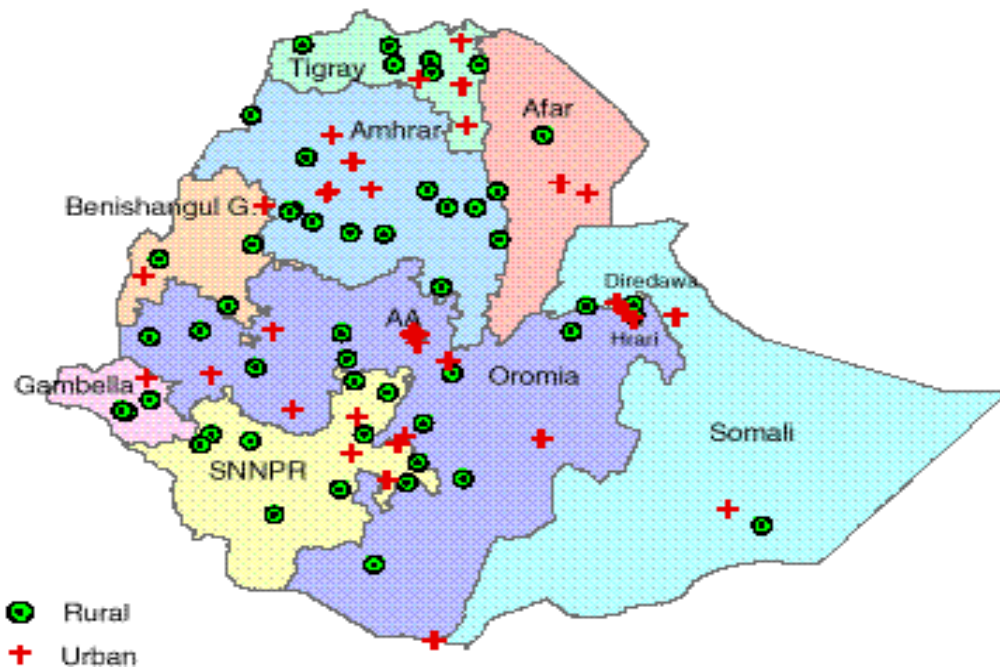




AIDS IN ETHIOPIA



SIXTH REPORT

Federal Ministry of Health/National HIV/AIDS
Prevention and Control Office

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LIST OF ACRONYMS

AIDS	-	Acquired Immunodeficiency Syndrome
ANC	-	Antenatal Care
ART	-	Antiretroviral Treatment
BCC	-	Behaviour Change Communication
BSS	-	Behaviour Surveillance Survey
CDC	-	Centers for Disease Control and Prevention
CSA	-	Central Statistics Agency
CL	-	Confidence Limit
CPR	-	Contraceptive Prevalence Rate
DHS	-	Demographic Health Survey
EHNRI	-	Ethiopian Health and Nutrition Research Institute
EIA	-	Enzyme Immunosorbent Assay
EpiModel	-	Epidemic Impact Model
EPI	-	Expanded Program on Immunization
EPP	-	Epidemic Projection Package
FSW	-	Female Sex Workers
HAPCO	-	HIV/AIDS Prevention & Control Office
HIV	-	Human Immunodeficiency Virus
IEC	-	Information, Education, and Communication
MOH	-	Ministry of Health
NACP	-	National AIDS Control Program
NACS	-	National AIDS Council Secretariat
NGO	-	Non-Governmental Organization
NSS	-	National Sentinel Surveillance
PLWHA	-	People Living with HIV/AIDS
PMTCT	-	Prevention of Mother-to-Child Transmission
RHB	-	Regional Health Bureau
RPR	-	Rapid Plasma Reagin
RTC	-	Regional Testing Center
SNNPR	-	Southern Nations and Nationalities Peoples Region
UNAIDS	-	Joint United Nations Program on HIV/AIDS
VCT	-	Voluntary Counselling and Testing
CT	-	Counselling and Testing
WHO	-	World Health Organization

Forward

Although the current HIV/AIDS Surveillance estimates indicate some encouraging signs in that the epidemic is stabilizing, the observed changes are not sufficient enough compared to the desired goals of the response against the epidemic. Given the size of the population and the magnitude of the damage already inflicted, it will take us a number of years to see significant declines in HIV prevalence and incidence with concerted and sustained efforts. Although there are advances in the availability, accessibility and utilization of HIV/AIDS prevention, care, support and treatment services and improvements in the management of the epidemic and the increasing resource availability, we still face a situation unlikely to give us respite in the near future.

