AIDS in Ethiopia

Background
Projections
Impacts
Interventions
Policy

Diseases Prevention and Control
Department
Ministry of Health

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AACA-AC</td>
<td>Addis Ababa City Administration AIDS Council</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>AIM</td>
<td>AIDS Impact Model</td>
</tr>
<tr>
<td>ANC</td>
<td>Antenatal Care</td>
</tr>
<tr>
<td>AZT</td>
<td>Azidovdine</td>
</tr>
<tr>
<td>EHNRI</td>
<td>Ethiopian Health and Nutrition Research Institute</td>
</tr>
<tr>
<td>ENARP</td>
<td>Ethio-Netherlands AIDS Research Project</td>
</tr>
<tr>
<td>HAART</td>
<td>Highly Active Anti-Retroviral Therapy</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>IEC</td>
<td>Information, Education and Communication</td>
</tr>
<tr>
<td>MTCT</td>
<td>Mother-to-Child Transmission</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>MTP-I</td>
<td>First Medium Term Plan</td>
</tr>
<tr>
<td>MTP-II</td>
<td>Second Medium Term Plan</td>
</tr>
<tr>
<td>NAC</td>
<td>National AIDS Council</td>
</tr>
<tr>
<td>NGO</td>
<td>Non Governmental Organization</td>
</tr>
<tr>
<td>PLWHA</td>
<td>People Living with HIV/AIDS</td>
</tr>
<tr>
<td>STD</td>
<td>Sexually Transmitted Disease</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>UNAIDS</td>
<td>Joint United Nations Programme on AIDS</td>
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</table>
Foreword

A decade ago, HIV/AIDS was regarded primarily as a serious health crisis. Today it is clear that AIDS has become a serious development crisis, with impacts and implications for all sectors. Already, 18.8 million people around the world have died of AIDS, 3.8 million of them are children. Nearly twice that many, 34.3 million, are now living with HIV, the virus that causes AIDS. The most recent UNAIDS/WHO estimates show that, in 1999 alone, 5.4 million people were newly infected with AIDS. More than 70% of total people living with HIV/AIDS, 78% of AIDS cases and 68% of new infection have occurred in Sub-Saharan Africa.

The virus has also infected many Ethiopians. For every 13 adults, one is infected. In urban areas, more than one out of every six adults is infected. Most of these people do not know they are infected. Over 400,000 people may have already developed AIDS since the beginning of the epidemic (although only a small portion of these have been recorded in the official health statistics). Since there is no cure for AIDS, this disease threatens the social and economic well-being of the country. However, this is not inevitable. If we act now, there is much we can do to slow the spread of AIDS. We face many serious health problems in Ethiopia and sometimes the health needs of the population seem overwhelming in the face of limited resources. Yet AIDS is not just one more health challenge among many; rather, it is a killer disease of unprecedented proportions that will have a devastating impact on the country unless appropriate measures are taken.

Still, the fundamental intention of this briefing book is not to be alarmist but to offer hope. More than 90 percent of our adults are not infected, and all of these uninfected men and women can take positive and active steps to protect themselves from HIV. The national goal should be to adopt policies and measures to help them to do so. People who are already infected can help prevent further infections and can improve the quality of their own lives. People who have HIV but who have not yet developed AIDS can continue to live full and productive lives, often for many years. People living with HIV/AIDS should not be stigmatized or discriminated against; rather, they deserve our compassion, care and support. If institutions and individuals all do their part, I am convinced we can change the course and impact of the epidemic in Ethiopia.

This booklet and the presentation on which it is based are intended to provide accurate information about the current status of the epidemic, the likely future consequences and the programmes that can combat it. It has been prepared by the Diseases Prevention and Control Department of the Ministry of Health. Other government ministries also have participated in the design and development of these activities. This effort has benefited from the feedback provided by many individuals who reviewed early versions of the presentation and booklet. We welcome additional comments from people who read this booklet so that future versions can be improved. The first version of this booklet was prepared in 1995-96. The second edition was produced in April 1998. This third edition, produced in August 2000, contains updated information based on new data collected in 1999 and 2000 and on our increased understanding of many aspects of the AIDS epidemic based on research in Ethiopia and around the world.

Finally, I would like to thank the United States Agency for International Development for financial support and The POLICY Project for technical assistance.

Dr. Lamiso Hayeso
Vice - Minister, Minister of Health of the Federal Democratic Government of Ethiopia
August 2000
Introduction

This booklet is intended to provide information about the AIDS epidemic in Ethiopia. This material is also available as a slide or interactive computer presentation. The information is provided in five major areas:

**Background:** What we know about HIV/AIDS in Ethiopia today

**Projections:** The number of people who might develop AIDS in the future if current trends continue

**Impacts:** The social and economic impacts of AIDS

**Interventions:** What needs to be done to prevent the spread of AIDS

**Policy:** National HIV/AIDS Policy implementation environment and the role of the National AIDS Council

At this point we want to note to our readers that there is a change in the methodology of both assumptions and technique in computing the national estimates on adult HIV prevalence. The methodology used in such national estimaten and projection of HIV prevalence depend on what types of data are available in that specific country. In our cases the way the previous (the 1996 and the 1998) HIV prevalence estimation was based on risk groups analysis, while the current estimates based on ANC sentinel surveillance data.

Although both are still estimates, the 2000 estimation and projection is more close to reality for it benefited from more recent and more extensive data.

It should also be noted that in the previous reports on the national prevalence was defined as the percentage of the adult population aged 15 years and older infected with HIV. UNAIDS and its international working group on monitoring the HIV/AIDS epidemic has now standardized the definition of adult HIV prevalence as the percentage of the adult population between the ages of 15 and 49 that is infected with HIV. The reason for adopting this new definition is that almost all data used for estimating prevalence comes from antenatal care data, representing women aged 15-49. However, estimates of the total number of HIV infections will still include all age groups.

Requests for presentations of this material or copies of this booklet should be directed to the Diseases Prevention and Control Department, Ministry of Health. The address is on the last page.
I. Background

What is HIV/AIDS?

Transmission Mechanisms

Incubation Period

The HIV/AIDS Pyramid

Reported transmission mechanism

Risk Factors for HIV Transmission

Age and Sex Distribution of Reported AIDS Cases
What is HIV/AIDS?

A pattern of highly unusual infection in otherwise healthy young adults emerged in the early 1980s in the United States of America. This pattern or clusters of diseases that appeared in those whose immune system being attacked, came to be called Acquired Immune Deficiency Syndrome (AIDS). Between the 1983 and 1994 a new virus called Human Immunodeficiency Virus (HIV) has been identified as a cause of AIDS.

Hence, Human Immunodeficiency Virus (HIV) is the virus that causes Acquired Immune Deficiency Syndrome (AIDS). People are said to be HIV positive when the HIV antibody is detected in their blood. HIV attacks and destroys certain types of white blood cells that are essential to body's immune system, the biological ability of the human body to fight infections. The infected person becomes susceptible to a wide range of opportunistic infections, such as tuberculosis and Pneumocystic Carinii Pnemonia, and rare cancer such as Caposis Sarcoma.

A person can be infected with HIV for a long time, perhaps 3 to 10 years, without showing any symptoms or only minor illnesses. Nonetheless, during that period before a person develops symptoms, he or she can transmit the infection, in most cases, through sexual contact to other uninfected people. An infected woman may also transmit the disease to her infant during pregnancy, delivery or breastfeeding. HIV may also be spread by transfusions of contaminated blood and by sharing needles used for injection drug use. AIDS itself is defined in terms of how much deterioration of the immune system has taken place as indicated by the presence of opportunistic infections. Although there are treatments that can extend life virtually all infected persons die from the disease.

