

**LESSON 15**

**NON-**

**VECTORED**

**INFECTIOUS**

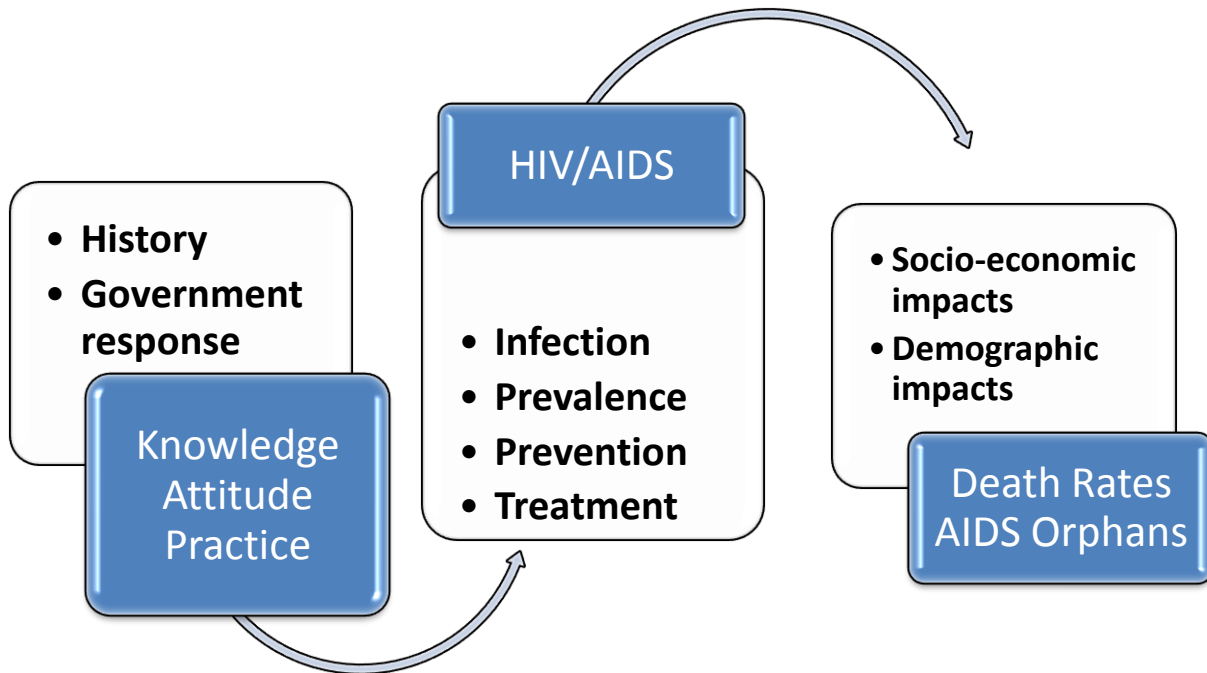
**HIV/AIDS**

**Aynalem Adugna, July 2014**

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# Learning Objectives



# Non Vecteded Infectious

## HIV/AIDS

### Introduction

The first documented report of an AIDS case in Ethiopia comes from a 1986 record [1]. Another source gave a date of 1984 [2]. The series of localized HIV epidemics have since evolved into a generalized epidemic and AIDS has become the leading cause of morbidity and mortality among adults. Ethiopia has just over 1 % of the world's population but contributes 7 % to the world's HIV/AIDS case total [2]. In terms of the number of people infected, it ranks fifth after South Africa, Nigeria, Kenya and Zimbabwe, and second (after Nigeria) in terms of the number of children orphaned by the AIDS epidemic. More than 90% of the infections in Ethiopia take place among those aged 15 to 49 – the most economically productive segment of the population. “Higher death rates in this particular age group also increases the dependency ratio because a smaller number of young adults will have to support large numbers of children and the elderly” [2]. HIV/AIDS has also emerged as a growing cause of childhood illnesses and death.

Although HIV/AIDS has been around for more than two decades, not much is known on a national level about actual numbers and classifications of victims, spatial aspects of how it spread to various parts of Ethiopia, future trends, and socio-economic impacts.

Although among the largest countries in Africa, few published data are available that describe Ethiopia's epidemic on a national scale. The main source for HIV surveillance trend data in Ethiopia is the antenatal clinic (ANC) based HIV sentinel surveillance system, which was established in 1989. It relies on unlinked anonymous testing of left-over blood in selected (sentinel) ANC sites, following World Health Organization (WHO)/Joint United Nations Programme on AIDS (UNAIDS) guidelines.<sup>2</sup> Other sources of surveillance data include case reporting (AIDS, sexually transmitted diseases), and infrequent surveys of the general population or high risk groups. We present here trend data on selected HIV/AIDS indicators and consider the current and possible future course of the HIV epidemic in Ethiopia. [1]

The prevalence rate for 2004 was estimated at 13.2% for urban areas and 2.3% for rural Ethiopia - national average of 3.7 percent. [2] However, a great disparity was noted in the urban prevalence rates in 2004:

Addis Ababa has a current prevalence rate estimate of 15.6 percent. Among the urban sites surveyed, Bahir Dar in Amhara has the highest HIV prevalence rate of 23.4 percent, followed by Jijiga in Somali (19 percent), and Nazareth in Oromia (18.7 percent). Based on the sentinel surveillance data, pregnant women in the 15-24 years age group have the highest average HIV prevalence (12.1 percent), representing recent infections. In terms of absolute numbers for both males and females, the largest number of HIVinfected persons are in the 20 to 29 years age group. [2]

On the plus side awareness of the HIV/AIDS illness has increased dramatically although it remains low among a large segment of the population [2]. More than four in five women and nine in ten men have heard of HIV/AIDS largely due to the government's educational efforts. Still, "it is striking that young women are less likely to know about HIV, although according to the latest data they are the ones most exposed to new infections" [2]. Moreover, while knowledge of HIV/AIDS is high, overall knowledge of sexually transmitted diseases (STI) is low.

