Impact of HIV/AIDS in Ethiopia

Overview of HIV epidemic in Ethiopia

Ethiopia is one of the hardest hit sub-Saharan African countries by the HIV pandemic. According to statistics from the Ministry of Health (MoH), the overall prevalence of HIV in the population is 4.4%. The highest prevalence rate is found in the 15-49 age groups and particularly in urban settings, where the prevalence is as high as 12.6%, as opposed to rural settings where prevalence is approximately 2.6% and rising. These rates indicate that approximately 1.5 million people are infected and living with HIV in Ethiopia in a population of 69 million. 54.5% of all people living with HIV are women and 96,000 are children under the age of fifteen. In 2003 alone, an estimated 114,690 Ethiopians died of AIDS related conditions and this increased the number of children who have lost one or both parents to AIDS to over half a million. In 2003, it is estimated AIDS will further reduce the life expectancy at birth of Ethiopians by 4.6 years. It will also continue to increase infant mortality and, lower the population size and growth in Ethiopia.

There are complex array of factors that help explain and contribute further to the proliferation of the pandemic. HIV in Ethiopia is predominantly spread through unprotected heterosexual intercourse, which accounts for approximately 88% of all HIV infections. Mother, or parent, to child transmission (MTCT) accounts for 8-10%, and 2-5% of HIV infections can be attributed to blood and blood-contaminated products (including un-sterilized needles). Behavioral factors such as, multiple sexual partnering, socio cultural attitudes about sex, alcohol & substance abuse (especially the use of Chat), and the lack of awareness about HIV and high levels of untreated Sexually Transmitted Diseases (STDs), all help drive the epidemic. HIV can be both a cause and a symptom of poverty. Given the high rates of unemployment and poverty at the household level, increasing numbers of women turn to selling sex for survival. Ethiopia has also been affected by significant social disruptions such as wars (troop movements), further fueling the epidemic.

Environment and Service Delivery

In addition to morbidity and mortality, the HIV/AIDS pandemic in Ethiopia has adversely impacted the country's development. HIV/AIDS is affecting the agriculture , education, business & industry, and health sectors. Family & communities have also all been significantly affected by the pandemic.

HIV/AIDS is increasingly affecting the agriculture sector, economically the most important sector in Ethiopia, accounting for an average of 48% of gross domestic product (GDP), and 90% of exports. The fact that HIV prevalence is increasing in rural areas where 85% of the 69 million Ethiopians live, has become a major concern to the development efforts in the country.

As in other Sub-Saharan countries, the education sector is being severely compromised by the HIV pandemic. A 5% increase in death amongst teachers in Ethiopia has been noted between 1999 – 2001, some of which can be attributed to AIDS. The pandemic has hampered the efforts of the education sector by reducing the supply of teachers, reducing school enrollment and increasing dropout rates.

Business and industry are similarly feeling the effect of HIV. The fact that the pandemic is predominately affecting individuals between the ages of 14-59, the productive age group, is a significant loss of labor supply. The protracted morbidity and eventual mortality resulting from HIV/AIDS causes significant lost time to illness, reduced productivity, shortage of manpower, increased absenteeism and rising medical costs. The traditional right of funeral attendance further compounds workplace absenteeism.

The severely constrained health care system is also being further challenged by the HIV pandemic. According to the MoH, about 40% to 60% of hospital beds in Ethiopia were

occupied by AIDS patients in 2001. The increased number of patients seeking medical care for HIV/AIDS related ailments, such as Tuberculosis (TB) and other opportunistic infections (OI) is stifling the already limited health care system in Ethiopia.

As reflected above, HIV/AIDS impacts the society at many levels and thus requires a multi-sectoral approach. In order to address this devastating impact, the Ethiopian government has underscored its commitment to fight the epidemic by launching its quadrennial strategic plan for intensifying multi-sectoral HIV/AIDS response (2004 – 2008) with the goal of reducing the spread of HIV infection and alleviating its social and economic impact.

Community

Close family members, neighbors and various community organizations are an integral part of life in Ethiopia. These groups or individuals try to assist suffering relatives through mostly informal channels. Although limited, relatives assist family's infected and affected by HIV by supplying labor and material support, and often taking care of orphans of close relatives. However, with 31% of the population earning under $1 dollar a day, their own marginal existence becomes critically overstretched.

Community organizations such as Idirs assist families that belong to their organizations with the high costs associated with mourning rights and funeral arrangements. Unfortunately, with the increasing number of deaths associated with AIDS, most of these organizations are at the brink of bankruptcy and their ability to fulfill even these duties is becoming questionable.