AIDS stands for Acquired Immune Deficiency Syndrome. It is a disease caused by the Human Immunodeficiency Virus or HIV. It acts by weakening the immune system, making the body susceptible to and unable to recover from other diseases.
## Transmission mechanism

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sexual contact</strong></td>
<td>The majority of infections are transmitted through heterosexual contact. The practice of multiple partner sexual contact is the biggest risk factor for HIV transmission. Partners of people who practice multiple partner sexual contact are also at risk. Thus, a woman whose husband has multiple partners is at risk even though she may be faithful to her husband. 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 of a sexually transmitted disease (STD), such as syphilis or gonorrhea, in either partner and having a large number of sexual partners.</td>
</tr>
<tr>
<td><strong>Perinatal transmission</strong></td>
<td>Many children are infected perinatally; that is, they receive the infection from their mothers during pregnancy, at the time of birth or through breast milk. About 35 percent of babies born to infected mothers will themselves be infected.</td>
</tr>
<tr>
<td><strong>Blood transfusion</strong></td>
<td>Transfusion with infected blood will almost always transmit HIV. However, in Ethiopia most blood is screened for HIV.</td>
</tr>
<tr>
<td><strong>Unsafe injections</strong></td>
<td>HIV can be transmitted by injection if the same needle is used to inject many people, without being sterilized after each use. Proper health practice requires sterilization of needles after each use or the use of disposable syringes. However, some illegal injectionists do not follow these practices. These unsafe practices can result in new cases of HIV infection.</td>
</tr>
</tbody>
</table>
Incubation Period

**Adult incubation period**

A person does not develop AIDS as soon as he or she becomes infected with HIV. There is a lengthy incubation period that may last from 3 to 12 years. Some people may survive longer than 12 years with an HIV infection while others may develop AIDS and die two or three years after infection. The average time from infection with HIV to development of the disease AIDS is about 8 years. That is, on average, a person does not develop AIDS until 8 years after becoming infected. For most of this period the person may not have any symptoms and, therefore, may not 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 realizing it.
**Child Incubation Period**

For children the incubation period is much shorter because their immune systems are not yet fully developed. Most children who are infected at birth or shortly thereafter through breastfeeding develop AIDS and die within two years.
The HIV/AIDS Pyramid

AIDS has spread throughout the country; cases have been reported from every region. There were 83,487 cases of AIDS reported to the Ministry of Health since the beginning of the AIDS epidemic through March 2000. These reported AIDS cases represent the visible part of the epidemic. However, there is much more to the epidemic than the number of reported cases.

We know that not all AIDS cases are reported. This can happen for several reasons:
- some people never seek hospital care for AIDS,
- some doctors may not record a diagnosis of AIDS because of the stigma attached to AIDS,
- some people with HIV infection may die of other diseases before they are ever diagnosed as having AIDS,
- some rural heath care facilities may not have the capability to test for HIV infection, and
- many people have poor access to health service units.

Due to the above mentioned reasons the reported AIDS cases are only the tip of the pyramid. The true number of AIDS cases since the beginning of the epidemic in Ethiopia is not known, but probably numbered about 400,000 by the end of 1999.

Many more people are infected with HIV. In 2000 it is estimated that there are about 2.6 million people infected with HIV. Most of these people do not know they are infected. They may have no symptoms at all. However, almost all, if not all, will develop AIDS and die within the next 10 years or so.
Reported Transmission Mechanisms

HIV can be transmitted from one person to another in a number of ways, the vast majority of infection occur through unprotected sexual contact. In Ethiopia, the four important transmission mechanisms are: Sexual contact, perinatal transmission, blood transfusion and unsafe injections.

According to the reports of AIDS cases submitted to the Ministry of Health, 87 percent of new HIV infections are due to the practice of multiple partner sexual contact. Very few cases of child AIDS was reported and this is, perhaps, due to the difficulty of diagnosing AIDS in such young children. A small number of new infections are due to contaminated blood transfusions and to unsafe injections.

From this pattern of reported AIDS cases it can be assumed that multiple partner sexual contact accounts for the largest amount, about three-quarters, of all new HIV infections in Ethiopia.

If the 'non reported' proportion and under reporting was adjusted one can find that perinatal transmission probably contribute up to 25 percent of transmission for all new infections.
**Risk Factors for HIV Transmission**

The two most important risk factors involved in the spread of HIV infection are having sexual contact with many different partners and having a sexually transmitted disease (STD).

People who have many sexual partners have an increased risk of acquiring the virus from one of those partners. Commercial sex workers have a particularly high risk because of the large number of different partners they have. Surveys conducted in several cities over the past few years have documented high rates of HIV infection among commercial sex workers. Infection levels are above 65-70 percent in commercial sex workers in Baherdar and Nazareth. These surveys also illustrate the rapid increase in infection that can take place. In Metu, HIV prevalence among commercial sex workers rose from 5.3 percent in 1988 to 36.8 percent in 1990. In the other cities, prevalence doubled or tripled in two to three years.

Men who visit commercial sex workers have a high risk of acquiring the virus. If a married man becomes infected through contact with a commercial sex worker, he may carry the virus home to his wife. Thus, even women who are faithful to their partners can be at risk of acquiring HIV if their husbands are not faithful.

Although the risk of HIV is highest for commercial sex workers, anyone engaging in sex with multiple partners is at risk of catching HIV. Several studies have found that the practice of multiple partner sex is widespread. One study of the urban population found that 22 percent of adult males and 8 percent of women engaged in sex with multiple partners [Mehret, 1995]. Another study, conducted in a senior high school in Addis Ababa, found that 53 percent of male students and 24 percent of female students were sexually active [Gabre, 1990]. Since they generally have more than one partner, these young people have a high risk of becoming infected with HIV.

The presence of a sexually transmitted disease (STD) can also increase the risk of acquiring an HIV infection. The presence of an STD in either partner makes it much more likely that the virus will be transmitted in each sexual contact. Studies among patients of STD clinics in Kazanches and Tekle Haimanot found that 30-40 percent of them were also infected with HIV. This is three times higher than prevalence of infection among the general urban population. STDs are most prevalent among those who have sexual contact with multiple partners.
Age Distribution of Reported AIDS Cases

The Disease prevention and Control Department compiles reports of AIDS cases from hospitals around the country. The distribution of these cases by the age and sex of the patient is shown in the bar chart below. Each vertical bar shows the number of reported AIDS cases in a particular age group. Males are shown with the red bar while females with yellow bar.
This previous chart illustrates several important facts:

- About 91 percent of reported AIDS cases occur to adults between the ages of 15 and 49. Since this is the most economically productive part of the population, these deaths constitute an important economic burden. This is also the age when investments in education are just beginning to pay off. These deaths also have important consequences for children since most people in this age group are raising young children.

- There is roughly an equal number of male and female cases. This is because most infection is acquired through sexual contact.

- The peak ages for AIDS cases are 20-29 for females and 20-39 for males. Since AIDS cases result from HIV infection acquired about 8 years earlier, this means that the peak ages for new HIV infection are 15-24 for females and 15-34 for males.

- The number of females infected in the 15-19 age group is much higher than for males in the same age group. This is due to earlier sexual activity by young females and the fact that they often have older partners.

- There have been a significant number of AIDS cases reported among young children. Most of these received the infection from their mothers during gestation or at the time of birth and probably through breast feeding.

- The absence of many AIDS cases in the 5-14 year old age group shows that infection is not transmitted by mosquitoes or casual contact such as shaking hands or kissing. Traditional malpractices and unclean injection practices might account for the transmission of the virus in this age group and below.

- There are very few cases of AIDS among children between the ages of 5-14. This is the “Window of Hope”. If these children can be taught to protect themselves from HIV infection before they become sexually active, they can remain free of HIV for their entire lives. But action must be taken now, because rates of new infection are quite high once children reach the 15-19 age group.
II. HIV/AIDS estimation

Sentinel surveillance system

Ethiopian ANC sentinel surveillance result

Methodology used to estimate the National Adult prevalence
**Sentinel surveillance system**

Sentinel surveillance systems for HIV are designed to provide information on trends to policy makers and programme planners. The data are useful for understanding the magnitude of the HIV/AIDS problem in certain geographic areas and among special populations and for monitoring the impact of interventions. These data also can be used to prepare an estimate of national HIV prevalence suitable for advocacy purposes.

Antenatal care (ANC) sentinel surveillance is a serial collection of HIV prevalence data on pregnant women attending antenatal clinic. There are a number of reasons to suggest that the ANC data would overestimate the prevalence in the general population. However, there are also a number of reasons to suggest that the ANC data would underestimate the prevalence in the general population. The consensus is that these factors cancel each other out, and that ANC prevalence can be broadly used to represent the general adult population. Although we don't have data that compares the two sources in our country, this conclusion is supported by research from a number of different settings that compared the ANC data with population-based surveys.