About 25 percent of women and 14 percent of men did not know of any male STI symptoms. A similar pattern is observed in the case of STI detection for females with 27 percent of women and 41 percent of men having no knowledge of any female symptom. Lack of knowledge of STIs is especially high among the 15-19 year old age group (54.3 percent for women and 43.5 percent for men), those who have never married (50.5 percent for women and 33.6 percent for men), never had intercourse (52.3 percent for women and 41.4 percent for men), among rural residents (41 percent of females and 21.6 percent for males). Among regions, lack of STI knowledge was highest in Afar and Gambella (over 60 percent) compared to Addis (14 percent) and Dire Dawa (16.7 percent). Among men who have had intercourse, about 3 percent had reported that they had an STI or had experienced physical symptoms. Of the men who had an STI or associated symptoms, only half sought medical advice or treatment. It is worrisome that 54 percent of these men did not inform their partner while 58 percent did not take any action to protect their partner (DHS 2000). [2]

Highlighting the HIV/AIDS problems through 2010, a United States Intelligence Community Assessment (USICA), identified five countries with strategic importance to the US as having very large populations at risk: Nigeria, Ethiopia, Russia, India and China. The five were selected because they are [3]:

- Among the most populous countries, together representing over 40 percent of the world population.
- In the early-to-mid-stages of an HIV/AIDS epidemic.
- Led by governments that have not yet given the issue the sustained high priority necessary to stem the tide of the disease.

The generally poor health of Ethiopians as a result of drought, malnutrition, limited healthcare, and other infectious diseases has caused HIV to progress rapidly to AIDS. Heterosexual transmission is the primary mode of spread, and people with multiple partners—especially those with sexually transmitted diseases (STDs) and prostitutes—have significantly higher infection rates, ranging from 30 to 40 percent in STD-positive individuals to 50 to 70 percent in prostitutes. Unlike conditions in other next-wave countries, war has significantly contributed to the spread of the disease in Ethiopia. Many soldiers contracted HIV/AIDS during the civil war in the 1980s by having contact with multiple sex partners. When the war ended in 1991, thousands of infected soldiers and prostitutes returned home, spreading HIV/AIDS in their villages and towns. [3]

It was feared that a second wave of infections may have taken place in 2000 following the demobilization of 150,000 soldiers following the border conflict with Eritrea. As soldiers demobilize, their client prostitutes - who have even higher rates of infection - disperse around the country acting as mini focal points of transmission. Due to the high rate of adult prevalence, widespread poverty, low educational levels, limited capacity to respond more actively and effectively, it is expected that many more Ethiopians will probably be infected by the year 2010 [3].

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Children are affected directly by the viral infection, and indirectly through the loss of parents to AIDS. The disease has raised infant mortality rates in Ethiopia by 7 % between 1995 and 2000 reversing years of progress in child survival. Young adults (people in their teens and 20's) represent by far the most impacted segment of the population [4]. Most HIV infections in Ethiopia occur among young people in their teens and 20s, and young women are particularly vulnerable. The number of HIV-positive women in the 15- to 19-year-old age group is much higher than the number of HIV-positive men in the same age group. This is due to earlier initiation of sexual activity by women and the fact that their older partners often have more than one sexual partner [4].

The combined impact on the life table survival probabilities of Ethiopian infants, children, and young adults has altered the trajectory of life expectancy away from a slight increase year over year to a sustained decline. The United States Bureau of the Census projected life expectancy in Ethiopia to decrease to about 42 years in 2010 due to the disease. According to the bureau's estimates, life expectancy would be as high as 55 years in the absence of HIV/AIDS [4].

HIV prevention and control efforts by the Ministry of Health - MOH - began in earnest in September 1987. All of the activities since then were directed by a central MOH office and were initially focused primarily on the population in Addis Ababa even though 85 percent of the population lived in rural areas. Six years later, all HIV/AIDS/ STI prevention and control efforts and activities were decentralized with responsibilities reassigned to the regional health bureaus and "an AIDS/sexually transmitted disease (STD) control team within the MOH provides technical assistance to regional offices, and coordinates activities and policies from a national perspective" [4]. Additional reorganization has taken place since:

"Ethiopia adopted a comprehensive HIV/AIDS policy in 1998 to emphasize prevention, care, and support, and target vulnerable groups. The plan has been updated for the 2000–2004 period through the Strategic Framework for the National Response to HIV/AIDS. The overall goals of the policy and framework are to reduce HIV transmission; reduce associated morbidity and mortality; and reduce burdens on individuals, families, and society at large. The National AIDS Council, established in April 2000, includes government members, nongovernmental organizations (NGOs), and religious bodies. The Council has seven standing committees and implements national policy through 10 general strategies, the most important of which include:

- Information, education, and communication activities;
- STD prevention and control;
- HIV testing and screening;
- Adoption of proper sterilization and disinfection procedures;
- HIV surveillance, notification, and reporting; and
- Provision of medical care and psychosocial support to those affected by HIV/AIDS." [4]

The second largest city in Oromia - Nazareth – remains the epicenter of the HIV/AIDS epidemics in Ethiopia. It is a hub on "... Africa's so-called 'high corridor of HIV', where commercial desperation combines lethally with a lack of basic healthcare". [5]

Prostitutes and their clients, as well as needy farm and factory workers, flock to [Oromiya's] second city in search of survival. But too often, what they find instead is one of the most concentrated and relentless Aids

epidemics in the region.... Women who move to the city from tiny farming villages find themselves forced to compete with men for arduous work as labourers. ...Far more frequently, though, they are dragged into what the United Nations and aid workers coyly describe as 'commercial sex work'. They find a regular clientele among the factory workers or truck drivers stopping en route to or from the capital, or the port of Djibouti....Nazareth is also home to at least 100,000 refugees, mainly from Sudan, Eritrea and Somalia. The city's hot springs and the nearby spa town of Sodere indicate that not everything here runs dry – and attract a steady stream of tourists. [5]

Poverty and cultural taboos have compounded the problem [6]. Fear of stigma discouraged testing and possible prevention of transmission between individuals including transmission from mothers to new born infants. Approximately 80 infants are born to HIV infected mothers daily and "... the Ministry of Health estimates that 750,000 children are without parents because of AIDS' [6]. Approximately 30,000 babies were born with HIV in 2006 [7].