Despite all the challenges, the government of Ethiopia and its partners are working hard to contain the epidemic and the achievements so far are encouraging. As part of this endeavour and as one of its major duties, the government has put the national HIV/AIDS policy in place to create an enabling environment to fight the epidemic. In addition, significant achievements have been made in putting in place the necessary systems, skilled human power, and other resources.

The HIV/AIDS Surveillance system has been an essential component of the HIV/AIDS response in Ethiopia soon after the report of the first two AIDS cases in 1986. In this respect, we have been publishing a national sentinel surveillance report every two years since 1996 and this report is the sixth in the series. The uses of the reports have been invaluable to policy makers, program designers, planners, and implementers in different organizations and at all levels. The fifth AIDS in Ethiopia report has been very instrumental in providing basis for the restructuring of the different institutional arrangements, scale up of services like VCT, ART, and PMTCT, etc. I would also like to express that the quality of the surveillance system has continuously improved over the years and that it has become more refined with the improved methodologies, laboratory quality control systems, and representativeness of the ANC sentinel sites and the concerted efforts towards building capacities at regional offices and health facilities. It is my sincere belief that users will find this report important for their work as the previous reports had been.

Finally, I would like to take this opportunity to thank all those who participated in the process particularly, CDC and WHO that were part of the surveillance system.

Negatu Mereke

HAPCO, Director General

EXECUTIVE SUMMARY

This sixth edition of the “AIDS in Ethiopia” report includes the estimates and projections based on the Antenatal (ANC)-based Sentinel Surveillance data from 1989-2005. The report also includes data from counseling and testing centers (CT), blood banks, prevention of mother-to-child transmission (PMTCT) and antiretroviral treatment (ART) programs, and 2005 Demographic Health (DHS) and Behavioural Surveillance (BSS) Surveys.

In the 2005 ANC-based HIV surveillance round, HIV testing was performed on left-over blood collected for routine syphilis testing in an anonymous and unlinked fashion. Data and specimens were collected from 44 rural and 38 urban sites. Blood samples were tested using Vironostika HIV Ag/Ab at 26 laboratories in the regions. All HIV-reactive specimens were re-tested using Enzygnost EIA; Murex Antibody test was used as a tie breaker. Second test and quality control was performed at the Ethiopian Health and Nutrition Research Institute (EHNRI). Crude national as well as site level prevalence values were calculated using site data, while population adjusted national HIV/AIDS prevalence and related estimates and projections were made using Epidemic Projection Package (EPP) and Spectrum computer software packages. Assumptions on transmission probabilities, morbidity, and mortality were used to derive HIV/AIDS related estimates other than prevalence.

Of the total 28,247 collected specimens, 16,252 were from rural sites and 11,995 were from urban sites. The overall unadjusted HIV prevalence among these samples was 5.3% (9.5% at urban sites and 2.2% at rural sites). ANC clients in the age group 15-24 years had the highest prevalence of 5.6% of all age groups. The modeled and adjusted (adjusted for differences in regional urban/rural population sizes) national HIV prevalence in 2005 was 3.5%; 3 % among males and 4% among females. The estimated prevalence in urban areas was 10.5% (9.1% among males and 11.9% among females) and 1.9% in rural areas (1.7% among males and 2.2% among females). In Ethiopia, the urban prevalence appears to have stabilized in the period 1996 to 2000 and is slowly and gradually declining since 2001. The rural epidemic stabilized after reaching its highest level during 1999-2001. The overall HIV prevalence for Ethiopia has stabilized with the number of people newly infected and dying being almost equal. The overall HIV incidence estimate for Ethiopia in 2005 was estimated at 0.26% and is projected to remain stable until 2010.

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 15-29 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. 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.

Of the total 28,316 ANC clients, 2.7% had positive Rapid Plasma Reagin (RPR) (3.6% urban and 2.0% rural). The total prevalence of syphilis among HIV positive clients (4.9%) was twice that of HIV negative clients (2.5%). HIV positive clients in rural areas had higher syphilis prevalence compared to those in urban areas. The prevalence of syphilis was highest among the 35-49 years old in urban settings and the 25-34 years and 35-49 years in rural areas.