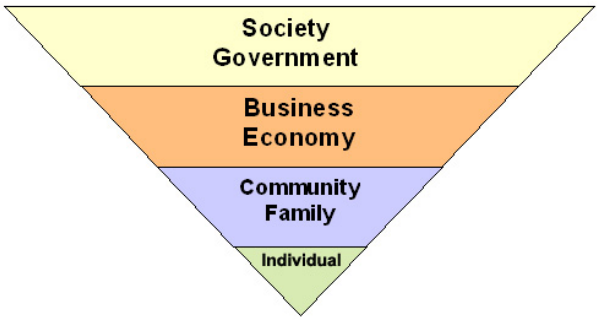
The MoH strategic plan highlights the need to rely strongly on the community as leaders in the fight against HIV/AIDS and places special emphasis on *social mobilization* and *community empowerment*. This commitment to reinforce the community's role in supporting HIV/AIDS prevention, care and treatment will strengthen the overall program and play a key role in the reduction of stigma and discrimination.

Individual

HIV patients are the most affected by the disease. As a result of the infection, they endure extended period of pain and suffering. High cost of treatment and medication erodes their financial savings and makes them become dependent on family and friends. Due to illness, absenteeism and eventual loss of employment results, further compounding their inability to support themselves. High level of shame and fear forces patients into self-created isolation. In addition, stigma associated with the disease fosters society's alienation of HIV patients, in the household, community, and workplace. Regardless of their HIV status, HIV patients are productive members of society and can play a significant role in the control of this epidemic.

Societal structure

The pyramid below represents the multi-sectoral nature of HIV/AIDS. Individuals represent the basic society-building unit. In the aggregate, they form the community, which owns and determines the scope and direction of the program. Business and economy play an integral role, as they are the support structures that enable the individual and the community to endure. The government on the other hand commits to political leadership and governance.



When a large number of individuals are ill as a result of HIV/AIDS, a ripple effect is felt up the pyramid, hence the society at large.

Background on Anti-Retroviral Therapy

What is Anti-Retroviral Therapy (ART)?

Anti-**R**etroviral **T**herapy (ART) is the administration of at least three different medications known as **A**nti-**R**etro**V**iral drugs (ARV) in order to suppress the replication of the human immunodeficiency virus (HIV). Treatment with these combinations of drugs is also known as **H**ighly **A**ctive **A**ntiretroviral **T**herapy (HAART). ART is not a cure. It must be taken for life and is costly. ART is delivered as part of a comprehensive care, which includes Voluntary Counseling and Testing (VCT), the diagnosis and treatment of Sexually Transmitted Diseases (STDs), Tuberculosis (TB), Opportunistic Infections (OI), and the prevention of mother to child transmission (PMTCT) as well as the treatment of pregnant women.

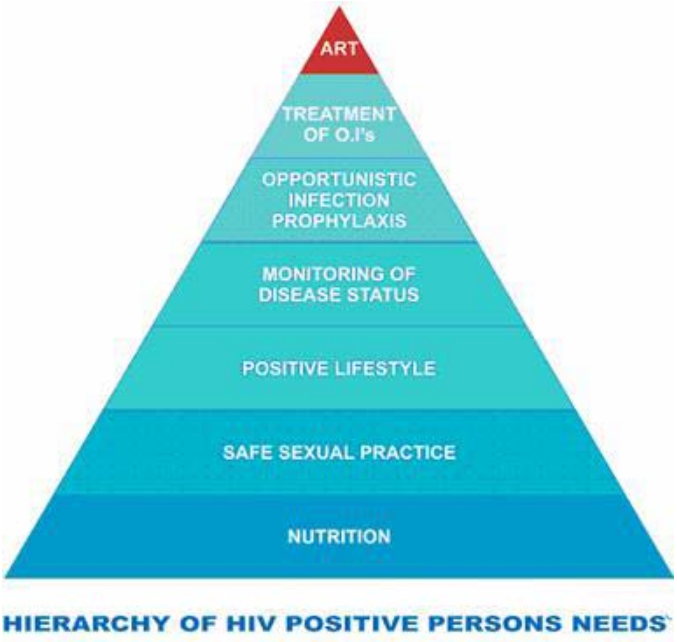
ART changes a uniformly fatal disease to a manageable chronic illness. Successful use of ART suppresses HIV viral replication, consequently slowing down disease progression, improving immunity and delaying mortality. Even if ART is not a cure, it prolongs and enhances the quality of life of People Living with HIV/AIDS (PLWHA). Once ART is started, it has to be taken for life with better than 95% adherence.

Anti Retroviral Drugs (ARV)

There are currently three major classes of ARV drugs: nucleoside or nucleotide analogue reverse transcriptase inhibitors (NRTIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs) and protease inhibitors (PIs). The list of ARVs approved for use in Ethiopia is included in the ART Information Toolkit.

When does an HIV patient need to start ART?

All HIV patients do not need to be on ART. In the natural course of HIV infection, it takes up to eight years before an individual infected with HIV develops AIDS symptoms. It then takes another 1 – 3 years before death. HIV infected patients are started on ART when they manifest signs and symptoms of WHO Stage III or their CD4 count falls below 200 (the laboratory definition of AIDS). With or without ART, HIV infected individual can live a long and productive life by following healthy living, which includes balanced nutrition, exercise, safe sexual practices, and avoidance of harmful practices such as smoking, alcohol and drug abuse. In addition, close monitoring of the disease status and ensuring timely access to health care, can minimize damage to the immune system. As the disease progresses, prevention and treatment of OI become an essential component of HIV treatment.