Society frowns upon and deeply shuns people living with HIV. It is widely reported that landlords have been taken to court in the capital Addis Ababa accused of evicting tenants with HIV-positive status. Moreover, "poor mothers often breast-feed their children, thus transmitting the disease, because they can't afford bottled milk or are ashamed to acknowledge their illness" [6]. There are indications, however, that things are changing for the better. Government efforts to disseminate knowledge about the disease are seeping ever so slowly into the general public's consciousness and effective public awareness campaigns are having an impact. For instance, "every high school has an HIV-prevention club, run by HIV-positive youth. Buses and billboards have life-size posters of masculine-looking music stars holding condoms". [6]

A 2006 study on pediatric HIV/AIDS in Ethiopia by the Federal Ministry of Health and Columbia University (the first of its kind) revealed that "...the care and treatment of HIV-exposed and HIV-infected infants and children posed serious challenges to Ethiopian policy makers, program managers, and clinicians. The study had the following summary findings regarding the HIV/AIDS issues specific to children [7]:

- "Good political commitment for pediatric care and treatment, but lack of a national pediatric road map, a pediatric coordinating body, national training, or pediatric HIV/AIDS guidelines;
- Lack of providers trained in pediatric care and treatment;
- Low antenatal care (ANC) uptake, with only 28% of women attending at least one ANC visit and less than 10% delivering in a health care facility;
- Low uptake of prevention of mother-to-child transmission of HIV (pMTCT) services—of women offered pMTCT services, only 43% take them;
- Weak linkages between maternal and pediatric care;
- No national system to track HIV-exposed infants or link them to care;
- No access to early infant HIV diagnosis services in the public sector;
- Only a handful of infants and children enrolled in care and treatment." [7]

The United States government and the United Nations have provided financial resources and technical expertise to help lessen the impacts of the HIV/AIDS crisis. The latter is helping build the planning capacity to combat the disease on all fronts by aiding and participating in overall development planning:

“The response to the AIDS epidemic remains a priority issue on Ethiopia’s development agenda. HIV is one of the components of the national Plan for Accelerated Development to End Poverty (Ethiopia’s Poverty Reduction Strategy Paper). The strategic approach to the national response as described in the national Plan for Accelerated Development was informed by the Strategic Plan for Intensifying Multisectoral HIV/AIDS Response, 2004 – 2008. Based on these two plans, the national response to AIDS is built around six strategic issues: capacity-building; community mobilization and empowerment; integration with health programmes; leadership and mainstreaming; coordination and networking; and targeted response.” [8]

These targets draw upon the overall goal of attaining universal access to HIV prevention, treatment, care and support, and other essential services, in the not too distant future. In the last two years, commendable leadership on the part of the Ministry of Health has resulted in visible improvements in the response to AIDS. The availability of voluntary counseling and testing and antiretroviral therapy has been on the rise in all eleven regions of the country.

The main areas of UN support included:

- leadership and coordination;
- strengthening the capacity of the public sector and civil society at all levels to plan, manage and implement AIDS responses;
- social mobilization and community empowerment;
- target setting and scaling up of HIV prevention, treatment, care and support towards universal access;
- advocacy, technical assistance and institutional and technical capacity-building.

## **Incidence and Prevalence Rates: Latest Estimates**

The latest estimate on HIV/AIDS in Ethiopia comes from the country’s 6<sup>th</sup> annual report on the disease by the National HIV/AIDS Prevention and Control Office of the Ministry of Health [9]. An adjusted estimate based on the testing of “unlinked left over blood” from a national syphilis prevalence survey gave an overall prevalence rate of 3.5 percent; 3 percent for men and 4 percent among women. The urban prevalence rate was estimated to be 10.5 percent (9.1% among males and 11.9 percent among females). The prevalence rate seems to have stabilized in urban areas in between 1996 and 2000 [9]. The incidence rate (new infections) has also stabilized, and was estimated at 0.26 percent in 2005.

“In 2005, it was estimated that a total of 1,320,000 people were living with HIV/AIDS. Of the total, 634,000 were living in rural areas and 686,000 in urban areas. In the age group 5-29 years, there were more women living with HIV/AIDS than men; in the age group 30+ years, there were more men living with HIV/AIDS than women.

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It was estimated that in 2005, a total of 137,500 new AIDS cases, 128,900 new HIV infections (353 a day) including 30,300 HIV positive births, and 134,500 (368 a day) AIDS deaths (including 20,900 in children [ $<15$  years]) occurred. In 2005, it was estimated that there were a total of 744,100 AIDS orphans ages 0-17; 529,800 were maternal, 464,500 paternal, and 250,200 dual orphans. HIV/AIDS accounted for 32% of the estimated 141,000 of TB cases in 2005. The estimated total number of persons requiring ART in 2005 was 277,800 (including 43,100 children). AIDS accounted for an estimated 34% of all young adult deaths 15-49 in Ethiopia and 66.3% of all young adult deaths 15-49 in urban Ethiopia". [9]

Encouraging results have been recorded in the areas of public awareness of, and education about, HIV/AIDS. Progress has also been made in the quality and availability of data. Studies such as the 2005 Demographic and Health Survey (DHS) and Behavioral Surveillance Survey (BSS) have reported a high level of awareness of the disease, a decrease in the incidence of premarital sex and promiscuity, an increase in condom use, and an increase in willingness to be tested for HIV among males (data on females was not available). Much remains to be accomplished, however, as urban HIV prevalence is still in double digits with only 5% of the population ever tested and only 13% of those needing anti-retroviral therapy (ART) actually receiving it. Moreover, only 0.8% of mother-to-infant transmissions were averted. [9]

The trend in HIV rates is also one of a slow decrease rather than an increase. A total of 25 urban surveillance sites had data on HIV prevalence for 2002, 2003, and 2005. Of these, 15 recorded a decline in rates with 12 registering a significant decline ( $p<0.05$ ). "The HIV prevalence in the remaining 9 of the 10 urban sites showed statistically non-significant increases and no change was observed in one site" [9].