The total HIV prevalence among 28,529 (22,261 male and 6,278 female) blood donors in 2005 was 5.0% (4.5% among males and 6.7% among females). The prevalence for those in the age group 15-19 years was 2.9%. The highest prevalence occurred among donors in the age group of 30-39 years.

The Annual report for Ethiopian Fiscal year 1998 (July 1, 1997 – June 30, 1998 E.C.) indicated that a total of 564,351 VCT clients received services; of these, 13.7% were HIV positive (15.7% among females and 11.6% among males). The Annual report also indicated that a total of 52,428 pregnant women were tested for HIV; of these, 4,172 (8%) tested HIV positive. Of those HIV positive, 2,208 (52.9%) of the pregnant women and 1,341 (32%) of their infants received nevirapine for PMTCT. By the end of July, 2006, 45,595 patients had ever started on ART at 132 facilities across the country. Of these, 35,460 were on treatment currently and 18,384 were enrolled in the first six months of 2006.

Over the years, progress has been made in the quality and availability of data, in bringing about behaviour change among the population, and in the overall HIV/AIDS control and mitigation efforts in the country. There have been improvements in the quality and rural representativeness of the ANC-based sentinel surveillance system; the national monitoring and evaluation system is now producing national programmatic data; and 2-points behavioral trend data have been made available for the first time from both the DHS and BSS surveys. The countries' HIV/AIDS control and mitigation efforts over the past six years have intensified: a politically conducive environment has supported a multi-sectoral approach and social mobilization strategy allowing the participation of all actors including civil society in HIV/AIDS prevention and mitigation efforts at national, regional and community levels; health sector response has been strengthened with rapid and mass scale-up of prevention, care, and treatment services including CT, PMTCT, and ART; and bilateral and multilateral organizations have significantly increased their technical and financial supports.

The behavioral trends (2001 vs.2005) from the DHS survey among the general population reveal high level of awareness; decreases in the prevalence of premarital sex and multiple sexual partners; and increases in condom use at last high risk sex; and increases in the prevalence of those ever tested for HIV among males (data for females was not available from DHS 2000). The BSS (2002 vs. 2005) preliminary results also

show high level of awareness among the respondents, high level of consistent condom use in the last 12 months among female sex workers, and increases in the proportion of those who had HIV tests.

However, much remains to be done. The urban epidemic is at an unacceptably high prevalence level of 10.5%; prevalence of behavioral indicators such as condom use are not at optimal levels; counseling and testing coverage is still low with only 5% of the general population 15-49 years of age being ever tested; ART has been accessed by only 13% of those who need ART; and only 0.8% of HIV infections among births to HIV positive mothers was averted in 2005/6 through PMTCT programs.

In conclusion, the ANC-based HIV Sentinel Surveillance results show that the national and rural HIV prevalence for Ethiopia has stabilized while the urban epidemic reveals a slow and gradual decline following peaks in prevalence in 1998-2000 for national, 1999-2001 for rural, and 1997-98 for urban areas. These findings can be a result of multiple factors including improved ANC-based sentinel surveillance system; impact of mortality of HIV infected individuals; and HIV/AIDS control and mitigation efforts. Further investigations are needed to establish causal relationships between these hypothesized and other potential factors and the observed epidemic trends. It is important to capitalize on the momentum gathered from positive changes in behavioral trends; scale-up of programs; and observed changes in the epidemic's trend to intensify and deepen the HIV/AIDS prevention, care, and treatment efforts so as to control and mitigate the impact of the HIV/AIDS pandemic in Ethiopia. This will require stronger commitment and increased engagement of every citizen, government, and civil society as well as assistance from partners for many years to come.

SECTION 1. BACKGROUND AND INTRODUCTION

Ethiopia's population reached an estimated 73 million in mid-2005, and is expected to grow by over 2.0% annually through 2025. Ethiopia's population is young with 43% under the age of 15 years. Eighty-four percent of the population is rural. Ethiopia has a federal system with nine regions and two Administrative Councils (Addis Ababa and Dire Dawa).

HIV was first detected in Ethiopia in stored sera collected in 1984 and the first two AIDS cases were reported in 1986. A National HIV/AIDS taskforce was established in 1985 and the National AIDS Control Program (NACP) was established at a Department level at the MOH in 1987. HIV/AIDS surveillance activities began in 1989. There are many factors that promote the spread of the disease including the presence of sexually transmitted infections, gender inequality, multiple sexual partners, prostitution, men with disposable income, alcohol, unsafe blood transfusion, and transmission from infected mother to her fetus/child during pregnancy and breast-feeding.

