Impacts
Annual Adult Deaths

The epidemic will increase the death rate at all ages. However, the impact will be most severe among adults in the prime working ages and among children under the age of 5. Without AIDS, and assuming a gradual decline in death rates from other causes, the annual number of deaths among adults aged 15-49 would have remained constant from 1985 until today at about 22,000. However, AIDS has more than tripled the number of adult deaths to nearly 80,000 a year. AIDS is responsible for almost three out of every four deaths in this age group. This large number of deaths in the productive age group will have serious consequences for the economic and social development of the country.
Life Expectancy

One dramatic impact of AIDS deaths is the resulting decline in life expectancy. Life expectancy was estimated from the 1998 census at about 40 years about the same level as in 1985. If people were not dying from AIDS, the life expectancy would be about 56, sixteen years higher.
Population Size and Growth

AIDS will have a large impact on population size. However, it will not cause population growth to stop or to become negative. The following projection illustrates this point. The projection assumes that the total fertility rate (the average number of births per woman during her lifetime) continues to decline slowly from about 6 births per woman today to 5.4 by 2010.

**With no AIDS**, the population of Malawi would have increased from about 7.5 million at the time of the 1987 census to 12.5 million today and to 15.6 million by 2010. Today the population would be growing at 3.2 percent per year.

**With AIDS causing increased deaths**, the total population is about 11.7 million today, about 800,000 fewer people than if there were no AIDS. By 2010 the population is projected to grow to 13.9 million, about 1.7 million people fewer than with no AIDS. However, by 2010 the population would still be growing at 2.4 percent per year, still a very high rate of growth.

AIDS will have a significant impact on population size, but the population will still grow significantly by 2010. The AIDS epidemic, in addition to its direct impact on mortality, could have a secondary influence on death rates. For example, the large increase in the number of orphans, the economic disruption of households, the increase in mortality from tuberculosis and other causes, and additional factors could contribute to higher mortality and an even lower rate of population growth. In the wake of rising mortality, however, fertility decline could be slower, which would result in a higher rate of population growth.
Orphans and Vulnerable Children

One serious consequence of AIDS deaths to men and women in their prime childrearing ages is an increase in the number of orphans. An orphan is defined here as a child under the age of 18 that has lost one or both parents. With this definition, there are over 800,000 children are orphans today. About 40 percent of them are due to AIDS. Another 30,000 children are vulnerable because one or both of their parents are currently sick with AIDS and less able to care for them properly.

These children may lack the proper care and supervision they need at this critical period of their lives. There will be a tremendous strain on social systems to cope with such a large number of orphans.

- At the family level, there will be an increased burden and stress for the extended family that will try to care for these orphans. Many grandparents are left to care for young children. Some families are headed by children as young as 10 years old.
- At the community and national levels, there is an increased burden on society to provide services for these children, including orphanages, health care, and school fees. Many children go without adequate health care and schooling, increasing the burden on society in future years. There may also be an increase in the number of urban street children.

![Number of Orphans](chart.png)
Gender and AIDS

Although both men and women are vulnerable to infection and disease, the impact of HIV/AIDS affects the two sexes differently. Early in the AIDS epidemic more men are infected than women. As the epidemic progresses that ratio changes. In a mature epidemic such as Malawi, there are 20-40% more women infected than men.

This imbalance in the sex ratio may occur in part because women are more prone to infection than men. Research indicates women are two to four times more vulnerable to HIV infection than men during unprotected intercourse because of the larger surface areas exposed to contact. Similarly, women are more vulnerable to other STIs, the presence of which greatly enhances the risk of HIV infection. STIs that bring on recognizable symptoms in men are often asymptomatic in women and, therefore, remain untreated. Whatever the exact dynamics, young women attain high HIV infection levels at notably younger ages than young men.

Generally, women lack complete control over their lives and are taught from early childhood to be obedient and submissive to males, particularly males who command power such as a father, uncle, husband, elder brother, or guardian. In sexual relations, a woman is expected to please her male partner, even at the expense of her own pleasure and well being. Dominance of male interests and lack of self-assertiveness on the part of women puts them at risk. Women are taught to never refuse having sex with their husbands, regardless of the number of partners he may have or his unwillingness to use condoms, even if he is suspected of having HIV or another STI. Also, to enhance male pleasure, a number of women continue to practice dry sex, which can increase vulnerability to infection through exposing genital organs to bruising and laceration.