Only seven rural sites had surveillance data for 2002, 2003 and 2005 with three sites registering a decline (but only two- Dangla and Haik - showed a statistically significant decline). "The remaining 4 rural site showed increasing HIV prevalence trends. However, the increase was statistically significant in only one site -Attat" [9].

Available studies also allow the calculation of incidence rates (new HIV cases). "Based on these estimates, there were a total of 137,499 new AIDS cases in 2005" [9]. It is also reported that the number of new AIDS cases in urban Ethiopia peaked in 2003/04 with a sustained decline since then. A one-year lag was noted for rural Ethiopia in stabilization of rates, with a sustained decline set to begin in 2006.

## **Age and Gender Composition of HIV/AIDS Patients**

There are more HIV positive females in the 20 – 24 age group (approximately 150,000 in 2005) than in any other age or gender group. For males, however, the highest number is in the 30 – 34 age group [9]. The second highest number of HIV positive females was in the 25 – 29 age group, and, not surprisingly, declines with increasing age as does the overall population of females and males by age. The high number of HIV positive females in the teenage group of 15 – 19 is the



consequence of early marriage and traditional acceptance of intercourse between young females and older males. There are approximately three times as many HIV positive females in the 15 – 19 age group than males, indicating that most females in this age group were infected by males other than those in their own age group [9].

## **THE IMPACT OF AIDS**

No systematic national studies have been carried out to document the socio-economic impacts of HIV/AIDS in Ethiopia. However, isolated reports and anecdotal evidence suggest a heavy burden on caregivers especially women and on society in general. A 2003 study by the Ministry of Education reported a 5 percent increase in death among teachers, some of which might be due to AIDS. [10]. Absenteeism attributable HIV/AIDS was estimated at about a week per semester among a third of the teachers due to illness or due to illness of a family member. School dropout rates also climbed, due most likely, to death of parents with orphaned children repeating grades at higher rates than non-orphaned children. Overall education costs are on the rise due to the replacement of teachers "...and premature payment for terminal benefits" [10]. Other data sources include a 2003 study by the Ministry of Labor and Social Affairs which showed that "... AIDS orphans unable to sustain their own livelihood are expelled from their parental residences following the deaths of their parents"[10].

## **Co-infection**

The impacts of HIV/AIDS include co-infection with another disease, TB in particular, through the gradual weakening of the body's immune defenses by the virus. "A report issued in 2003 by the TB & Leprosy Prevention and Control Team of the MOH listed the following major problems attributable to co-infection:

- "Increase in the number of TB patients
- Low cure rate of TB patients,
- High mortality during treatment,
- High rate of adverse drug reactions leading to a high number of defaulters,
- High rate of TB recurrence, and
- Increase of TB drug resistance." [10]

## **Socio-economic impacts**

More study results have also been published in the wake the research done the Employers Federation of Ethiopia in 2002. These showed the impact of HIV/AIDS to be most pronounced in the wholesale and retail trade sectors followed by the manufacturing, agriculture and public service sectors.

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“Reduced productivity, shortages of skilled manpower, increased mortality in the work force, increased absenteeism and rising medical costs were found to be the major effects in the industrial sector.” [10].

In view of the large number of people requiring treatment, care and support both for the infected as well as the affected, the epidemic poses a great threat to the overall development efforts of the country. Moreover the degree of impact could be much higher in Ethiopia than other Sub-Saharan African countries due to the large population size and the level of poverty of the population. [10]

## **Demographic Impacts**

### **Projected Impacts on Population Size**

A graph in the 6<sup>th</sup> HIV/AIDS report [9] shows the impact of AIDS on total the population size in Ethiopia from 2000 to 2008, and the projected impacts up to year 2010. “The cumulative number of AIDS deaths was 1,267,000 by 2005 and is projected to reach 1.9 million by 2010 if present trends continue.” [10]. The graph shows that the population of Ethiopia will continue to grow despite the epidemic due to the built in momentum of growth powered by its youthful age structure and a continued future growth in the population of females in their reproductive ages.

As indicated above HIV/AIDS is not going to bring population growth in Ethiopia to a halt but as can be observed from the graphs in the 6<sup>th</sup> AIDS report [9] it would have had a substantial impact on the future growth of the population in the 15-49 age group thereby affecting the growth rate of the next generation of Ethiopians had it not been for the peaking of the infection rate in 2005 and a sustained decline since. The trend of a rapid rise in rates between 1990 and 2005 [9] symbolized a prospect of significant HIV/AIDS impacts on a generation of young adults and the probable end results that are likely to occur in the absence of effective societal response led by well planned and effective acts of intervention and resource mobilization by the government.

### **Impacts on Life Expectancy**

The above mentioned graph [9] also showed HIV/AIDS as having reduced life expectancy in Ethiopia by as much as 5 years (2004 – 06). The rate of reduction in life expectancy increased from 4.2 years of life lost in 2000 to 5 years of life lost in 2004, 20005, and 2006, but the loss was projected to decline to 2.8 years in 2010. The gradual increase in overall life expectancy since presupposes the continued ebbing of infection rates and a gradual decrease in HIV/AIDS mortality due, in part, to anti retroviral therapies.

## **Government/Society’s Response and External/NGO Assistance**

The following paragraphs are based on information obtained from the federal governments’ 2006 report entitled “Progress towards Implementation of the Declaration of Commitments” in the fight against HIV/AIDS in Ethiopia [10].

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## Prevention

The bulk of the priority work area identified for intervention by the National Strategic Framework (NSF) include Information, Education, Communication (IEC), Behavioral Change and Communication (BCC), condom promotion and distribution, Voluntary Counseling and Testing (VCT), Prevention of Mothers to Child Transmission (PMTCT), control of Sexually Transmitted Infections (STIs), blood safety, universal precaution, legal and human rights related to Person's Living with HIV/AIDS (PLHA), research and surveillance, and care and support. Some of the main activities carried-out during the reporting period included the following:

## Education, Communication, and Behavioral Change

Different agencies have sponsored and presented drama shows, short messages – both electronic and in print media - panel discussions and shared best experiences. These messages were conveyed to the public in different languages both at national and local levels.