Reasons that would suggest that ANC data would overestimate prevalence in the general population include differences in the age distribution of pregnant women compared to all women 15-49, the proportion of the population 15-49 that is sexually active and differences between female and male prevalence. ANC data represent sexually active women, with fertility higher at younger ages. In addition, as the AIDS epidemic matures there is clear evidence that women are at a greater physiological risk, and are socially more vulnerable, and thus tend to have higher HIV prevalence than men. UNAIDS is now using a female to male ratio of 1.2:1 for current HIV infections.

On the other hand, studies from several African sites have shown that women with HIV have lower fertility than those without infection, by approximately 30 percent. HIV positive women are thus less likely to be pregnant, and as a result, ANC data tend to under-estimate prevalence among all women aged 15-49.

For the 15-49 age group, these differences tend to cancel each other. As a result, prevalence among pregnant women is widely felt to be a good indicator of prevalence among all adults 15-49, without any adjustments. (This conclusion is only valid for the population 15-49. For some sub-populations, such as 15-19, there are significant differences in prevalence between pregnant women and all adults.) Therefore, in this analysis HIV prevalence among all ANC clients is assumed to be the same as prevalence among all adults 15-49.

**Ethiopian Sentinel Surveillance result**
The ANC sentinel surveillance system in Ethiopia is implemented by the AIDS and STDs Prevention and Control Team, Diseases Prevention and Control Department, Ministry of Health in collaboration with the Regional Health Bureaus. Data are collected on HIV infection among pregnant women attending antenatal clinics using the unlinked anonymous method recommended by WHO. The first ANC HIV data was collected from four urban and six rural sites in 1992/93. Unfortunately, this effort was not repeated until after six years.

The exception was Addis Ababa where the HIV sentinel surveillance activity was maintained by the Health Bureau of the Addis Ababa City Administration in collaboration with The Ethio-Netherlands AIDS Research Project (ENARP) based in the Ethiopia Health and Nutrition Research Institute (EHNRI). In 1998 HIV sentinel surveillance was begun in five sites in SNNP Region. In March 1999 a clear statement of guidelines for the national sentinel surveillance programme was issued by the MOH (MOH, 1999). Beginning in 1999 and extending into 2000, HIV sentinel surveillance was initiated in 21 sites representing seven regions. To date 16 sites representing six regions have completed and reported their data (Tables 1 and 2). Although not all of the 21 sites have reported, and a full analysis of the quality control has yet to be conducted, the data represent the best source of information available for preparing an estimate of national HIV prevalence and for preparing projections of the impact of the AIDS epidemic in Ethiopia.

For the urban sites, surveillance data are available for Addis Ababa, Bahir Dar, Dire Dawa and Gambella for several years, including 1999/2000, allowing analysis of the trend in prevalence. The Addis Ababa 1996, 1997, and 1999 ANC prevalence have been averaged to provide a 1999 reference prevalence of 16.8 for Addis Ababa. HIV prevalence for other urban areas was calculated by averaging the nine urban sites ANC data (excluding Addis Ababa) which were collected in 1999, which came at 80 percent of the prevalence in Addis Ababa (ratio of 0.8). The HIV prevalence of rural Ethiopia is estimated by averaging the limited available data from three rural sites at approximately 30 percent of the rate in Addis Ababa (ratio of 0.3)
Table 1. Percentage of pregnant women testing HIV positive by sentinel site, 1999/2000

<table>
<thead>
<tr>
<th>Sentinel site</th>
<th>Region</th>
<th>Health Institution</th>
<th>Sample size</th>
<th>Prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attat (rural)</td>
<td>SNNP</td>
<td>Hospital</td>
<td>400</td>
<td>4.0</td>
</tr>
<tr>
<td>Awassa</td>
<td>“</td>
<td>Health Center</td>
<td>400</td>
<td>11.5</td>
</tr>
<tr>
<td>Dilla</td>
<td>“</td>
<td>Hospital</td>
<td>400</td>
<td>11.8</td>
</tr>
<tr>
<td>Hossana</td>
<td>“</td>
<td>Hospital</td>
<td>400</td>
<td>4.8</td>
</tr>
<tr>
<td>Sodo</td>
<td>“</td>
<td>Health Center</td>
<td>307</td>
<td>10.7</td>
</tr>
<tr>
<td>Gambo (rural)</td>
<td>Oromia</td>
<td>Hospital</td>
<td>416</td>
<td>0.7</td>
</tr>
<tr>
<td>Mettu</td>
<td>“</td>
<td>Hospital</td>
<td>260</td>
<td>4.0</td>
</tr>
<tr>
<td>Shashemene</td>
<td>“</td>
<td>Health Center</td>
<td>414</td>
<td>14.3</td>
</tr>
<tr>
<td>Bahir Dar</td>
<td>Amhara</td>
<td>Health Center</td>
<td>260</td>
<td>20.8</td>
</tr>
<tr>
<td>Dire Dawa</td>
<td>Dire Dawa</td>
<td>Hospital</td>
<td>375</td>
<td>13.6</td>
</tr>
<tr>
<td>Gambella</td>
<td>Gambella</td>
<td>Hospital</td>
<td>300</td>
<td>19.0</td>
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<tr>
<td>Teklehymanot</td>
<td>Addis Ababa</td>
<td>Health Center</td>
<td>293</td>
<td>14.0</td>
</tr>
<tr>
<td>Kazanches</td>
<td>&quot;</td>
<td>Health Center</td>
<td>250</td>
<td>18.0</td>
</tr>
<tr>
<td>Higher 23</td>
<td>&quot;</td>
<td>Health Center</td>
<td>308</td>
<td>10.7</td>
</tr>
<tr>
<td>Gulele</td>
<td>&quot;</td>
<td>Health Center</td>
<td>292</td>
<td>18.2</td>
</tr>
</tbody>
</table>

Source: Ministry of Health with Regional Health Bureaus

Table 2. Percentage of pregnant women testing HIV positive by sentinel site: sites with more than one year reported, 1989-1999/2000

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Addis Ababa</td>
<td>4.6%</td>
<td>11.2%</td>
<td>17.8%</td>
<td>17.5%</td>
<td></td>
<td>15.05%</td>
</tr>
<tr>
<td>Mettu</td>
<td>-</td>
<td>10.7%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4.0%</td>
</tr>
<tr>
<td>Bahir Dar</td>
<td>-</td>
<td>13.0%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>20.8%</td>
</tr>
<tr>
<td>Gambella</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>12.7%</td>
<td></td>
<td>19.0%</td>
</tr>
<tr>
<td>Dire Dawa</td>
<td>-</td>
<td>12.3%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>13.6%</td>
</tr>
<tr>
<td>Awassa</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14.4%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Attat</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.8%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Dilla</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14.5%</td>
<td>11.7%</td>
</tr>
<tr>
<td>Hossana</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.6%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Sodo</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9.2%</td>
<td>10.7%</td>
</tr>
</tbody>
</table>

Source: Ministry of Health with Regional Health Bureaus

Methodology used to estimate the National Adult prevalence
Method used to estimate the 2000 national HIV prevalence

Today, in estimating the national HIV prevalence, we have more representative sentinel surveillance data that can be used directly, weighting the ANC data to represent populations by geographic area and by urban or rural residence. Hence, adult HIV prevalence of 16.8 percent for Addis Ababa (reference rural prevalence), with the ratio of 0.8 and 0.3 to other rural and urban was assumed to calculate the national adult HIV prevalence in producing this booklet, AIDS in Ethiopia, 2000.

The resulting national HIV prevalence was used in a program called DemProj (population projections model) and AIM (AIDS impact model) to calculate the number of current adult HIV infections and to make projections into the future. Using another computer based software called SPECTRUM model, the number of infected children was calculated from the age-specific infection rates among women, the age-specific fertility rates, the perinatal transmission rate, the non-AIDS age-specific death rates and the distribution of the time from birth to AIDS death for infected new borns.