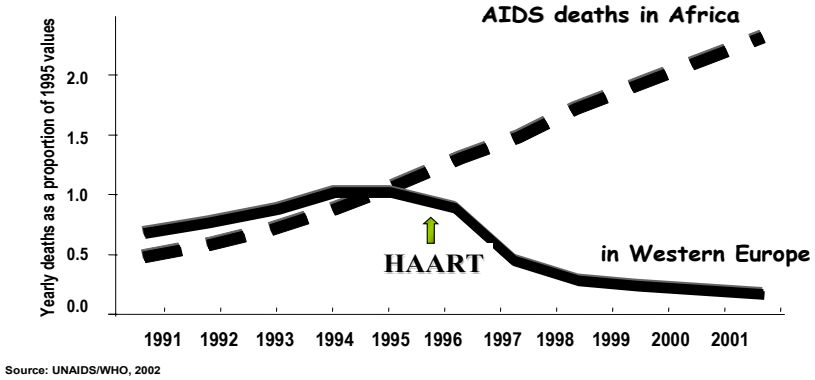


Impact of ART on AIDS

AIDS related deaths and illnesses in countries where ART has been available since the mid 90's have declined considerably. The experience of developed nations has proven that ART reduces disease burden and dependence, increases well-being and productivity and restores hope of individuals.

There are several examples that illustrate the success of ART. The graph below shows the widening gap in AIDS associated death rates between Western Europe and Sub-Saharan Africa.

Widening mortality Gap of AIDS due to HAART



Source: UNAIDS/WHO, 2002

The major factor for the gap is the inadequate use of ART in Africa. Countries that have scaled up ART treatment have benefited not only from reduced mortality, but also, reduced disease burden among their society, reflected by markedly reduced hospital admissions. Even more

impressive is the rate of return to work of formerly HIV disabled patients. Brazil saved half a billion USD in four years after the scale-up of ART program.

The dramatic reversal of disease progression creates hope and reduces the fatalistic attitude of the HIV patients, health care providers and the society at large. . The will to live then becomes a very powerful motivator for people to seek counseling and testing services and to follow behavior change messages. These positive ART related outcomes, including stigma reduction and increased community participation in prevention are the lessons learnt from other countries with ART experience.

Challenges of ART

Adherence, side effects, viral drug resistance, stigma and cost are challenges to the implementation of safe and effective ART program.

- **Adherence** refers to informed consent and participation in care and treatment. Patient agrees to follow the instructions on drug regimen as prescribed by the health provider as well as comprehensive care. Adherence is critical for the successful management of all chronic illnesses including ART. ART requires >95% adherence level (missing no more than one dose per month), to maximize health benefits and to avoid the emergence of drug resistant HIV strains. Patients need to strictly adhere to the advice and instructions of healthcare providers. Non-adherence by patients on ART has serious consequence both on the individual as well as the society. HIV replicates and mutates (changes its character, including its ability to resist drugs) at a very high rate. The virus can, therefore, naturally, produce offspring that are resistant to one or more antiretroviral drugs. When antiretroviral drugs that normally suppress the virus are taken intermittently or doses are missed, the blood level of the drug falls to below the level at which the virus is suppressed. The resulting low drug level can still be enough to suppress the sensitive members of the virus population, leaving the resistant ones. As the drug resistant strains rapidly replicate the treatment fails and the individual can no longer benefit from the therapy.

Unfortunately, the resistance that the selected viruses develop is not confined to one drug or the drugs the patient was on, but also to other drugs in the same class. Thus not adhering to one drug may cause resistance to many other antiretroviral drugs. In this case, the future treatment options of the patient are seriously limited. In addition, in countries like Ethiopia where the majority of HIV transmission is due to unprotected multiple sexual encounters, the resistant virus can then be transmitted in the community. This will lead to a superimposed epidemic of drug resistant HIV.

Near perfect adherence, missing no more than one dose per month is necessary to maintain undetectable viral load. However as adherence is a "*complex behavior*" it will require a robust patient support system to accomplish it. Many people on ARVs may have difficulty in taking the drugs regularly due to side effects, complicated regimens or difficulty in taking too many pills among other reasons. It is, therefore, important that people on ART are supported throughout their treatment, not just at the beginning, through their health care provider, family & community whenever possible.

At the individual level the patient should seriously consider options for status disclosure to at least one family member or friend, in order to have the necessary support for adherence. It is also recommended that the patient join an ART support group if available. If indicated, patients must be treated for mental illnesses and supported to stop drugs such as alcohol and Chat. Family, peers or even the community must work together to support patients on ART. Family members should ensure that the patient takes their medication as prescribed by the health care provider. They should also assist the patient with regular follow up with the health provider and practice healthy lifestyle.