In 2002/03 there were 8360 Anti-AIDS Clubs (7600 in primary and junior high school, 360 in high schools and 400 out-of-school). These clubs have been engaged in mass media campaigns, school-based AIDS education and peer education programs, which aim to bring about changes in knowledge and behavior that reduce the risk of HIV exposure and infection. They have also provided home-based care and other edutainment services [10].

Based on encouraging lessons learned and hopeful results from three pilot Weredas, community-level dialogue attended by varied sections of society were conducted in 121 rural and urban Weredas in 9 regions of the country. Measurable changes in behavior and attitude have been observed after these sessions. The topics presented for discussion included:

- Necessity of testing for HIV before marriage
- Abolition of early marriage
- The necessity of care and support for orphans and PLHA
- Elimination of harmful cultural and traditional practices like rape, female genital mutilation and abduction

Additionally,

AIDS Resource Centers are being built in all regions. The Oromia AIDS Resource Center is completed and has started to provide service. An AIDS Resource Center has been established in Addis Ababa with technical and financial support of John Hopkins University. The center offers services such as reading, Internet, printing and distribution of posters, brochures etc. Over 100 users (mostly young people) browse the Internet daily. Youth centers are being built in each region in collaboration with the Ministry of Culture and Sports. A comprehensive strategy for IEC is an essential element in HIV prevention. Ethiopia has a general policy and strategy to promote IEC on HIV/AIDS and a national communication framework has been endorsed in 2002. Reproductive and sexual health

education for young people is addressed in the NSF. There is an on-going attempt to develop a policy to promote reproductive and sexual health education for young people. [10]

Additionally, the NSF and the National HIV/AIDS Communication Frameworks have identified high-risk groups such as youth, mobile populations, sex workers, and refugees, and have targeted them for educational campaigns to change attitudes towards the illness. These did not extend to cross-border migrants and international refugees, however, as the country lacked the strategy or policy to extend to this group the educational services aimed at prevention.

## **Condom Promotion and Distribution**

Significant gains have been made in the supply and distribution of condoms. “DKT is the leading NGO engaged in social marketing of condoms. [It] distributed 41.8 million condoms in 1999, 49.9 million in 2000, and 57.7 million in 2001/02. Recent data indicate the distribution of 67.6 million in 2002/03, 49 million in 2003/04 and 71 million in 2004/05” [10]. The lower figure for 2003/04 was attributed to absence of data on condom distribution in the armed services during the 2003/04 reporting period. Government run health institutions have also played key roles in condom promotion, and have served as important conduits for distribution. A similar role has been played and encouraging results registered by a variety of government agencies in making condoms available at work places thereby shattering social taboos. “Training on condom use was given to 894 persons in 2003/04; while in 2004/05 218 various condom promotion messages were transmitted on TV, radio and other media...”.

## **Voluntary Counseling and Testing (VCT)**

There were 170 voluntary counseling and testing (VCT) centers in the country in 2002/03, but with the addition of 107 new centers in 2003/04 the number grew to 277. Continued growth spurts led to the creation of 248 new ones bringing the total number of VCT centers in the country to 525. In 2005 the number grew to 658. The number of clients also registered dramatic increases from 41,387 clients in 2003/04 to 367,006 in 2005. This was facilitated by the training and graduation of 200 laboratory technicians and counselors under the guidance of HIV/AIDS Prevention and Control Office (HAPCO) in 2002/03. “A further 384 counselors were trained in 2003/04, and 75 [laboratory technicians] and 130 counselors were trained in 2005.” Unfortunately, however, “VCT services are not yet properly linked with care and support programs and much still remains to improve the quality of the service”. More outreach efforts are also needed to expand these urban-based services to the wider population which resides primarily in the rural countryside.

## **Prevention of Mother-to-Child Transmission (PMTCT)**

There were 12 PMTCT centers in the country in 2002/03. The number grew to 37 in 2003/04, and to 72 by 2004/05. A total of 134 health center workers were trained in 2003/04. The number of clients

mothers reached 47,890 in n 2004/05, and grew to 130,230 in 2005. PMTCT activities have been hampered by a number of factors including "... the limited availability of antenatal care and maternal health services, limited access to VCT services which, by and large, are not yet integrated with ANC and PMTCT services, inadequate care and support services for the mother and families living with the virus and difficulty of maintaining alternative infant feeding options". [10]

## **Control of Sexually Transmitted Infections (STI)**

Only 14 percent of adults had access to the STIs prevention services. The service was provided by the existing health delivery facilities of both government and non-government organizations. During 2002/03, the "Guideline for Syndromic Management of STIs" was finalized. The Guideline for Syndromic Management was revised and made ready for printing in 2005 [10]. Adequate training was provided to 597 health workers and drugs procured and distributed to health facilities in subsequent years. "A total of 75,386 cases of STIs got treated in 2004/05 including in private health facilities. In comparison the number of STI patients who were diagnosed, treated and counseled in 2005 amounted to 40,718. The lower number of STI cases could be due to underreporting." [10]

## **Blood Safety**

The Ethiopian Red Cross Society (ERCS) has been entrusted with a task of banking a safe supply of blood. The agency has developed a system of screening in all of its outlets and hospitals that are geared up to provide the service. "During 2002/03, eleven blood banks have been established and strengthened as planned". Moreover, the National Blood Service Strategy was finalized and made operational the same year. Five additional blood banks have been strengthened during 2003/04 and 4 health workers were trained. Two blood banks are being established in 2004/05 with World Bank' support, and the support by the US Government is enabling the building of blood centers in four hospitals, and the strengthening of another four in other hospitals [10]. "Training on blood safety is being given to health workers [but]...the ERCS has not yet incorporated VCT in its services" [10]. Blood screening has now began in earnest with the number of blood units screened for HIV in the last 12 months of 2005 reaching over 27,000.