In preparing the population projections, the size of the adult population by urban/rural residence and sex was taken from the 1984 population census [Office of Population and Housing Census Commission, 1991]. The fertility and mortality assumptions was taken from the estimates and projections of the United Nations Population Division [United Nations, 1995], which was adjusted to match the 1994 figure of the Population and Housing Census of Ethiopia [Office of Population and Housing Census Commission, 1998].

Method used in estimating the 1996 and 1998 national HIV prevalence

The very limited data available during the late 80s and the early 90s in the country did not allow to use ANC data to estimating national prevalence. In early 1993 surveys were conducted among the general sexually active population in six rural sites: Seya Debir (North Shoa), Shola Gebeya (North Shoa), Enda Mariam Kanaro (Tigray), Ayuba (Arsi), Raytu (Bale) and Beneste (South Omo). The results show that 0-7 percent of the population were infected. It is clear from these surveys that HIV infection is present in all regions of the country but is particularly high in urban areas.

In 1996 and 1998 national HIV estimates were prepared employing a methodology first used by Khodakevich in 1990 [Khodakevich, 1990] with some modifications. The adult population was first divided into five different groups: urban females practicing multiple partner sexual contacts (MPSC), other urban females, urban males, rural females, and rural males [MOH, 1996, 1998; Stover and Negassa, 1998]. The number of adults in each of these population groups was multiplied by the HIV prevalence for that group to determine the number of infected adults in each group. These numbers were summed to determine the total number of infected adults. This analysis required a number of assumptions about both the population of the various risk groups and the HIV prevalence of the groups.
III. HIV/AIDS Projections and Impact

IIIA. HIV prevalence and AIDS case

Current Estimates of HIV prevalence

Projected HIV Prevalence

Number of Future HIV Infections and AIDS Cases

Annual Deaths to Persons Aged 15-49
HIV prevalence and AIDS case

Current Estimates of HIV Prevalence

HIV probably started to spread in Ethiopia in the early 1980s. The first evidence of HIV infection was found in 1984. The first AIDS case was reported in 1986. Although HIV prevalence was very low in Ethiopia during the early 1980s, it has been assumed to increase rapidly during mid 1990's. It was estimated that by 1989, adult HIV prevalence had increased to 2.7 percent. The estimated adult prevalence of 7.1 percent in 1997 has increased to 7.3 percent.

The current adult prevalence in urban Ethiopia is estimated to be much higher, 13.4 percent (16.8 percent in Addis Ababa) than in rural areas of about 5 percent.

Today the total number of adults and children infected with HIV is estimated to be about 2.6 million, out of which 250,000 HIV infections are among children under the age of five years.

<table>
<thead>
<tr>
<th>Year</th>
<th>HIV Prevalence</th>
<th>Number infected with HIV in 2000:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>0.0%</td>
<td>2.6 (2.0-3.2) million people</td>
</tr>
<tr>
<td>1989</td>
<td>2.7%</td>
<td>2.4 million adults</td>
</tr>
<tr>
<td>1993</td>
<td>6.2%</td>
<td>250,000 children</td>
</tr>
<tr>
<td>1997</td>
<td>7.1%</td>
<td>7.3% (6-9) national</td>
</tr>
<tr>
<td>2000</td>
<td>7.3%</td>
<td>16.8% Addis Ababa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.4% Other Urban</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0% Rural</td>
</tr>
</tbody>
</table>
Projected HIV Prevalence

HIV prevalence has been increasing steadily in most areas of Ethiopia, however the rate of increase is different in urban and rural parts. Although little recent information is available for rural areas, it is likely that prevalence is still increasing there.

The current estimate of the national adult HIV prevalence at 7.3 percent was compared with nine other African countries adult HIV prevalence rate [UNAIDS 2000]. The chart below shows the wide variation in the prevalence among these countries. This variation could have many reasons. Higher prevalence in other countries may be explained by an early introduction of the virus and the difference in the behavioral patterns.

In terms of the absolute number of people infected, Ethiopia ranks the third next to South Africa and Nigeria which have about 4.2 and 2.7 million infected people respectively.

![Adult HIV Prevalence in Ten African Countries (2000)](chart)

according to this estimate, the 2000 adult HIV prevalence of 7.3 percent is expected to increase to 7.7 percent by 2006 and then probably reach to a level where it may stabilize, a level at which the number of new infection equals the number of death due to AIDS.

Evidence from other countries does seem to suggest that adult prevalence will stabilize at some level. Eight percent may be a conservative estimate of the level at which it would stabilize in Ethiopia. Without effective interventions, it could be much worse.
Number of Future HIV Infections and AIDS Cases

If HIV prevalence does increase to 7.7 percent by the year 2006, then the number of infected people in the population would be expected to raise to 3 million and even to 4 million by 2014. Although this projection assumes HIV prevalence remain at 7.7 percent even after 2006. In fact, this does not mean that the epidemic will not be a problem. Constant prevalence might simply means that the number of new infections every year is equal to the number of people dying of AIDS each year. In this projection, by 2010 about 341,000 people would become infected with HIV every year.
If there are 2.6 million people live with HIV infection today, then it is estimated to have about 130,000 new AIDS cases appeared only in the year 2000. The number of new AIDS cases per year would also increase in the coming years. It is, therefore, expected that by 2004 only there will be about 250,000 people living with HIV develop AIDS. This figure reaches over 350,000 by 2014.
III. HIV/AIDS Projections and Impacts

III. B Demographic Impact

Annual death to Persons Age 15 - 49 years

Cumulative AIDS Deaths

Impact on Life Expectancy

Impact on Population Size and Growth
AIDS will increase the death rate at all ages. However, the impact will be most severe among young adults and children under the age of five. Without AIDS, and assuming a gradual decline in the death rates from other causes, the annual number of deaths among young adults (ages 15 to 49) would increase slowly from about 193,130 today to 230,720 by 2014. However, AIDS will dramatically increase that number, to 463,110 by 2014, which is more than double the projection with no AIDS. By 2004, AIDS may account for about 460 deaths per day among 15 to 49 years old adults. This rapid increase in young adult deaths would have serious consequences for economic and social development. Many of these impacts are examined in the next section of this report.
Cummilative AIDS death

The cumulative number of AIDS deaths from the beginning of the epidemic was estimated at about 1.2 million in 2000. This figure is expected to increase to 1.7 million by the year 2002. Over the ensuing 12 years, 2002 - 2014, an additional 3.55 million Ethiopian are likely to die from the disease which would result in a cummulative total death of about 5.25 million by 2014.
**Impact on Life Expectancy**

One dramatic impact of AIDS death is the decline in life expectancy. The Central statistics Authority (CSA) estimates life expectancy at birth would currently be about 50 years. However due to the large number of infant, children and young adult death due to AIDS, it may only be about 42 years. The future decline is expected to be even much higher, by the year 2004 the life expectancy perhaps will lower by 10 years from that of 56.4% with out AIDS to only 46.5 years due to AIDS.

![Estimated and projected Life Expectancy](image)

**Impact on Population Size and Growth**
AIDS will have a large impact on population size. However, it will not cause population growth to stop or become negative. The following projection estimates life expectancy to raise from about 50 years today to 56 years by the year 2014, if there are no AIDS deaths, assuming a decline both in total fertility rate (the average number of births per woman during her lifetime) declines from about 6.3 today to 5.2 by 2014 and decline in mortality from all causes other than AIDS.

Hence, If there were no AIDS epidemic, the total population of Ethiopia would be expected to increase from about 60 million today to 92 million by 2014. By 2014 the population would be growing at 2.8 percent per year.

however, With a continued AIDS epidemic, the total population would rather be only 85 million by 2014. Thus, the combined impact of the AIDS epidemic, such as AIDS death, reduction in fertility due to condom use to prevent infection, fewer births because of a smaller reproductive age population fertility reduction due to HIV infection would be expected to result in almost 7 million fewer people by 2014. However, by that time the population would still be growing at 2.3 percent per year.
III. C The Social and Economic Impacts of AIDS

Health Care Impacts: Costs of Health Care, Childhood Deaths, and HIV and Tuberculosis

Economic Impacts: Macro-Economic Growth, Rural Sector and Smallholder Farmers, and Industrial Sector and Commercial Agriculture

Social Impacts: Personal and Psychological Impacts, Women, AIDS Orphans, and Impact on Education
Health Care Impacts

Costs of Health Care

AIDS is an expensive disease that will require a considerable amount of resources from the health system. A study [Kello, 1994] estimated that the cost of hospital care for an AIDS patient ranged from 425 to 3140 Birr during (average of 1800 Birr) the course of the illness. If the expenditure rate remained constant at 1800 Birr, then the total hospital costs for an AIDS care would be about 82 million Birr today and may even increase to 210 million Birr by 2014, which amount to one-third of the budget of the Ministry of Health. Clearly, this would place a tremendous burden on the public health system to provide adequate care for AIDS patients and still try to meet all the other health needs of the population.