Positive provider-patient relationship is one of the critical factors for improving and maintaining adherence. In order to ensure high level of adherence, ART must be started **only** when the patient is **ready.** The regimen must be kept as simple as possible, minimizing the amount of pills to be taken and have the least number and severity of side effects. Medications that could be taken without regard to food are also preferred. The treatment should be tailored to fit the life style of the patient and not the patients' life style that is tailored to fit the regimen. Furthermore, medication refills must be made readily and easily accessible to the patients.

There needs to be continuous patient-hospital link, especially if there is doubt that the patient may not follow through with visits and follow up arrangements. The clinic or hospital should establish patient education program. This is one area where group education is effective and preferred by the patients. Patient resources (general education on HIV, specific written instructions, especially on medications) must be made available as handouts. The care center staff must understand and promote the importance of adherence. A culture of delivering adherence message at every opportunity must be developed and sustained. The center should also try to develop and use reminders that are locally determined and applicable (equivalent to pill box and medication pocket book).

- **Side effects** could be numerous and relatively common because three different drugs are being administered at the same time. Most of the side effects are, however, minor and will be tolerated as patients continue to take the drugs. In rare instances, the side effects could be severe and life threatening requiring medication adjustment or complete discontinuation and change to a different drug regimen. Side effects are best dealt by care providers. It is, therefore, highly advisable that patients return to their providers for scheduled visit and close follow up

- **Viral drug resistance:** The consequence of non-adherence is the emergence of viral drug resistance**.** As resistant strains replicate within a patient, ARVs will fail to suppress the virus. There is then the potential of this strain being transmitted within the community and nation, starting an additional epidemic of resistant HIV with very little or no options for treatment. Lack of adherence is the major contributing factor to drug resistance and must be not only the patient's, but also the nation's concern.

- **Stigma and discrimination** are among the biggest challenges for HIV patients as they would be reluctant to access treatment, care and support for fear of alienation. Preventing and reducing stigma is vital so that people are not discouraged from using and helping others on ART. Because of stigma, patients are forced to take their medications in secrecy increasing the likelihood of non-adherence. Regardless of factors amplifying stigma, patients on ART will face real challenge to continue to take medications in secrecy and therefore are strongly recommended to disclose their HIV status to close family members for additional support. If experiences from other countries were to hold true in Ethiopia, ART by prolonging productive life, will create hope and significantly lessen stigma.

- **Cost of medications and treatment** is a major contributing factor to lack of adherence. It is estimated that only about 2 % of Ethiopians can afford the full cost of ART. Due to the high cost of ARVs inadequate supply is bought and stretched to last over an extended period. It is anticipated that the scaling up of free ART will ease this problem and significantly improve adherence.

- **Vulnerable groups:** The social and economical standing of certain segments of the community such as women and children need to be addressed systematically to ensure equitable access. Gender imbalance might be discouraging to vulnerable groups in accessing ART. Evidence shows that women are often the last to access treatment. Therefore, mechanisms to address the needs of such vulnerable groups must be in place to assure equal access for these groups.

ART in Ethiopia

Why ART in Ethiopia?

In the face of competing demands such as malaria, Tuberculosis and famine, some question whether an investment in ART in Ethiopia is justifiable. Given the impact of AIDS across society and the potential of ART to reduce the burden, the justification for pursuing this agenda is unarguable. HIV/AIDS is affecting every sector of the Ethiopian society. At the macro level, agriculture, education, health, and business and industry sectors are all adversely impacted by the disease. Families and communities are likewise affected. The MoH estimates that the annual mortality rate for those in the 15-49 age range will increase from a projected 200,000 without AIDS, to over 350,000 with the AIDS epidemic in 2004. Behind these numbers is increased absenteeism in the workplace, reduction of productivity, reduced family income, and increased family expenditure on health care and burial rituals. In a resource poor country such as Ethiopia, the economic impact of AIDS related illnesses and deaths is so severe, strongly justifying the need to start ART.

Current ART status in Ethiopia

Recognizing the devastating effect of HIV/AIDS on its population and the positive impact of ART, the Ethiopian government has responded to the epidemic as a national emergency and imperative to scale up the ART program. The MoH has been working towards the provision of safe, effective, equitable and sustainable ART services to those infected by HIV. In this effort, it has developed an ART Policy and ARV Guidelines with support from national and international partners.

Since the beginning of the ART Program in 2003, trained health providers in 37 hospitals throughout the country are providing fee based ART services to over 13,000 persons. In addition, as funds have become accessible from various sources, the Ethiopian government has prepared the groundwork to establish an integrated National ART Program to deliver free ARV through one standard of care across the nation. The MoH is at the forefront of this effort, coordinating and facilitating the work of various donors, implementing partners and NGOs. ART training programs, drug supply management, services quality assurance and Health Management Information Systems have been developed.