## **Legal and Human Rights of people living with HIV/AIDS (PLHA)**

No legislative efforts have been made to provide separate laws that protect PLHA against discrimination. "Since 2002/03 the taskforce coordinated by the Ministry of Justice has been reviewing existing laws with a view to preparing legislation against stigma and discrimination related to PLHA. The taskforce was continuing to review existing laws and regulations during 2003/04 [10]. In addition, a series of awareness raising workshops on stigma and discrimination have been conducted at work-places and schools. Community-based organizations (CBO's) also contributed to the effort. Government media played the most significant and far-reaching role in the fight against stigma and discrimination. Religious leaders, community organizers, and PLHA themselves also spoke very strongly against stigma and discrimination. During 2003/04 a total of 198 persons were trained on legal and human rights related to PLHA and another 2050 participated in awareness raising workshops [10].

## Research and Surveillance

“In 2002/03 a number of surveys and periodic sentinel surveillance have been conducted and useful data and information have been generated. The First Round of BSS had been completed and disseminated and data collection for the second round BSS has been completed. The MOH increased the number of urban and rural sentinel sites from 15 to 34 and produced the 4<sup>th</sup> sentinel National Report in October 2002. The findings of the MOH surveillance are still the basis for measuring the status and the trends of the HIV epidemiological situation in the country.” [10]

The fifth report of the Ministry of Health on the 2003 sentinel surveillance findings came out in June 2004. “Other surveillance activities supported by USAID, CDC and other agencies have been undertaken in 2003. NGOs and other actors have also carried out KAP studies”. [10]

## Antiretroviral Treatment (ART)

“Following intensive advocacy campaign from associations of PLHA and other organizations, and in appreciation of the gravity of the problem, the government adopted the policy of ARV drug supply and use in July 2003, paving the way for more initiatives towards facilitating access to free and low cost ARV drugs” [10]. A total of 690 health workers (physicians, nurses, pharmacists and laboratory technicians) were recruited from 58 centers and received training in ART administration in 2003. A total of 22,681 mothers were counseled and 955 mothers and 665 babies received nevirapine (NVP) the same year.

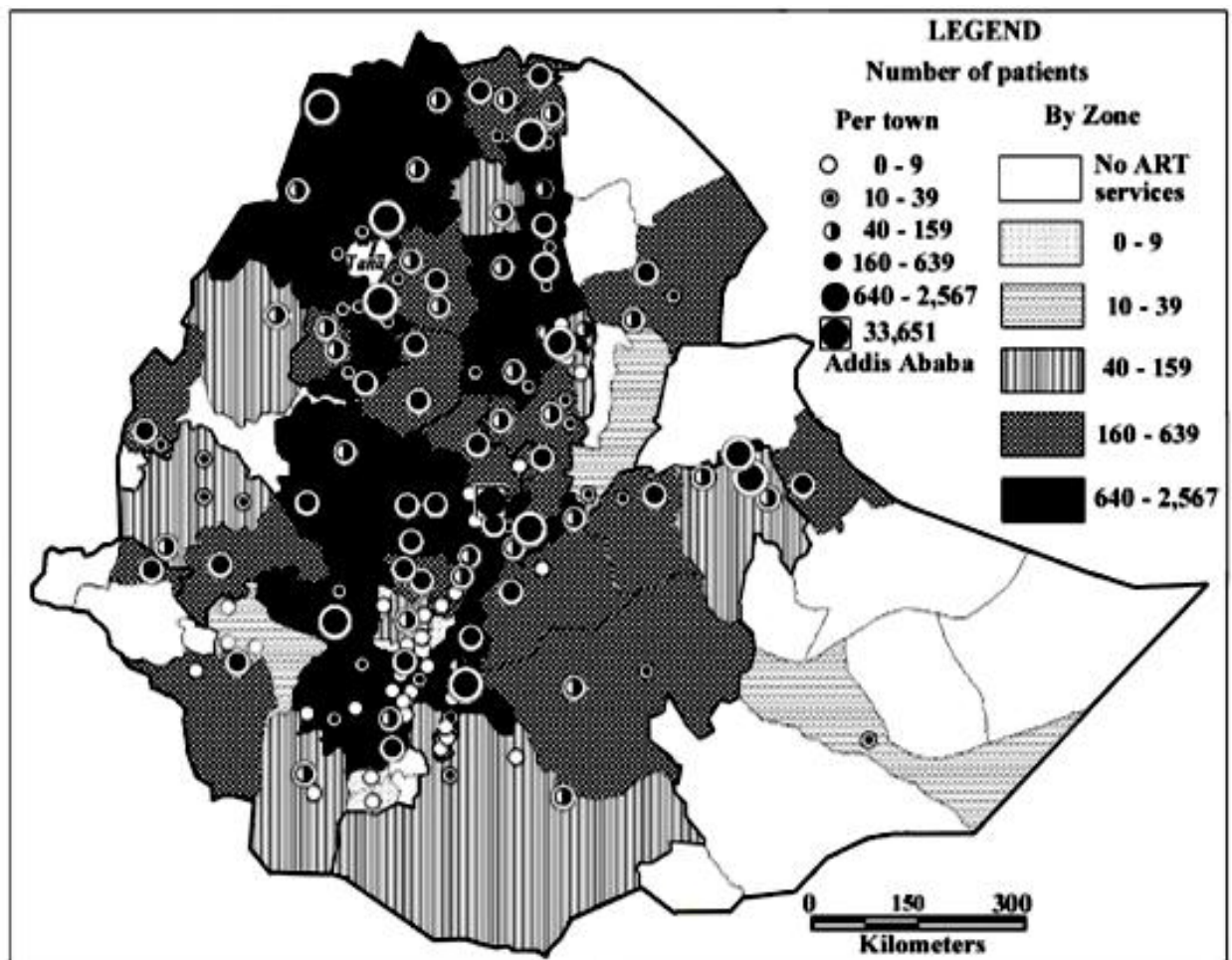
The provision of ART started in 2002/03. The number of PLHA on ART that year was 3000 but grew to 9000 a year later. In 2004/05 11,820 new patients were enrolled bringing the total to 21,220. This was 50% below the annual target of 41,000 new patients on ART by the end of 2005. The target for 2006 was 50,000 new patients on ART.