The demand on health services caused by AIDS can also be illustrated by looking at hospital bed utilization. Not all people with AIDS seek hospital care. But, for those that do, the average length of stay is considerably longer than for most other diseases, perhaps as long as 40 days. Today, as much as 42% of all hospital beds in the country are estimated to be occupied by AIDS patients. As the epidemic grows, so will the hospital bed requirements. By 2004 more than half (54%) of all hospital beds would be required for AIDS patients, if no new beds became available. This would leave an insufficient number of beds for patients from all other causes. Therefore, AIDS must be controlled or it will seriously affect the provision of health services to all.

Estimated and projected Hospital Bed Utilization

![Diagram showing hospital bed utilization]
**Childhood Deaths**

AIDS also affects child survival. According to UNAIDS about 30-40 percent of babies born to infected mothers in developing world would also be infected with HIV. Most of these babies will develop AIDS and die within two years. Few will survive past the age of five.

AIDS could soon become the major cause of death for children under the age of five, worse than other major causes such as diarrhea and respiratory diseases.

The increasing number of child deaths due to AIDS threatens to reverse many of the recent gains of child survival programmes.

- The infant mortality rate is the number of infants who die during the first year of life per 1000 live births. It is currently around 110. Without AIDS the infant mortality rate might be expected to decline to 79 by 2014. However with AIDS, it would decline to only about 85.

- The child mortality rate is the number of children who die before reaching their fifth birthday per 1000 live births. It is currently around 183. Without AIDS it might be expected to decline to around 127 by 2014, because of child survival programs such as diarrhea control and immunization. However, with AIDS it is likely to decline only to about 147.

![Estimated and projected Annual Deaths to Children Under the Age of Five](chart.png)
HIV and Tuberculosis

Recently the number of TB cases has been rising rapidly. This is partially due to the spread of HIV infection. HIV infection weakens the immune system of otherwise healthy adults. Many, perhaps half, of all adults in Ethiopia carry a latent TB infection which is suppressed by a healthy immune system. When that immune system is weakened by HIV, 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 0.12 percent of the adult population [National Tuberculosis Control Programme]. This would result in 35,000 to 55,000 new TB cases each year.

With AIDS, the number of new cases will increase. If we assume that, among people with both HIV and latent TB infections, 8 percent develop active TB each year [Harries, 1990], then the additional number of TB cases due to HIV infection would be about 82,800 in 2000 and 130,380 by 2014. Even this is likely to be an under-estimate since these new cases may transmit the disease to others.

The impact of HIV infection on tuberculosis is a serious problem. Since TB can be infectious through casual contact the increased number of TB cases due to HIV can also lead to additional TB cases among those who are not infected with HIV. Also drug-resistant strains of TB are appearing, making it much more difficult and expensive to treat tuberculosis.
Economic Impacts

Macro-Economic Growth

AIDS will impact the economic development of Ethiopia in a number of ways. The loss of young adults in their most productive years of life will certainly affect overall economic output. The magnitude of the effect could be large or small depending on several factors. If AIDS is more prevalent among the economic elite, the best-educated people with the highest-paying jobs, then the impact could be much larger than the absolute number of AIDS deaths would indicate. It is also important to consider how the private costs of AIDS will be paid. These costs include expenditures for medical care, drugs, funeral expenses, etc. If most of these extra expenditures are financed out of savings then the reduction in investment could lead to a significant reduction in economic growth. One study of the World Bank [Over, 1992] of the economic impacts of AIDS in Africa concluded that the macroeconomic impacts of AIDS could be significant if these two factors are taken into account.

The economic impacts are likely to be larger in some sectors than others. Certainly, health care and insurance are likely to be significantly affected. The military will also be severely affected. Infection rates tend to be quite high among military personnel since many are young, sexually active men who are away from their families for long periods of time. Other sectors that require a mobile work force may also be adversely affected, including transportation, extension services and banking. [Kidane, 1994]

AIDS can also affect foreign exchange allocation. It has been estimated [Kello, 1994] that the foreign exchange requirements for imported drugs could require from 7 to 37 weeks of the entire foreign exchange quota if all AIDS patients received complete drug treatment.

Rural Sector and Smallholder Farmers

Agriculture is the largest sector of the Ethiopian economy. It accounts for nearly half of all production and 85 percent of employment. A healthy and growing rural economy is vital to Ethiopia’s future development. The HIV infection rate of about 5 percent in rural ara of Ethiopia is still likely to grow substantially in the future due to the much higher rates in urban areas and the fact that nearly one-quarter of farmers are assumed to have sexual relationships outside of marriage.

The impacts on agriculture are likely to vary by agricultural system. In rainy areas, where a variety of crops are planted throughout the year, families can cope relatively well with the loss of a few laborers. They may reduce the area cultivated and cut back on the number of crops planted, but may still be able to produce an adequate amount of food. In dry areas, where farming depends on one or two crops that must be planted and harvested at specific times of the year, the impacts are likely to be more severe. In these areas the loss of few workers at the crucial periods of planting and harvesting can significantly reduce the size of the harvest. In these areas, the loss of labor force because of AIDS could make it difficult for families to feed themselves.
A loss of agricultural labor is likely to cause farmers to switch to less-labor-intensive crops. In many cases this may mean switching from export crops to food crops. Thus, AIDS could affect the production of cash crops as well as food crops.

AIDS affects rural households directly when it causes the death of a family member. Since AIDS primarily affects adults between the ages of 20 and 49, it is likely to affect the most productive members of the family. The male head of the household is responsible for special tasks, such as oxen cultivation, harvesting, threshing and farm management. If the male head of the household dies, the wife and other family members will have a hard time carrying out these tasks. The tasks most affected by the loss of the husband vary by region. It would have the most severe effect on harvesting teff in Nazareth, on digging holes for transplanting enset plants in Atat, on ploughing millet fields in Baherdar and on picking coffee in Yirgalem. Women are generally responsible for other tasks: leveling, weeding, harvesting minor crops, transporting products and household duties. The death of the wife to AIDS can make it difficult for other household members to carry out these tasks, in addition to caring for children.

In addition to the direct effects of labour loss, AIDS also affects rural households by reducing income and limiting savings and investment. The loss of income results from being unable to continue to plant and harvest crops as before. The effect is most severe when the husband dies from AIDS. The wife may be unable to continue farming and may have to lease the land to someone else. Financial problems and the loss of farming knowledge often result in reduced use of fertilizer and lower average yields. In rural areas around Nazareth and Baherdar, female headed families generally farm less land than male headed families and produce less on each hectare of land farmed.

In some households, the death of a family member to AIDS may result in a loss of remittances, if that member is a government employee or trader who sends money back to the family.

The death of a family member because of AIDS also leads to a reduction in savings and investment. One study of 25 AIDS-afflicted rural families found that average cost of treatment, funeral and teskar amounted to 2500 Birr, several times the average household income. The stock of food grain was depleted to provide food for mourners and the other expenses were met most often by selling livestock. Such loss of productive assets only makes it harder to survive in the future. [Demeke, 1994]
AIDS can have important impacts on the industrial sector as well. Since the prevalence of HIV infection is higher in urban areas, the industrial work force will be harder hit than the rural work force. When workers die from AIDS, they need to be replaced by the firm. Unskilled or semi-skilled workers may be easily replaced, because of the large number of unemployed people. However, this replacement requires additional expenses for recruiting and training workers.

When skilled laborers or managers are lost, they may be very difficult to replace and there may be a loss of productivity until new workers can gain the necessary experience.