Adolescent sexuality is increasingly becoming an important concern. Young women are at a higher risk because the physiological immaturity of their reproductive systems provides less of a barrier to HIV transmission. Exchange of sex for money or gifts is a coping strategy for dealing with poverty and may not be perceived as commercial sex work. Studies on adolescent reproductive health, including patterns of sexual behaviour, indicate this to be a frequent occurrence. Males are expected periodically to provide gifts and/or money to their partners. Failure to do so results in curtailment of the relationship and formation of a new one with someone else. The unstable and temporary nature of these relationships often results in multiple partners over time.

Care of the sick continues to be a responsibility of the women within the family. Since women are agricultural workers as well, this can have a substantial impact on food security. Women, also, are the immediate nurturers of orphaned children, many of whom are survivors of AIDS-affected households. Girls in the household also share or totally assume care-giving responsibilities for siblings and ailing parents, sometimes leaving school early in order to shoulder these responsibilities.
HIV and Tuberculosis

Efforts in the past 20 years to control tuberculosis had been showing some success. However, recently the number of TB cases been rising rapidly, due to the spread of HIV infection. HIV infection weakens the immune system of otherwise healthy adults. Many, perhaps one-half, of all adults carry a latent TB infection that is suppressed by a healthy immune system. When HIV weakens the immune system, it can no longer control the TB infection and overt TB can develop.

In the absence of HIV, the number of new TB infections would be limited to about 10,000 today, based on the case rates seen in prior years. Because many people are infected with HIV there are about three times as many cases today.

The consequences of a sharp rise in TB go beyond simple health concerns. Rising TB infections drains resources from other essential health and welfare services if quality services are maintained. A breakdown in TB treatment services that leaves patients half-treated may lead to the faster development of drug-resistant strains of the disease. Since many patients are have both HIV and TB infections it is important that programs are integrated. TB patients need to be screened for HIV so that they can have access to appropriate services. HIV patients need to be screened for TB and provided with prophylaxis to prevent them from developing active TB.
Other Impacts

The AIDS epidemic has many other impacts beyond those addressed here. For example high rates of AIDS deaths can affect education, economic activity, family and community structure, crime, military preparedness and food security.

The impact of HIV/AIDS will affect both the supply of and demand for educational services. For example, the supply of teachers decreases because of increasing absenteeism from AIDS. Training costs for teachers (and other education officers) rise to replace those lost to the epidemic. Less public finance will be available for the schools, in part because of the diversion of public funds to address the manifold impacts of the epidemic. The demand for schooling is also affected by AIDS. Because an AIDS death to an adult results in the loss of household labour and/or income, children are often required to leave school and remain at home or go to work to compensate for losses and to avoid school fees. Girls, in particular, may have to forfeit their educational opportunities. Orphans often lose the necessary financial, material, and emotional support that they need for successful schooling.

The economic effects of HIV/AIDS are felt first by individuals and their families. The household impacts begin as soon as a member of the household starts to suffer from HIV-related illnesses. Illness prevents the primary breadwinner from working, increases the amount of money the household spends on health care, and requires other household members to miss school or work in order to care for the patient. Death of the patient results in a permanent loss of income, either through lost wages and remittances, or through a decrease in agricultural labour supply. Households must also bear the costs of funerals and mourning, which in some settings are substantial. When children are withdrawn from school in order to save on educational expenses and increase the labour supply, the household suffers a severe loss of future earning potential.

Agriculture is the largest economic sector in Malawi accounting for a large portion of production and a majority of employment. AIDS has adverse effects on agriculture, including loss of labour supply and remittance income. The loss of a few workers at the crucial periods of planting and harvesting can significantly reduce the size of harvests. Additionally, a loss of agricultural labour is likely to cause farmers to switch to less labour-intensive crops. In many cases this may mean switching from export crops to food crops. Thus, AIDS could affect the production of cash crops and, as a result, affect foreign exchange earnings. Production may also suffer as the timing of general agricultural tasks is disrupted as workers fall ill and as others need to take time off to care for them.