A National Program Implementation Guideline at the national, regional, facility and community levels highlighting the requirements for an ART program has been finalized. The following are the guiding principles of the ART Implementation Guideline:

- ART will be an integral part of the HIV continuum of care and comprehensive service.
- The chronic care model will be applied to delivery of ART.
- Treatment and clinical procedures will conform to national ARV treatment guidelines, which are based on international standards and best practices.
- Greater involvement of PLWHA will be encouraged.
- Equitable universal access will be strongly promoted.
- National prevention strategies will be emphasized in partnership with care and treatment.
- The National ART Program will contribute to the strengthening of the national health care system.
- Efforts will be made to ensure sustainability.
- Only one National ART Implementation guideline will be followed.
- Public-private partnership will be encouraged and promoted.
- National and international networking will be supported and valued

ART Rollout Plan

With 250,000 – 300,000 persons in need of ART, the MoH plans to make free ARV treatment available to 320,000 persons by 2008. A phased approach will be used to rollout the ART program throughout the nation. HIV regional prevalence, population density and regional equity were taken as criteria to determine the number of ART sites per region

Initially, the program will start in 50 hospitals and health centers[1] throughout the country selected by the Regional Health Bureaus, MoH, Ministry of National Defence and the Federal Police (see list included in the ART Information Toolkit). Among these 50 ART sites, the ART program will begin in the most ready sites based on the minimum clinical, pharmacy and laboratory packages, while the least ready ones are being built. Meeting the minimum packages, highlighted in the ART Implementation Guideline, assures that quality of care is met in delivering ART services. In the second phase, the MoH plans to expand the ART program to all hospitals and health centers, including private hospitals in the country. The ART rollout uses health centers as a key entry point for HIV patients seeking care.

Eligibility Criteria for Treatment

Ideally, access to ART should be universal and equitable. The "right to treatment" has now been recognized as a natural extension of the right to health. However, the reality in Ethiopia today dictates eligibility criteria as a result of inadequate supply of free ARVs. Therefore, not all those who qualify for free ART will be able to get it initially. Since only a very limited percentage of those estimated to need ART will access the treatment the following criteria for access to free ART, have been established. The framework for access to free ART will be transparent and participatory to ensure that all people will be considered for high quality services on equal basis.

At the national level, the following are the minimum access criteria, given in order of importance:

1. HIV regional prevalence and population density
2. Access priority for vulnerable groups [2]

At the facility level, access to ART should be further prioritized based on:

1. Clinical priority
    a. Minimum stage of disease requiring ART
    b. ART reversible stage of disease determined by clinician
2. Non-clinical priority
    a. The most vulnerable groups
    b. Gender equity, for example equal representation of women
    c. Patient's readiness
3. Consultation with HIV/AIDS Committee at the facility level

Safety of those who do not start indicated ART will be assured through:

- An open access practice set up that guarantees same day evaluation and care of patients who seek care.
- Prompt evaluation and care of OIs and other clinical conditions.

[1] Health Centers are selected in areas where hospitals do not exist.

[2] Vulnerable groups are defined as children, pregnant women, health workers exposed in the line of duty (PEP) and rape victims.

How should an HIV positive person access ART?

Clinical and non-clinical eligibility criteria will be used to evaluate if HIV patients should be on ART. HIV patients will initially be evaluated at their nearest health centers. Those who have signs and symptoms of WHO Stage III or AIDS defining illnesses will be referred to ART hospitals for further evaluation and treatment. Other points of referral for ART services include TB clinics, hospital outpatients and inpatients, antenatal care (ANC) and the Voluntary Counseling and Testing (VCT) center. Once the patients are examined by the ART physicians, hospital level quota, priority for vulnerable groups and the readiness of the patients will be taken into account before ART is started.

If a clinically eligible patient is not started on ART as a result of not meeting any of the above non-clinical criteria, the patient will be put on a waiting list for ART and will be continually monitored and treated for other OI. Patients on ART waiting list must be able to see their providers at any time they feel there is need for evaluation.

Program sustainability

A major concern of the National ART Program is how to sustain a life long supply of free ARV for all those on treatment. Since the ART program is supported by donors such as the Global Fund for HIV/AIDS, Tuberculosis and Malaria and the US government's Ethiopian AIDS Emergency Plan, a complete dependence on donors' commitment is unadvisable. In order to address this issue, national leaders and policy makers have recommended various approaches to assure sustainability. These resource mobilization and cost saving strategies include establishing cost sharing with income sliding scale, encouraging workplace ART initiatives, approaching local groups and persons in the Diaspora for support, promoting public-private partnerships and most importantly promoting local production of ARVs.