Two medium-term prevention & control plans were designed and implemented in 1989 and 1996 respectively. The HIV/AIDS Policy was formulated by MOH and adopted by the Council of Ministers in 1998. This created an enabling environment for HIV/AIDS prevention and control. The policy supplemented several policies such as the Health

Policy, Women's Policy, and the Education and Training Policy calling for a multisectoral response; guaranteeing rights for PLWHA; and facilitating the development of policies, e.g., on the supply and use of antiretroviral (ARV) drugs among other things.

The HIV/AIDS Prevention and Control Office (HAPCO) was established in 2002 after 2 years of functioning as the National HIV/AIDS Council Secretariat (NACS). It had developed and implemented a five year (2000-2004) national strategic framework as part of the national response to HIV/AIDS. Several priority interventions were implemented and several targets were successfully achieved in this period. The strategic plan for the succeeding four years (2005-2008) focuses on the provision of preventive, care, support and treatment services and stipulated ambitious targets. According to the plan, the implementation of all the programs were to be based on the principles and approaches of multi-sectoralism, decentralization, community mobilization and ownership, partnership, and the principles of the "Three Ones" principles [One agreed HIV/AIDS Action Framework that provides the basis for coordinating the work of all partners; One National AIDS Coordinating Authority with a broad-based multisectoral mandate; and One agreed country-level Monitoring and Evaluation System].

Moreover, restructuring of the implementation and coordination mechanisms was done where by the MOH has started to spearhead the implementation and coordination of the national programs. Encouraging achievements were seen within the last one and half years of the start of the implementation of the five years strategic plan. These include training and deployment of health extension workers who are implementing the health extension package, the construction and furnishing of various health institutions especially in rural areas, the massive scale-up of ART, HCT and PMTCT services and the massive involvements of communities in the provision of IEC/BCC, social care and support and other activities.

SECTION 2. METHODOLOGY

2.1. HIV SENTINEL SURVEILLANCE

Site selection, sampling, data/specimen collection, transportation, and testing

The ANC-based HIV Sentinel Surveillance System is based on the National HIV sentinel surveillance guidelines that were last revised in December of 2004. All regional health bureaus (RHB) and site staff were trained prior to sampling, using a training manual developed by the MOH. Data were collected from 38 urban (including one Federal Police and one Federal Armed Forces hospitals) and 44 rural sites (including one site totally serving refugees and two sites serving both refugees and local residents) in 2005. The sites were selected by both the MOH and the respective region. Criteria was developed in the selection of each site based on the ability to fulfill the minimum sample size, provide continuous ANC services, regularly draw blood for routine antenatal care, and maintain staff commitment.

For rural areas, CSA’s definition was applied to the extent possible; sites were selected that were at least 25 kms away from main roads and highways and those located in non-commercial centers and/or 100 kms away from regional or zonal towns. Sites were required to collect a minimum of 250 and 400 specimens if they were in urban and rural setting respectively. The maximum sampling period for urban sites was 12 weeks and 20 weeks for rural sites. Sentinel sites that were unlikely to achieve the target sample size cooperated with one or more health facilities (satellite sites) nearby to increase the sample size. There were 16 urban and 56 rural satellite sites. The satellite sites were health centers, clinics, or health posts, located near the principal site. Data from all satellite sites were combined with those from the main sites for analysis. The satellite sites also allowed or the surveillance system to penetrate deeper into rural areas.