The productivity of the enterprise is also affected even before the employee dies, due to lost work days because of sickness. The number of work days lost to illness for a person with HIV/AIDS can range from as little as 30 to as many as 240 days in a year. Even healthy workers may need more time off from work to attend funerals of relatives and co-workers.

AIDS can also have a significant impact on health care costs for firms that provide health care for their employees. One study of industrial firms found that from 1988-1993 about half of all illnesses reported by employees of these firms were due to AIDS. As the AIDS epidemic worsens the burden from increased health care costs, lost work days and reduced productivity, could become a significant factor in the viability of the firm. [Bersufekad, 1994]

**Impacts on Industry**

- **Loss of workers**
  - Expenses for recruiting/training replacements
  - Reduced productivity in case of skilled worker or manager
- **Lost work days due to sickness**
  - 30 - 240 days per year
- **Lost work days due to funeral leave**
- **Increased health care costs**
  - 50% illness due to AIDS
Social Impacts

Personal and Psychological Impacts

All members of rural families hit by AIDS are likely to be affected. Grandparents may have to assume full responsibility for raising the children when the parents die. Children are more likely to become malnourished, may become orphans and may have fewer opportunities for education if the family cannot afford the expense of education or needs the children to work in the home.

Women

AIDS can have a very serious impact on the lives of women when it strikes a family member. In most cases women do not have a secure occupation which can provide a steady and adequate income. Thus, if the husband dies, the remaining wife and children can be particularly vulnerable. Some women may be exploited or may have to resort to selling sex to provide cash income.

A woman may also have reduced ability to be a provider for the family if she needs to spend a significant portion of her time caring for family members who are sick with AIDS. It may reduce the time she has for productive work as well as affect the amount of time she can spend caring for children. Since other tasks, such as food preparation, fetching water and fire wood, etc., must still be done, many women have to work even harder than normal in order to cope with AIDS in the family.

Women are also especially vulnerable to AIDS because they may have limited ability to protect themselves from HIV infection. If a woman’s husband dies, she may be forced to sell sex if she cannot maintain herself and her children on the farm or with other occupations. A woman may be at risk of getting HIV even though she is faithful to her husband, because her husband has outside sexual partners. She may have little or no control over her husband’s actions and no ability to protect herself by having her husband use condoms. [Baryoh, 1994] AIDS can have a very serious impact on the lives of women when it strikes a family member. In many cases, women do not have a secure occupation that can provide a steady and adequate income. Thus, if the husband dies, the surviving wife and children can be particularly vulnerable. Some women may be exploited or may have to resort to selling sex to provide cash income.

A woman may also have reduced ability to be a provider for the family if she needs to spend a significant portion of her time caring for family members who are sick with AIDS. It may reduce the time she has for productive work as well as affect the amount of time she can spend caring for children. Since other tasks, such as food preparation, must still be done, many women have to work even harder than normal to cope with AIDS in the family.

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 sexually transmitted diseases, the presence of which greatly enhances the risk of HIV infection. STDs that bring on recognizable symptoms in men are often asymptomatic in women and, therefore, remain untreated.
Women can be especially vulnerable to the HIV/AIDS epidemic

- Economic vulnerability is greater if the husband dies
- Burden of care in AIDS-affected households falls on women and girl children
- Subordinate position to men can make it difficult to protect selves against HIV
AIDS Orphans

One of the worst impacts of AIDS deaths to young adults is an increase in the number of orphans. Some children will lose their father or mother to AIDS and many more will lose both parents. Today we estimated to have about 1 million and this number of AIDS orphans could increase to 980,000 by 2002 and to 2.1 million by 2014.

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 increased burden and stress for the extended family which will try to care for these orphans. Many grandparents will be left to care for young children. Some families will be headed by children as young as 10-12 years old.

- At a national level there will be an increased burden on society to provide services for these children, including orphanages, health care and school fees. Many children will go without adequate health care and schooling which increases the burden on society in future years. There may also be an increase in the number of urban street children with its negative social consequences on the overall development of the nation.
IV. Interventions to Slow the Spread of AIDS

The Effects of Interventions

Preventing Transmission of HIV

Treatments

Mother to Child Transmission

Vaccine Development

The Role of Leaders
The effect of Intervention

Preventing Transmission of HIV

The impact of AIDS will be very severe in Ethiopia if the rate of HIV infection continues as it is today. However, there are several things that can be done to slow the spread of HIV.

Transmission through heterosexual contact

The major mode of transmission is through heterosexual contact and it is in this area that interventions have to be concentrated. Interventions include promoting reductions in the number of sexual partners; encouraging delays in the onset of sexual activity among adolescents; promoting the use and availability of condoms; and strengthening programmes for STD control.

- *Promoting abstinence before marriage and faithfulness to one partner.* One set of interventions focuses on encouraging people to abstain from sex before marriage and remaining faithful to a single partner. This could be done through a combination of mass media, counselling and education programmes. Delays in the onset of sexual activity among adolescents can have a significant impact on the spread of HIV. Reducing the overall number of sexual partners, but especially limiting the number of partners at any one time (concurrent), can also have an effect. Given the extremely high rates of HIV infection among commercial sex workers, a reduction in the number of men who have contact with prostitutes and bar girls can be important in bringing the epidemic under control. Overall, these strategies could make an important contribution to reducing the spread of HIV, although they would not be, by themselves, a complete solution.

- *Promoting the use and availability of condoms, including female condoms.* A second intervention is to promote condom use through mass media, counselling and education and to increase the availability of condoms through expanded public distribution, social marketing programmes and programmes in the workplace. Special initiatives to promote condom use among high-risk populations (such as commercial sex workers and long-distance truck drivers) have proven effective in some cases. Given the vulnerability of women, promoting availability and use of female condoms could help control the spread of the disease. In Ethiopia, two brands of condoms are available through a social marketing program, Hiwot (3 condoms for 30 Ethiopian cents) and Trust (2 condoms for 15 Ethiopian cents).

- *Controlling other sexually transmitted diseases.* Another intervention focuses on controlling the spread of sexually transmitted diseases such as syphilis, gonorrhoea and chancroid. A recent study in Mwanza, Tanzania, for example, found that an STD prevention and treatment programme reduced the number of new HIV infections by 42 percent. Services to detect and control STDs can be critically important for managing the HIV/AIDS epidemic.
Transmission through blood transfusions

To avoid infection through blood transfusion the blood supply needs to be made as safe as possible. This means screening blood through laboratory tests and screening potential blood donors through interviews in order to reject as donors those that have a high probability of being infected. The number of blood transfusions can also be reduced by eliminating all unnecessary transfusions.

This scheme demonstrates possible areas of interventions to break the mechanism of transmission.

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**HIV Transmission Mechanisms and possible Interventions**

- **Unsafe medical practices**
  - Transfusion
    - Ensure sterile conditions
    - Test blood supply
    - Screen donors
    - Eliminate unnecessary transfusions
  - Perinatal
    - Counseling, testing, nutrition, family planning, treatment
  - Sexual transmission
    - Maintain faithful partnership
    - Delay onset of sexual activity
    - Use condoms
    - Control STDs

---

Combined interventions
Each of the intervention packages described above can make an important contribution to controlling the spread of HIV. Alone, none is likely to solve the problem completely; some people will respond to one intervention while others will respond to another. The following computer simulations model suggest that a much larger effect can be achieved by implementing all the interventions together in a broader scale. It shows the expected impact of individual as well as combined interventions comparing with no intervention.

The Effects of AIDS Interventions on HIV Prevalence

Based on simulation modeling of typical high prevalence urban areas in East Africa.

The base projection with out intervention is shown at the top line on the graph followed by a line representing an effective blood screening programme which reduces prevalence only modestly. However, an effective STD control programme brings expected prevalence down further and condom promotion and partner reduction interventions reduce HIV prevalence even more. Most importantly, when all four interventions are implemented simultaneously, the projected prevalence will be reduced nearly by half in about five years after the start of our intervention than it would be in the absence of interventions.
Highly active anti-retroviral therapy (HAART) has received much international publicity in recent years. HAART uses combinations of drugs and can inhibit the spread of HIV within a person’s body. For some HIV-infected persons, HAART has been an effective way to prevent the onset of AIDS and prolong life. However, several considerations need to be taken into account when considering HAART in the context of Ethiopia. Most importantly

- Many HIV-infected persons cannot tolerate the side effects of the drugs and only about half of prospective users can tolerate the therapy.
- The drugs have to be taken under the strictest regimen, including time of day and with meals or on an empty stomach. Even small variations from the prescribed pattern can render the treatment ineffective. Patients also need constant access to sophisticated medical laboratories to track CD4 cells and the viral counts in the body.
- Perhaps most importantly, the costs of these treatments are prohibitively high, around $8,000 per patient per year in an actual developing country setting and even more in the industrialized countries. (By contrast, in Ethiopia, the government spends less than U.S.$10 per person per year for all health services.)