Selected Hospitals for ART Roll-out, January 2005
National ART Program - Ethiopia

Sites and Location				
No	**Region**	**Town**	**Facility name**	**Type**
1	Addis Ababa	Addis Ababa	Zewditu Hospital	Public
2	Addis Ababa	Addis Ababa	Tikur Ambessa Hospital	University
3	Addis Ababa	Addis Ababa	Armed Force General Hospital	Military
4	Addis Ababa	Addis Ababa	Bella Hospital	Military
5	Addis Ababa	Addis Ababa	Police Hospital	Police
6	Addis Ababa	Addis Ababa	St Paul Hospital	Public
7	Afar	Dubti	Dubti Hospital	Public
8	Afar	Awash	Awash Health Center	Public
9	Amhara	Debre Marcos	Debre Marcos Hospital	Public
10	Amhara	Debre Tabor	Debre Tabor Hospital	Public
11	Amhara	Debre Berhane	Debre Berhane Hospital	Public
12	Amhara	Weldia	Weldia Hospital	Public
13	Amhara	Finote Selam	Finote Selam Hospital	Public
14	Amhara	Sekota	Tefera Hailu Metasebia Hospital	Public
15	Amhara	Gondar	Gondar hospital	University
16	Amhara	Bahir Dar	Bahir Dar hospital	Public
17	Amhara	Dessie	Dessie hospital	Public
18	Benshangul	Asosa	Asosa hospital	Public
19	Benshangul	TBD	Hospital/ Health Center	Public
20	Dire Dawa	Dire Dawa	Dill Chora Hospital	Public
21	Gambella	Gambella	Gambella hospital	Public
22	Harari	Harar	Hiwot Fana Hospital	Public
23	Harari	Harar	Military hospital	Military
24	Oromya	Adama	Adama hospital	Public
25	Oromya	Nekempt	Nekempt Hospital	Public
26	Oromya	Metu	Metu Hospital	Public
27	Oromya	Assela	Assela Hospital	Public
28	Oromya	Chiro	Chiro Hospital	Public
29	Oromya	Negele	Negele Hospital	Public
30	Oromya	Dembidolo	Dembidilo Hospital	Public

31	Oromya	Fitche	Fitche Hospital	Public
32	Oromya	Goba	Goba Hospital	Public
33	Oromia	Ambo	Ambo Hospital	Public
34	Oromya	Jimma	Jimma hospital	University
35	Oromya	Debre Zeit	Air Force hospital	Military
36	SNNPR	Dilla	Dilla hospital	University
37	SNNPR	Yirgalem	Yirgalem Hospital	Public
38	SNNPR	Sodo	Sodo Hospital	Public
39	SNNPR	Mizan Teferi	Mizan Teferi Hospital	Public
40	SNNPR	Hosana	Hosana Hospital	Public
41	SNNPR	Butajira	Butajira Hospital	Public
42	SNNPR	Arbaminch	Arbaminch Hospital	Public
43	Somali	Jijiga	Jijiga hospital	Public
44	Somali	Gode	Gode Hospital	Public
45	Somali	Kebridehar	Kebridehar	Public
46	Tigray	Mekele	Mekele hospital	Public
47	Tigray	Mekele	Army hospital	Military
48	Tigray	Adigrat	Adigrat Hospital	Public
49	Tigray	Axum	Axum Hospital	Public
50	Private Hospital to be determined			

Simple HIV and AIDS Treatment Glossary.

Adherence - Informed consent to participate in own comprehensive treatment.

AIDS - Acquired Immune Deficiency Syndrome: Commonly refers to the advanced stage of HIV illness, when the CD4 count falls under 200. It started as the CDC case definition term when patients presented AIDS defining illnesses.

Antiretroviral - Refers to drugs used against retroviruses, commonly anti-HIV drugs

Approved drugs – Drugs that have met the safety and efficacy requirements of regulatory authorities before they are marketed.

CD4 – A receptor on the surface of cells that HIV attaches to. The cells involved in cell-mediated immunity known as T-lymphocytes have the CD4 marker. Other cells, including some in the brain have the same marker and are the targets of HIV.

CD4 count – Represents the count of the cells with CD4 receptor in circulation.

Clinical – Medical care related

Combination therapy- Certain illnesses and infections require more than one medication taken at the same time to improve. Three drugs are needed to suppress HIV replication. Combination therapy refers to such an intervention.

Cross resistance - If HIV is resistant to one drug, it will sometimes be resistant to similar drugs in the same class. This is called cross-resistance, and it means that some anti-HIV drugs will not work even though a person had not previously taken them.

Diagnosis – Identifying a specific cause of a medical condition or illness.

Disease progression – when disease gets worse.

Drug Interaction- When taking more than one drug at the same time, one drug affects the other by lowering or raising its level in the body, or sometimes raising or lowering its action. Some drugs also antagonize or synergize with each other.

Drug Resistance -The ability of viruses and bacteria to multiply in the presence of drugs that would have normally killed them.

HAART - Highly **A**ctive **A**ntiretroviral **T**herapy – Treatment with a combination of at least three different ARVs.