One study examined the impact of HIV/AIDS on food security through weekly interviews in 123 peasant households. Case histories were developed on how the households coped with illness, deaths, and social obligations. Household food security was measured by calculating cash income and maize production. The author found that because AIDS increases the pressures on the households, the normal redistribution and reciprocity arrangements that have allowed households to share resources during periods of food shortage are severely threatened.

Fisheries play a significant role in food provision in Malawi; Capture Fisheries alone supplies 40% of the total supply of protein for the country. A case study of the fisheries industry found that government officials in the fisheries programme are becoming more and more concerned about the increasing mortality in the staff of the fishing crews. The mortality leads to increased turnover rates.

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and the need to train new staff to replace those who have died. Absenteeism has also become a problem, because of both AIDS-related morbidity and funeral attendance\textsuperscript{4}.

HIV/AIDS may have a significant impact on firms. AIDS-related illnesses and deaths to employees affect a firm by both increasing expenditures and reducing revenues. Expenditures are increased for health care costs, burial fees, and training and recruitment of employees to replace those who are ill or who died. Revenues may be decreased because of absenteeism due to illness or attendance at funerals and time spent on training. Labour turnover can lead to a less experienced labour force that is less productive. A study conducted at a sugar mill in South Africa found that HIV+ workers incurred an average of 55 additional sick days during the last two years of their life.

III. THE WAY FORWARD

The AIDS epidemic has hit Malawi hard. Levels of infection increased rapidly in the late 1980s and early 1990s and have stabilized at 12-17 percent for the last several years. If the epidemic continues at these levels, the impacts will be even more severe than they are now. But that is not inevitable. Much can be done now to prevent new infections. The National AIDS Commission coordinates a multi-sectoral response that aims to involve all sectors of government in the effort. Communities, civil society organizations, international and national non-governmental organizations and the private sector are all contributing. International donors have provided significant resources to fund programs to scale-up prevention programs, expand care and treatment, and mitigate the effects of the epidemic.

At current rates, over a million people will become infected with HIV in the next eight years, a number larger than the total number of people infected today. Successful efforts to expand effective prevention programs can avert as many as two-thirds of these infections\(^5\). There is an urgent need for everyone to work together to make this happen.

The prevention effort requires improvements and scaling-up in many areas, including:

- **Creating a supportive policy environment**
  - Completing, approving and implementing the national HIV/AIDS policy
  - Reducing stigma and discrimination
  - Protecting the human rights of people living with HIV/AIDS
  - Supporting community efforts to mobilize and inform their members
  - Mass media campaigns to inform the general public

- **Promoting behavior change**
  - Voluntary counseling and testing to allow people to learn their HIV status and how to protect themselves and others
  - Behavior change programs, including peer education and outreach programs, that support effective behavior change
  - Focus on special populations including youth, sex workers and clients, military personnel, migrants and others that may be placed in risky situations

- **Delivery of essential services**
  - Safe blood transfusion
  - Condom availability
  - Treatment for sexually transmitted diseases
  - Workplace programs
  - Programs to prevent mother-to-child transmission About 500,000 pregnant women need good antenatal care including HIV counseling and testing. About 75,000 need anti-retroviral therapy to prevent passing the infection to their new born children.

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Even with successful efforts to prevent new infections there will be a need to expand care, treatment and mitigation.

- 160,000 people are in need of care and support including
  - palliative care to alleviate pain
  - treatment of opportunistic infections
  - prophylaxis to prevent opportunistic infections, such as tuberculosis
  - anti-retroviral therapy.
- An even larger number need voluntary counseling and testing to learn their HIV status.
- Almost one million orphans and vulnerable children need support.

A recent assessment of program effort, call the AIDS Program Effort Index (API), found that Malawi is doing relatively well compared to many other countries in sub-Saharan Africa, particularly in terms of political support, policy formulation and mitigation efforts. However, much more effort is needed to use program resources effectively, expand care and support and protect human rights.

The next few years will present a difficult challenge. Failure to respond to that challenge effectively will mean many more new infections and AIDS deaths. A successful response can save many lives and protect the family, community and social structure. Greater efforts are needed from everyone to meet this challenge.
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