Figure 2.1: Map of the 2005 Main Sentinel Surveillance Sites and Regional Labs

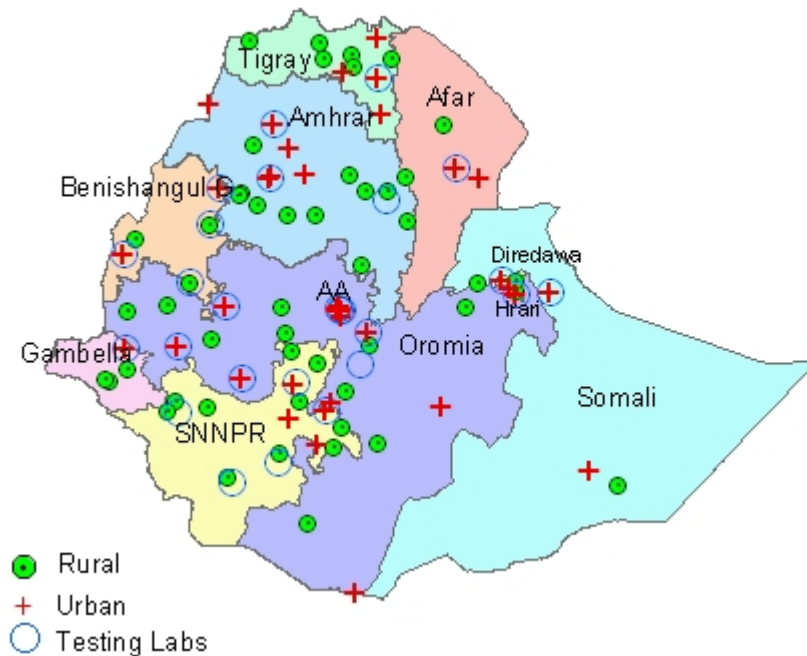
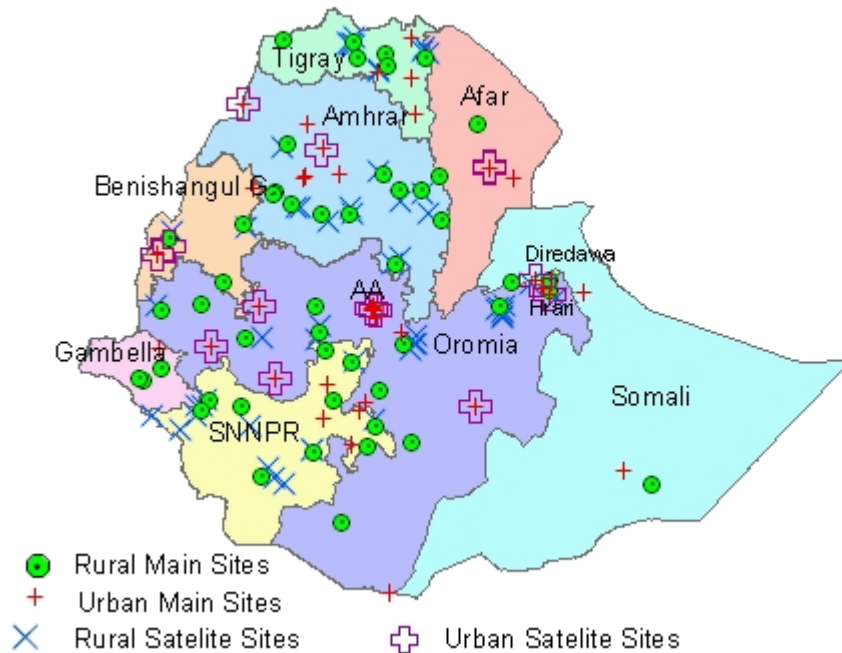


Figure 2.2: Map of the 2005 Main Sentinel Surveillance Sites and Satellite Sites



Rapid plasma reagin (RPR) testing for syphilis was done on all pregnant women attending ANC as part of routine antenatal care and all who tested positive for syphilis were treated. Left-over blood after syphilis testing was labelled with a surveillance code number and tested for HIV in unlinked and anonymous fashion. Blood from all eligible ANC clients was sampled consecutively during the surveillance period. Confidentiality was maintained throughout the process. At no time were the names or other personal identifiers of the ANC clients recorded or linked to the HIV test results. ANC clients were either offered HIV testing through existing PMTCT services or were encouraged to receive VCT for HIV where services were available nearby. Transcribed data included routine demographics and syphilis test results.

Specimens were transported to 26 regional testing laboratories maintaining standard cold chain procedures for HIV testing. All specimens were tested with Vironostika® EIA and the test results were recorded on provided data collection sheets. First tests from some sites were also performed at National Reference Laboratory for AIDS (NRLA)-EHNRI. 10% of randomly selected HIV negative and all HIV-positive specimens were re-tested using Enzygnost EIA at NRLA-EHNRI for quality control purposes; Murex Antibody test was used as a tie breaker. HIV reactive specimens were re-tested at EHNRI. If confirmed, they were classified HIV positive; all other specimens were classified as HIV negative.