HIV- Human Immunodeficiency Virus- The virus that causes AIDS. There are two different types HIV-1 and HIV-2. Worldwide HIV-1 is the most common type.

Immune system - The body's natural defense mechanism against foreign substances.

Immunosuppression - A state of the body in which the immune system is suppressed or damaged so that it can no longer defend the body against infections and disease.

NNRTI - Non Nucleoside Reverse Transcriptase Inhibitors are a class of antiretroviral drugs which work by blocking the action of the HIV enzyme reverse transcriptase.

NRTI - Nucleoside Reverse Transcriptase Inhibitors are a class of antiretroviral drugs which work by blocking the action of the HIV enzyme reverse transcriptase. These drugs are sometimes known as Nucleoside Analogues.

Nucleotide Analogues - Nucleotide Analogues are antiretroviral drugs that work in a very similar way to the Nucleoside Analogues.

Opportunistic Infection (OI) – Infections that normally do not infect or manifest in patients with intact immunity. These infections cause disease in people with damaged immune systems.

PLWHA – People Living With HIV/AIDS

Prophylaxis – Intervention (Vaccination, medication) to prevent the onset of an illness or disease (primary prophylaxis), or to prevent recurrence of illness (secondary prophylaxis).

Protease - An enzyme that HIV uses to break down proteins into smaller units.

Protease Inhibitor - (PI). Protease Inhibitors are a class of antiretroviral drugs, which work by blocking the action of the HIV enzyme protease.

Regimen – medicine or medicines formulated for a specific illness or disease.

Replication - The process of viral reproduction/multiplication.

Resistance – The ability of organisms to grow/multiply in the presence of chemicals/drugs that would normally kill them or suppress them.

Reverse Transcriptase - An enzyme that converts genetic material from RNA into DNA.

Side-Effects – Term commonly used to refer to the unintended adverse outcome of drugs.

Toxicity- when side effects adversely affect organs or systems.

Tuberculosis (TB) - A disease caused by Mycobacterium tuberculosis

Vertical Transmission- Transmission of HIV from mother to infant before or during childbirth.

Viral load –The mount of viruses in the blood circulation. The viral load in HIV infection directly correlates with the degree of immune suppression.

WHO State III – Signs and symptoms of HIV disease such as 10% weight loss, which are identified by the physician to evaluate patients' need of ART.

Frequently Asked Questions

- *What is the difference between ARV and ART?*

Anti**R**etro**V**iral (ARV) are drugs that have suppressive effect on HIV. **A**nti**R**etroviral **T**herapy (ART) is an anti HIV treatment using a combination of a minimum of at least three ARVs.

- *Are ARVs a cure for AIDS?*

No, ARVs are not a cure for AIDS. These drugs suppress HIV viral replication, consequently delaying disease progression, thereby improving immunity and delaying mortality. They prolong and enhance the quality of life of PLWHA, changing a uniformly fatal disease to a manageable chronic illness.

- *When does an HIV patient start on ART?*

An HIV patient starts ART when he or she has signs and symptoms of WHO clinical stage III or AIDS defining illness. The physician will determine the patient's clinical indications and prescribe ARVs appropriately. All HIV patients do not need to be on ART.

- *How long should an HIV patient be on ART and why?*

Once a patient starts on ART, the medications must be taken for life near 100% adherence. ARVs only suppress the virus, but do not destroy it. Therefore, the drugs need to be taken all the time to continuously suppress the virus since it will always be in the body.

- *What are the side effects of ARV?*

This question is best deferred to appropriate caregivers. Side effects could be numerous and relatively common because three different drugs are being administered at the same time. Most of the side effects are, however, minor and will be tolerated as patients continue to take the drugs. In rare instances, the side effects could be severe and life threatening requiring medication adjustment or complete discontinuation and change to completely different drug regimen. It is, therefore, highly advisable that patients return to their providers for scheduled visit and close follow up

- *Can an HIV patient interrupt taking ARVs for any reason ?*

No, an HIV patient should never interrupt taking ARVs for any reasons expect when recommended by the physician. Interruption will cause viral drug resistance resulting in treatment failure.

- *Do ARVs eliminate the transmission of HIV/AIDS?*

No, ARVs do not eliminate the transmission of HIV/AIDS. They only suppress virus replication. Therefore, an HIV patient on ART still transmits HIV. Safe sexual practices should always be practiced.

- *Can children be on ART?*

Yes, HIV positive children can be on ART once their clinical stage is determined by their physician. ART have a markedly positive effect on children, by improving their development and growth. The ARV preparation and dosage for children are different than those of adults, thus children should not be given ARVs prescribed for adults.

- *Can an HIV pregnant women be on ART?*

Yes, HIV pregnant women can be on ART. Most ARVs are relatively safe, except a couple that are harmful to the fetal development. The physician will prescribe the appropriate ARV drugs for pregnant women.

- *What are the nutrition requirements and how important are they?*

Nutrition plays a significant role in building up immunity and fighting disease. HIV patients need to maintain a balanced diet.