The new combination drugs are important in that for the first time a medical treatment has proven effective against HIV. This creates hope for the future. But for the moment, even in the most developed countries, this is a highly expensive experiment with an unknown outcome affecting a minority of HIV-infected individuals. In developing countries, the first experimental programmes are just beginning.

It is possible to treat, for a long time, many of the opportunistic infections that develop because of the weakened immune system. These treatments can improve the quality of life and delay the death of a person with AIDS.

**Mother to Child Transmission**

A mother who is infected with HIV may transmit it to her new-born child 30-40 percent of the time. Various approaches can be used to reduce the number of children who are infected. Among them are:

- Reducing transmission during childbirth. Vaginal cleansing can reduce the transmission rate of HIV from mother to child by as much as two-fifths. It also has other health benefits. Studies are underway to determine whether delivery by Caesarean Section is also beneficial.
- Improving maternal nutrition. There is some evidence that improving maternal nutrition, particularly with Vitamin A supplementation, may reduce the transmission rate.
- Reducing transmission through breastfeeding. Perhaps, one-third of mother-to-child transmission occurs through breastfeeding. Curtailing breastfeeding could reduce transmission of HIV but would also eliminate the significant health benefits that children get from breastfeeding.
- Avoid pregnancy. Women who are HIV-positive may wish to avoid childbearing so that they do not infect their new-born babies or leave behind orphaned children when they die.
Counselling and testing needs to be available for couples where one or both of the partners is infected to help them understand the HIV test and the choices facing them.

Anti-retroviral therapy. Mother-to-child transmission can be reduced by ART. AZT treatment for the mother in the period just before and during childbirth can reduce transmission rates by 50 percent. However, such treatments may cost 700 Birr per child. A nationwide program would be difficult and expensive to implement since it would require testing and counseling for all pregnant women. The introduction of Nevirapine, a less expensive but equally effective drug at a cost of 4 USD has shed light for a wider prevention program.

Vaccine Development

For many HIV/AIDS researchers and policymakers, the real hope is for a widely available vaccine that can prevent HIV infection in the first place. Research on vaccines continues in many laboratories around the world, with more than two dozen experimental HIV vaccines currently being tested. Most scientists believe that vaccines are not likely to be ready for mass use within the next 5 - 10 years.

In brief, it does not appear that either drugs or vaccines will contribute much to reducing the spread of HIV in Ethiopia in the next several years. However, we are not without hope. The success stories of African countries that demonstrated a down ward turn in HIV prevalence and bring the Epidemic under control can also be a reality for our country too.

Overall, there are five important lessons to be learned concerning interventions.

- Pilot tests have shown that interventions of several kind can be successful in significantly reducing the spread of HIV.

- Applying interventions on a nationwide scale is costly and success is difficult to measure. Nonetheless, there is now evidence from Uganda and Thailand that significant reductions in HIV prevalence can occur at a national level. Both countries recognised the seriousness of the epidemic early and implemented strong national programmes to reduce the spread of HIV and to provide support for people with AIDS and their families.

- It is important to intervene in many different ways to reach the largest possible number of people and have the maximum impact.

- The most effective interventions are those that focus on population groups that have more than one sexual partners. This is true at all stages of the epidemic.

The Role of Leaders
Governmental, non-governmental, religious, business, education and other regional leaders can be involved in the planning and implementation of HIV/AIDS prevention programmes.

**What, for example, could a political leader do now to help control the spread of HIV in Ethiopia?**

*Share or “diffuse” knowledge about HIV/AIDS among constituents, especially information about transmission, fatal consequences and ways to prevent infection*

*Engage in policy dialogue to ensure that the epidemic remains high on the regional agenda*

*Participate in the implementation process of the national as well as regional strategic planning*

*Support the HIV/AIDS programmes of NGOs and sectoral ministries*

*Use influence of position to oppose discrimination against HIV-infected persons*

*In his/her political capacity, support appropriate intervention measures.*

AIDS is much more than just a health problem; rather, it affects all areas of society and all components of the development effort. It is therefore important that all government sectors,
NGOs, private sector organizations, religious institutions, unions, professional societies and others make their contributions in both planning and implementation of HIV/AIDS prevention programs.

In their administrative, legislative and leadership roles, leaders in different areas can take measures to support appropriate intervention measures.

**What, for example, could a religious/NGO/community leader do now to help control the spread of HIV in their community?**

*Integrate messages and information about prevention, care and support into ongoing activities, such as youth and adult education*

*Identify and serve as an advocate for vulnerable groups, for example young women and orphaned children subject to sexual exploitation or abuse*

*Develop IEC messages and programmes that stress the importance of family and moral values in stopping the spread of HIV, for example remaining faithful to one partner or encouraging delays in the onset of adolescent sexual activity*

*Participate in care and support programmes for HIV-infected people*

*Participate in strategic planning activities at regional level*

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### V. Policy and Strategic Planning
The National Policy on HIV/AIDS

The National AIDS Council

Regional multi-sectoral response

Federal and Regional HIV/AIDS Strategic Plans

What Needs to be Done
The National Policy on HIV/AIDS

In 1985 the government of Ethiopia, realizing the enormous implication of human suffering, social effects and costs of health services, established a National Task Force for the prevention and control of HIV infection. In 1987 the National AIDS Control Programme was created at the Departmental level within the Ministry of Health as a responsible body for directing and coordinating the implementation of the AIDS Control Programme.

In collaboration with experts from GPA/WHO and the Ministry of Health, short and medium term plans were developed in March and May of 1987 respectively. The first Medium Term Plan (MTP-I) focused on public awareness, establishment of laboratory services, surveillance of HIV and training of health workers.

The Second Medium Term Plan (1992-1996), MTP-II, was designed in December 1991, based on experience gained from the implementation of MTP-I. The major emphasis in MTP-II is on interventions to stop the spread of HIV. It adopted a multi-sectoral approach to mobilize a widespread effort against AIDS through decentralization of AIDS/STD prevention and control activities.

The HIV/AIDS Unit in the Ministry of Health is continuing the effort and coordinates the national and regional activities in collaboration with UNAIDS and other agencies.

In addition to the activities of the Ministry of Health, other ministries are also contributing to the AIDS Control Programme, primarily through education and dissemination activities. Also, many non-governmental organizations (NGOs), churches and other organizations are providing programs for AIDS prevention and care. These efforts include condom promotion and distribution, counseling, peer education and care of AIDS patients.

The government of Ethiopia, besides producing and implementing several guidelines, including sentinel surveillance and counseling, launched a national policy on HIV/AIDS in 1998. The policy is designed to guide the implementation of successful programmes to prevent the spread of HIV and AIDS, to care for those with AIDS and to reduce the adverse socio-economic consequences of the epidemic.

The policy calls for information, education and communications programs to inform the population about the risks of HIV infection and to encourage people to adopt protective behaviours. The programme will be implemented through all possible media. The Ministry of Health will take the lead in providing materials, guidance and support to these efforts, but the community at large must assume the responsibility for carrying out the program through mass organizations, professional associations, government ministries and organizations, non-governmental organizations including religious groups and informal community organizations. Information should be provided to the entire population, with emphasis on particular target groups, including high risk groups such as prostitutes, truck drivers and military personnel. Special efforts should be made to inform youth, as they usually experience the largest burden of new infections.
Persons with HIV and AIDS should also be involved through education, counseling and peer group discussions to help themselves live with HIV/AIDS and to communicate to the community the dangers of risky behaviours.