A total of 45 hospitals were providing a fee based ART services to 13,500 patients “...at a monthly cost ranging between 300 and 700 Birr (about USD 35-82), depending on the regimen used...”. About 2000 patients received free treatment. “In a move to make ARV treatment more accessible, the Ethiopian Government launched the free ARV treatment initiative on 24 January 2005, thus materializing its commitment towards the Global 3 by 5 initiatives that aims at having 3 million people in developing and middle income countries on treatment by end of 2005.” [10]

A recent study by Kloos et. al used monthly MOH data releases to examine the spatial and temporal distribution of ART on a population basis for Ethiopian towns and administrative zones and regions for the period February to December 2006 [11]. This included a total of 44,446 patients treated in 101 public ART hospitals and 1599 treated in 91 ART health centers. The study showed that the “... number of patients currently receiving ART doubled between February and December 2006 and the number of female patients aged 15 years and older surpassed male patients, apparently due to increased awareness and provision of free ART.” [11]. It was observed in this study that, 78.8 percent (46,045 out of 58,405) of patients who ever

started treatment were still adhering to it by December 2006. Coverage was highest in three major urban areas of Harari, Dire Dawa and Addis Ababa. “Hospitals in Addis Ababa had the largest patient loads (on average 850 patients) and those in SNNPR (Southern Nations and Nationalities Peoples Republic) (212 patients)’ and Somali (130 patients) was the regions with the fewest patients. [11]. Statistical testing also showed that the number of patients receiving treatment “...was significantly correlated with population size of towns, urban population per zone, number of hospitals per zone, and duration of ART services in 2006 (all  $p < 0.001$ ).” It has also been noted that “....the stronger relationship with urban than total zonal populations ( $p < 0.001$  versus  $p = 0.014$ ) and the positive correlation between distance from 44 health centers to the nearest ART hospital and patients receiving treatment at these health centers may be due to a combination of differential accessibility of ART sites, patient knowledge and health-seeking behavior.” [11]

### Thee Spatial and Temporal Distribution of ART for Ethiopian Towns, Administrative Zones And Regions (February To December 2006)



Source: [11]

## Knowledge and Behavior Change

A growing number of Ethiopians living with HIV/AIDS are coming out in public to share their experiences, hopes and fears as well as frustrations through electronic and print media and at public gatherings. Three PLHA associations were founded in 2002/03 with nine regional branches and a membership of over 5000 patients. An association was also formed to represent children orphaned by AIDS. Idir (traditional community organizations) have also played a pivotal role in disseminating information and promoting AIDS-related discussions at household and community levels. The effort is showing good results. However, behavioral change has not led to immediate changes in practices and choices made by individuals [10]

“IEC/BCC efforts were not coordinated properly at all levels. The emphasis was mainly on individuals but not on social values and norms. More attention has been paid to urban centers but not on the rural and pastoral areas. It is hoped that IEC efforts will be effectively guided and more coordinated through the implementation of the National Framework for Communication which was developed and put in use during the reporting period.” [10]

## Impact on Mortality Rates

HIV/AIDS in Ethiopia has had visible impacts on society and economy. “Some of the important impact analyses on the present results and extrapolations for future years indicate that: -

- HIV/AIDS accounted for an estimated 38% of all TB case incidences in 2003.
- The population lost to AIDS was about 900,000 by 2003 and is projected to reach 1.8 million by 2008 if present trends continue.
- Adult (15-49 years) deaths due to AIDS are expected to rise tremendously, in the coming years and already account for about a third of all young adult deaths in the country.
- HIV/AIDS on average is expected to reduce Life Expectancy in Ethiopia by 4.6 years in 2003.
- In 2003 alone, it was estimated that 539,000 children lost one or both of their parents due to AIDS.

## AIDS Deaths

An estimated 134,450 AIDS deaths (368 a day) took place in Ethiopia in 2005, of whom 20,929 were children (84% whom were less than 5 years old). More adult AIDS deaths took place in urban areas than in rural areas that year, but the reverse is expected to happen as of year 2006 due to limited availability of ART in rural areas. “ However, AIDS deaths in both rural and



urban areas are expected to decline from 2006 onwards though more pronounced in urban areas. Mainly due to the expanding ART program, the number of AIDS deaths in 2009 is projected to be lower by over 50,000 than that in 2005”.[9].

## AIDS Orphans

“In 2005, it was estimated that there were a total of 4, 885,337 orphans aged 0-17 years. Of these, 744,100 were AIDS orphans. Of the total number of AIDS orphans, 529,777 were maternal, 464,506 paternal, and 250,195 dual orphans.”.

Until 2003 the estimated number of orphans was higher in urban than rural areas, but beginning in 2004, the reverse has been noted. Projections into 2010 suggest a continued increase in the total number of AIDS orphans in Ethiopia (See figure below).