GENERAL HEALTH INDICATOR

Indicator	Value	Source
Infant Mortality Rate (per 1000 live birth)(Proj. 2000-05)	96.8	MOH (2002/03)
Under 5 Mortality Rate (per 1000,000 live births)(Proj. 2000-05)	140.1	MOH (2002/03)
Maternal Mortality Ratio (per 100,000 live births) (Proj. 2000-05)	871	MOH (2002/03)
Total Fertility Rate (Number of live births per woman during childbearing years)(Proj. 200-05)*	5.9	MOH (2002/03)
Prevalence of Contraceptive Use Among Sexually Active Women of Childbearing Age (15-49) (%) **	18.5	PATH FINDER (Unpublished Report)
Prevalence of Malnutrition in Children Under 5 (%)*	47.2	MOH (2002/03)

Source: The 1994 Population and Housing Census of Ethiopia, Analytic Report (CSA)
** Demographic and Health Survey, 2000*
***It is only in 4 Regions (Tigray, Amhara, Oromia and SNNPR)*

HEALTH SECTOR INDICATORS

Indicator	Value	Source
% of population with access to health care	70.2*	MOH (2002/03)
Total number of hospitals (including private and teaching hospitals)	119	MOH (2002/03)
Total number of Health Centers	451	MOH (2002/03)
Total number of Health Stations	2,396	MOH (2002/03)
Total number of Health Posts	1,432	MOH (2002/03)
Total number of Hospital Beds	11,793	MOH (2002/03)
Doctor-to-population ratio	1:25,958	MOH (2002/03)
Health Budget (% of total national government budget, 2002/03-04)	8.2	MOH (2002/03)
Health Expenditure per capita (US$)	6.0	MOH (2002/03)

Note: Health Centers, Health Stations, Health Posts and Private Clinics are included in the calculations which consider serving with the capacity of 25,000, 10,000 and 5,000 population each for Health Centers, Health Stations, Health Posts/ Private Clinics, respectively.
**The coverage includes the Service provided by Private Health Facilities*

DEMOGRAPHY

Indicator	Value	Source
Total Population	69,127,021	MOH (2002/03)
Rural Population Proportion (%)	84.5	MOH (2002/03)
Urban Population Proportion (%)	15.5	MOH (2002/03)
Projected Population Growth Rate (% per annum)	2.92	MOH (2002/03)
Population under Age 25 (%)(proj. 2003)	7.2	MOH (2002/03)
Life Expectancy at Birth (year. proj.2003)	Male: 53.4 female: 55.4	MOH (2002/03)
Crude Birth Rate per 1000 per year (proj 2000-05)	39.90	MOH (2002/03)
Crude death Rate per 1000 per year (proj. 2000-05)	12.60	MOH (2002/03)

Source: The 1994 Population and Housing Census of Ethiopia, Analytic Report (CSA) There is a newer source than this

HIV INDICATOR

Indicator	Value	Source
Number of Adults Living With HIV/AIDS (est. 2003)	1,404,000	MOH (2004)
Number of New Adult AIDS Cases (est. 2003)	98,000	MOH (2004)
Number of New Adult HIV infections (est. 2003)	197,000	MOH (2004)
Adult HIV Prevalence Rate (%)	4.4	MOH (2004)
Adult HIV Prevalence Rate in Addis Ababa (%, est. 2003)	12.4	MOH (2004)
Adult HIV Prevalence Rate, urban areas (%, est. 2003)	12.6	MOH (2004)
Adult HIV Prevalence Rate, rural areas (%, est. 2003)	2.6	MOH (2004)
Number of Children 0-15 Living with HIV/AIDS (est. 2003)	96,000	MOH (2004)
Number of Children 0-15 Living with HIV/AIDS (est. 2004)	103,675	MOH (2004)
Number of Women Living With HIV (est. 2003)	**817,000**	MOH (2004)
Prevalence of HIV Among Women (% est. 2003)	5.0	MOH (2004)
HIV Positive Pregnancies (est. 2003)	128,017	MOH (2004)
HIV Positive pregnant women (est. 2004)	137,488	MOH (2004)
HIV Positive Births (est. 2003)	35,000	MOH (2004)
Deaths Due to AIDS (est. 2003)	90,000	MOH (2004)
Cumulative Deaths Due to HIV/AIDS (est. 2003)	900,000	MOH (2004)
Current Number of Orphans under the age of 17 (est. 2003)	4,600,000	MOH (2004)
Current Number of Children that lost one or both of their parents due to HIV/AIDS (est. 2003)	**568,000**	MOH (2004)
Incidence of TB	292 per 100,000	MOH (2004)

ART INDICATOR

PLWHA on ART	13,100	DACA, Jan 2005
People eligible for ARV drugs in 2003	245,430	MOH (2004)
People eligible for ARV drugs in 2004	265,358	MOH (2004)