The priority prevention and control measures called for in the policy include:

- Encourage people to maintain faithful sexual relationships with one partner.
- Promote the use of condoms in situations where there may be the risk of HIV transmission.
- Minimize other unsafe practices such as: illegal injections, harmful traditional procedures, drug addiction.
- Ensure safe medical practices to protect against HIV transmission from patient to patient and from patients to health care providers.
- Ensure the human rights of people with AIDS.

The policy also calls for blood testing for HIV to screen blood before transfusion and for sentinel surveillance to monitor the course of the epidemic. Measures to provide support to people with AIDS and their families are encouraged through a number of approaches. Special efforts should be made to ensure that women have access to health services, particularly family planning, counseling and other psychosocial support so that they can make personal decisions about childbearing. The human rights of people with AIDS shall be respected. They shall not be subject to special restrictions on employment, education, access to public facilities or housing.

Todate the government of Ethiopia established a national council and secreatriate and two regional council and secreatriate to inensify and coordinate multi-sectoral responce to the epidemic.
What Needs To Be Done next

- Strengthen the multi-sectoral approach to AIDS interventions. It is clear that AIDS is not just a health problem. It will affect all areas of society. It will affect individuals, families, villages, towns, economic growth and social development. Therefore, it is important that all sectors of society be involved in solutions to this problems. The participation of all sectors of society is needed, including government, NGOs, private sector organizations, religious groups, unions, professional organizations, etc.
- Increase the allocation of government funds to sustain the AIDS/STD prevention and control programme.
- Incorporate family life education into school curricula in order to inform young children about how they can protect themselves from AIDS.
- Provide informal education to out-of-school youth.
- Develop effective coordination of the AIDS prevention and care efforts of the different organizations and individuals involved.
- Improve the capacity of staff in the AIDS control programme at both the national and regional levels.
- Implement the National Policy on HIV/AIDS.
- Increase the political commitment of the leaders. Experience from other countries and programmes that strong support from top leaders is key to a successful program.
- Strengthening the national council and secretariate
- Establishing and strengthening the regional council and secretariate
VI. Frequently Asked Questions

Since the first edition of this booklet was published in 1996 there have been many presentations based on the booklet given to audiences throughout Ethiopia. Several thousand people have participated in these presentations and asked many questions. Some questions have been asked more often than others. The most frequently asked questions are listed below, along with brief responses.

1. **How and where did AIDS originate?**
   No one knows how AIDS originated or where. It may be that HIV has been around for a long time, infecting only a few people, and only recently started to spread so quickly and became so deadly. The fact is that AIDS is here and it matters little where it originated. Some research on this issue continues, but most scientific efforts are concentrating on finding ways to prevent and treat the disease.

2. **Why is Africa, of all the regions in the world, the most hard hit?**
   The World Health Organization estimates that 70 percent of all AIDS cases have occurred in Africa. A large number of cases have also occurred in the United States and Europe. HIV is now increasing rapidly in Asia. It is expected that within a few years there will be more HIV infections in Asia than anywhere else in the world. Currently, Africa certainly has a higher proportion of its population infected than any other region of the world. This may be due to several factors including (1) poverty, (2) the high prevalence of other sexually transmitted diseases, (3) patterns of worker migration, (4) military conflicts, (5) cultural practices and beliefs, (6) relatively low health status in the population and (7) other factors. Epidemiological studies are needed to define the relative importance of these and other factors.

3. **Why is HIV worse in some parts of Ethiopia than in others, although no region in the country is free from HIV?**
   It may be that infection rates are higher in some parts of Ethiopia than in others because the infection spread to those areas earlier on in the epidemic. Other factors may also be contributing, such as a higher density of population, more movement of people due to trading and migration routes, and cultural beliefs and practices. All parts may eventually have similar rates of infection if urgent steps are not taken to intensify information, education and communication efforts.

4. **Are scientists succeeding in getting a cure for AIDS?**
   Scientists have learned much about HIV and AIDS in the years since the epidemic started. They are pursuing approaches to find vaccines to prevent HIV transmission and drugs that can prevent HIV infection from developing into AIDS. Some drugs, such as AZT, are already in use, but they can, at best, extend the life of an AIDS patient for a few months, but not cure the disease. Several vaccines are in line for testing in the near future. However, the process of developing and testing drugs and vaccines is a long one. No one expects an effective vaccine to be available within the next ten years. Therefore, efforts to prevent the spread of HIV through education are very important for now.
5. **It is said that the most important mechanisms for transmitting the virus are heterosexual intercourse, perinatal transmission and blood transfusions. How important are other means of transmitting the virus, such as circumcision, homosexuality, sharing shaving instruments, dental instruments, mosquitoes, kissing, etc.?**

HIV can be transmitted by any means that involves contact of blood from an infected person with the blood of an uninfected person. Therefore, it can be transmitted through unsafe practices such as sharing circumcision knives, shaving tools or dental tools without properly sterilizing them. However, there are very few confirmed cases of transmission through these mechanisms. Although low levels of HIV have been found in saliva there is no evidence that HIV has ever been transmitted through kissing. Although mosquitoes may transmit small amounts of blood from one person to the next, the amount of blood is very small and insects do not normally travel from one person to another immediately after ingesting blood. There is no evidence of HIV transmission through mosquitoes, even in areas where there are large numbers of HIV-infected people and large numbers of mosquitoes.

6. **Why do some people (e.g. some prostitutes) escape HIV infection despite constant exposure and lack of protection?**

Scientists do not know why some people seem to remain free of infection even though they are apparently exposed repeatedly to HIV. This issue is being studied intensively in hopes that it will lead to advances in HIV prevention or cure. However, it appears that only a small portion of the population has this immunity and there is no way of knowing who is immune and who is not yet. Therefore, all people should take precautions to protect themselves.

7. **Why do some HIV-positive mothers transmit the virus to their new born children while others do not?**

Scientists do not know exactly why some mothers transmit the virus to their babies and others do not. Many factors may be involved, such as the type the delivery, the amount of blood involved, the nutritional status of the mother, the length of time the mother has been infected and whether the mother breastfeeds the baby. Research is continuing to try to understand this transmission mechanism so that prevention approaches can be developed.

8. **Why can’t the government test everybody for HIV infection?**

There are several reasons why it is not sensible to test everyone for HIV infection. Firstly, the cost would be very large, several times as much as what the government currently spends for all health services. Secondly, the HIV test is not 100 percent accurate. Even if only one percent of people were incorrectly identified as having HIV that would amount to a quarter of a million people who would falsely be identified as being infected. Thirdly, it would be unethical to test people for HIV infection without asking their permission or providing them with counseling to help them cope with a positive test result or understand how to remain infection free if they are currently not infected. There are not enough trained counselors or funds to mount such a massive effort.
9. *Why not quarantine those who are infected with HIV?*

There are several reasons why quarantine is not an effective measure for the control of HIV infection. First, most people who are infected do not know it, so it would be impossible to quarantine everyone who is infected. Second, there are an estimated 2,600,000 infected people in Ethiopia today. How could so many people be quarantined? Third, there are other ways to prevent HIV transmission that do not require quarantine (partners remaining faithful to each other, use of condoms, treatment of sexually transmitted diseases). Forthly, establishing a policy of quarantine would cause people to hide their HIV status. People would not want to be tested and, if they knew they were infected, they would not want to tell anyone. Most people would act as if they were not infected, to avoid quarantine. This behaviour would contribute to a worsening epidemic. Finally, respecting the human rights of infected individuals is important in its own right and is essential to implementing effective HIV control programmes.

10. *Despite education campaigns and increased condom use, HIV is still increasing. Why aren’t these programmes effective?*

The AIDS prevention programmes that have been implemented have had an effect in reducing the severity of the epidemic. Many people have changed their behaviour to stick with one faithful partner. Many others have adopted condom use. Though programs have had an effect, unfortunately, they have not been widespread. So the number of infected people is still increasing. Only a much expanded prevention programme, with participation from all sectors (government, NGO, private sector, religious groups, churches, professional organizations, community groups) will be successful in reducing the number of infected people in the future.
VII. Sources


For additional information on how you can help or for more information about this booklet please contact:

AIDS and STDs Control Team  
Diseases Prevention and Control Department  
Ministry of Health  
P.O. Box 1234, Addis Ababa  
Telephone: 15-99-88 / 50-38-35