A summary of the recent literature review on HIV/AIDS in Ethiopia by Yemane Berhane et. al. agrees with much of what has been discussed above, and confirms most of the rates and numbers presented. It also came up with the following additional results and indicators [12]:

- There are now over 400 publications on HIV/AIDS in Ethiopia but inability to deal with risk factors at the individual and societal level is hampering clear understanding of the epidemiology of the illness and effective mobilization of available resources to combat it.
- HIV-1 subtype C is the main viral strain in the country.
- The AIDS surveillance systems cover a very small fraction of the population and almost entirely exclude the rural population due to lack of access to health care in the rural countryside.
- At the start of this decade, infection rates among urban antenatal clinic (ANC) attendees tested in 37 urban centers ranged from 2.2% to 24 %, and at 29 rural sites it ranged from 0.5% to 11.9%. Both an increase and a decrease have been noted in various urban centers since then.
- About half a million soldiers – one of the three high-risk groups, the other two being commercial sex workers and truck drivers – were demobilized in the mid 1990’ and reentered their community of origin without testing or supervision.
- No reliable estimates exist regarding the level of mother to child transmission, but is estimated that close to a third (about 40,000 a year) of pregnancies result in such outcomes.
- The gender balance of infected Ethiopians changed from male dominance to female preponderance in the late 1990s thereby exacerbating the problem of infection of newborns.
- HIV-Tuberculosis co-infection are on the rise, with rates as high as 45% noted among adults attending outpatient TB clinics, and 61% among pediatric patients. Other diseases

suffered by AIDS patients in Ethiopia include bacterial pneumonia caused by *Streptococcus pneumoniae*, cryptosporidiosis, strongyloidiasis (both are intestinal infections), candidiasis, herpes, cryptococcal meningitis, and leishmaniasis. Moreover, chronic helminthic infections appear to accelerate the progression of HIV to full-blown AIDS. Although, definitive study results are scarce, preliminary outcomes on the role of malaria suggest a likelihood that the parasites might lead to similar outcomes.

- Comparison of the 1984 census data with morality estimates for the year 2001 suggest that HIV/AIDS may have raised mortality among 35 – 39 year olds by a factor of five between the two dates.
- Widespread and ingrained stigma regarding HIV/AIDS blames victims in manners not reflective of the disease dynamics as to who is infecting whom (for examples more blame is apportioned to females and the poor than males and the rich), and is targeting individuals related to HIV/AIDS such as family members as well.
- Regional migrations and temporary rural-urban, urban-rural, urban-urban, and rural-rural population movements have helped fan the HIV epidemics throughout Ethiopia and contributed to the intensity and geographic reach in every conceivable corner of the country.
- Nationally, the sale of condoms - the most effective of all prevention tools from heterosexual transmission other than abstinence - rose from 700,000 in 1990 to 42 million in 1999, but negative attitudes towards its use still persist.
- Religious leaders have recently come forward with the view to curbing HIV through moral leadership and relaxation of religious proscriptions against preventive methods such as the use of condoms which is often regarded as sinful.
- “Culturally sanctioned gender roles that circumscribe women’s sexual rights in and outside of marriage, and sexual violence (abduction, rape, and domestic violence), casual sex and abortion, and child marriage, render [women and girls] vulnerable to HIV and STD infection...”. To these one can add “...female infibulation, excision and clitoridectomy, ritual scarification, ear piercing, minor surgery and cauterization, and the practice of using non-sterile needles...”. For example, 22 percent of vaccination shots and 38 percent of therapeutic injections involved use of non-sterile equipment in the nation’s public health facilities.
- The role of male circumcision in reducing HIV transmission is unknown but likely to be a significant one.

## A global context

A United Nations report for the year 2007 puts the number of HIV patients around the world at 33.2 million (a reduction of 16% from the 2006 level), of whom 2.5 are children under 15. Two and a half million individuals were newly infected in 2007. A total of 2.1 million adults and 330,000 children under the age of 15 died of AIDS that same year, 76% in Sub-Saharan Africa [13]. The following are some of the salient features of the global HIV/AIDS epidemic in 2007 as put together by UNAIDS and the World Health Organization (WHO) [13]:

- The decline from the 2006 level is in part due to a substantial revision of the numbers in 2006 given by mathematical models used in previous estimations for the countries of India and six others in Sub-Saharan Africa - Angola, Kenya, Mozambique, Nigeria, and Zimbabwe. The revision was necessitated by a better understanding of the epidemiology of HIV/AIDS. The second reason is a real decline in the number of newly infected individuals due in part to reductions in risky behaviors.
- Sub-Saharan Africa remains by far the most severely affected region of the World with AIDS now the primary cause of death. More than two-thirds of adults (68%) and nine in ten children infected by the virus live here. Southern Africa – the epicenter of the HIV/AIDS epidemic – accounted for nearly a third (32%) of new infections in 2007.
- There are now 22.5 million people living with HIV and an estimated 11.4 million orphans in Sub-Saharan Africa.
- Globally, HIV prevalence seems to have leveled off starting around 2001, and actual declines have been noted in a number of countries where aggressive prevention efforts are bearing fruit. Examples include Uganda, Kenya, Côte d'Ivoire, and Zimbabwe in Sub-Saharan Africa, and Cambodia, Myanmar and Thailand in South-East Asia.
- Between 2001 and 2007 the HIV prevalence rate has decreased in Sub-Saharan Africa from very high levels, but increased (rather than decrease) in East Asia, Eastern Europe, and Oceania.
- Globally, 1.6 million more men than women are living with HIV and their proportion out of the total varied from 29% in Asia to 61% in Sub-Saharan Africa.

- The country of South Africa has the highest infection rate in the world, where adult infection rates are as high as 39% in the province of KwaZulu-Natal. It appears, however, the epidemics here has hit a plateau, and is leveling off everywhere in the southern African region.
- “Ethiopia’s epidemic stabilized in urban areas in 1996–2000, after which HIV infection levels declined slowly, notably in parts of the capital, Addis Ababa. In rural Ethiopia, where the majority of the population resides, the epidemic has remained relatively stable since HIV prevalence peaked in 1999–2001...”
- HIV transmission in Asia takes the form of injection drug use, men having sex with men, and men having sex with commercial sex workers. Almost 5 million people were HIV positive here in 2007, half of them Indians.
- Europe and Central Asia are taken together in this UN report. About 1.6 million infected individuals live here, and 150,000 were newly infected in 2007. Ninety percent of the new infections were in two countries - Russia (66%) and Ukraine (21%). Injection drug use remains the major form of transmission in Russia (66%) followed by heterosexual transmissions (32%).
- About 100,000 people were newly infected in Latin America in 2007 bringing the total of HIV-positive individuals to 1.6 million. The main forms of transmission include commercial sex and men having sex with men. About a third of the people living with HIV are in Brazil where about half of the infections are due to unprotected homosexual sex between men.

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