Data management

Data collection sheets were forwarded to the MOH for processing using EpiInfo. Data were double-entered and cleaned.

Population HIV prevalence estimates

HIV prevalence estimates were made for 82 sites and data from 79 (43 rural and 36 urban) sites were used to make regional, urban/rural, and national HIV prevalence estimates. Results for Chifra and Abala, both rural sites in Afar, were dropped from analysis because of non-adherence to protocol guidelines detected during supervision visit. Data from the refugee site (Dima) as well as from the Federal Police and Armed Forces General Hospital were not included in the national and regional analysis due to the special populations they serve. However, the two other sites (Pygindo and Menge) were included for analysis as rural sites because most of their clients were local rural inhabitants even though refugees are also served at these sites. The results from Estie (an urban site) were not adequate enough for analysis because the majority of the ANC clients were rural residents. However, data on rural ANC clients attending Jaragedo (a satellite center for Estie) were used for analysis by considering the site as a rural site in consultation with the region.

The sentinel site HIV prevalence values from all available years (1989-2005) were fed into the Epidemic Projection Package (EPP) version 2.39 Beta and HIV prevalence curves that best fit all available data points were obtained for every region, including rural, urban, and Ethiopia (three curves for each region), as well as for the nation (rural, urban, and Ethiopia). For all regions (urban and rural combined), prevalence curves were weighted by the urban/rural regional population sizes. For national prevalence curves, estimates were weighted by urban/rural regional population sizes. The beginning year of the epidemic in urban Ethiopia was assumed to be 1982, and 1984 for rural Ethiopia. Data from 25 urban and 7 rural sites that had been involved in the recent three consecutive rounds of ANC based sentinel HIV surveillance were used for analyzing trends of HIV prevalence for the sites and rural/urban areas. Statistical tests were made using Chi-square for trend to look at significant changes in HIV prevalence.

HIV/AIDS impact and HIV incidence estimates

The SPECTRUM software package was used to estimate the various impacts of HIV/AIDS. For this purpose, demographic SPECTRUM files containing data on population size, age and sex distribution, life expectancy, fertility, and other parameters were created for every region (urban, rural, and total). The data were obtained from the 1994 census and projected for each year between 1982 and 2010 (the last year for which estimates were obtained) using the official assumptions of the Central Statistics Agency (CSA) for population growth, fertility, migration, and other parameters. The EPP-based prevalence estimates were fed into the demographic SPECTRUM files. SPECTRUM then provided estimates for parameters such as AIDS cases and deaths, HIV-positive births, and number of orphans using SPECTRUM default age patterns. National estimates (absolute numbers) were obtained by the addition of the figures of all eleven regions; for rates, combined estimates weighted by population size were obtained.

2.2. OTHER DATA SOURCES

Service-related HIV data

HIV/AIDS data from all other available sources, including blood donors, and VCT, PMTCT, and ART service sites were compiled and analyzed. Summary from the final results of DHS 2005 and preliminary results from BSS 2005 were incorporated as provided. Full reports from these two surveys will be published separately.

SECTION 3. ANC-BASED SURVEILLANCE FINDINGS

3.1. ANC-BASED UNADJUSTED HIV PREVALENCE

This section presents the major findings from the 2005 round of ANC-based HIV Sentinel Surveillance. More details will be published in a separate document entitled "Technical Document for the Sixth AIDS in Ethiopia Report" and will be made available as searchable database on the Ethiopia AIDS Resource Center website at www.etharc.org.

3.1.1. ANC-Based HIV Prevalence by Site and Setting

All figures presented here are derived directly from the 2005 round of ANC-based sentinel HIV surveillance without adjustments. The findings relate only to sampled ANC clients.

In 2005, a total of 29,925 samples were collected from a total of 82 (44 rural and 38 urban) sites. HIV prevalence varied widely across sites in all settings (range 0.0% in Hasengie Health Center in Harari to 24.8% at Federal Police Hospital in Addis Ababa) (Tables 3.1 and 3.2).

Table 3.1. HIV Prevalence (%) at urban ANC sites, 1989 - 2005

Region	Site Name	1989	92-93	1995	1996	1997	1998	99-00	2001	2002	2003	2005
Tigray	Abi Adi HC									7.7	9.6	10.0
	Adigrat HC								16.2		7.4	8.8
	Maychew Hosp.								16.8		7.4	14.4
	Mekele HC								17.2	16.8	9.3	13.4
Afar	Aysaita HC								12.4		11.3	12.5
	Dubti Hosp.										24.0	20.9
Amhara	Addis Zemen HC									12.6	10.5	4.7
	Bahir Dar HC		13.0					20.8	23.4	20.0	20.2	13.5
	Bahir Dar Hosp.								19.9	21.0	16.9	14.0
	Estie HC							7.3	10.7	8.9	11.7	
	Gonder HC								15.1	18.3	13.9	10.3
	Metema Hosp.											15.9
Oromia	Alemaya HC									2.5	2.2	1.3
	Chiro HC										4.4	5.4
	Jimma HC								8.6	16.9	10.2	8.3
	Mettu Hosp		10.7					4.0	10.5	11.6	10.8	7.8

	Adama HC								18.7	16.0	10.8	9.0
	Nekemet HC								9.1	11.3	13.0	10.4
	Shashemene HC							14.3	13.1		8.7	7.0
	Moyale HC											5.1
Somali	Gode Hosp.									5.6	2.5	1.0
	Jijiga Hosp.					12.7			19.0	15.7	7.3	5.5
Beni. G.	Assosa Hosp.									13.1	15.4	7.6
	Pawe Hosp.								8.5		13.2	8.5
SNNPR	Awassa HC						14.4	11.5	10.0	11.1	8.8	9.2
	Dilla Hosp.						14.5	11.7	9.8	11.5	12.1	9.3
	Hossana Hosp.						3.6	4.8	5.9	6.0	12.4	3.1
	Soddo HC						9.2	10.7	11.6	12.2	11.2	7.5
Gambella	Gambella Hosp.					12.7		19.0	14.6	15.4	18.7	7.5
Harari	Hiywot Fana Hosp.								9.4	12.8	7.8	7.5
Addis Ababa	Akaki										10.9	9.1
	Gulele					20.0		18.2	15.8	12.3	12.4	13.0
	Higher 23					14.1		10.7	12.3	10.2	11.8	10.1
	Kazanchis					16.7		18.0	17.7	15.1	11.6	16.7
	Teklehymanot					18.5		14.0	16.6	15.1	15.1	11.7
	Total Addis Ababa	4.6	11.2	21.2	17.8							
Dire Dawa	Diredawa HC								8.5	11.6	7.7	3.0
	Diredawa Hosp.		12.3					13.6	15.2	12.1	14.4	11.0
	Federal Police Hospital										30.2	24.8
	Armed Forces Gen. Hosp.										15.3	12.0

Table 3.2. HIV Prevalence (%) at rural ANC sites, 1989 - 2005

Region	Site Name	1989	92- 93	1995	1996	1997	1998	99-00	2001	2002	2003	2005	
Tigray	Atsbi HC										6.0	4.2	
	Edaga Arbi HC										2.8	1.0	
	Enda Mariam K.		0*										
	Workamba HC										2.1	0.7	
	Zana HC											0.6	
	Semema HC												1.5
Afar	Chifra HC										1.7		
	Aboala HC												
Amhara	Bibugne HC										2.7	1.9	
	Bora HC										5.6	2.9	
	Chara Clinic										6.0	1.5	
	Dangla HC (s)									9.6	4.5	2.0	
	Enewari HC										11.9	4.3	
	Haik HC (s)									6.1	6.9	2.5	
	Kone HC										11.7	3.5	
	Mertolemar HC (s)									4.9	2.8	4.8	
	Sekela Clinic										6.6	1.4	
	Seya Debir HC		1.3*										
	Shola Gebeya HC		6.6*										
	Tenta HC											11.5	8.1
	Delgi HC												2.7
	Jaragedo HC												1.7
Oromia	Ayra Hosp							2.0	2.6	2.0	0.5	1.5	
	Ayuba (Arsi)		0.2*										
	Begi HC										2.2	0.8	
	Dadim Clinic								1.7	0.9	1.0	1.2	
	Gosa Clinic (Bore)								1.7	0.5	2.5	1.1	
	Dello HC										8.5	3.2	
	Derra HC										1.9	3.8	
	Gambo Hosp							0.7	1.1		0.7	1.1	
	Ginir Hosp								3.1				
	Raytu (Bale)		1*										

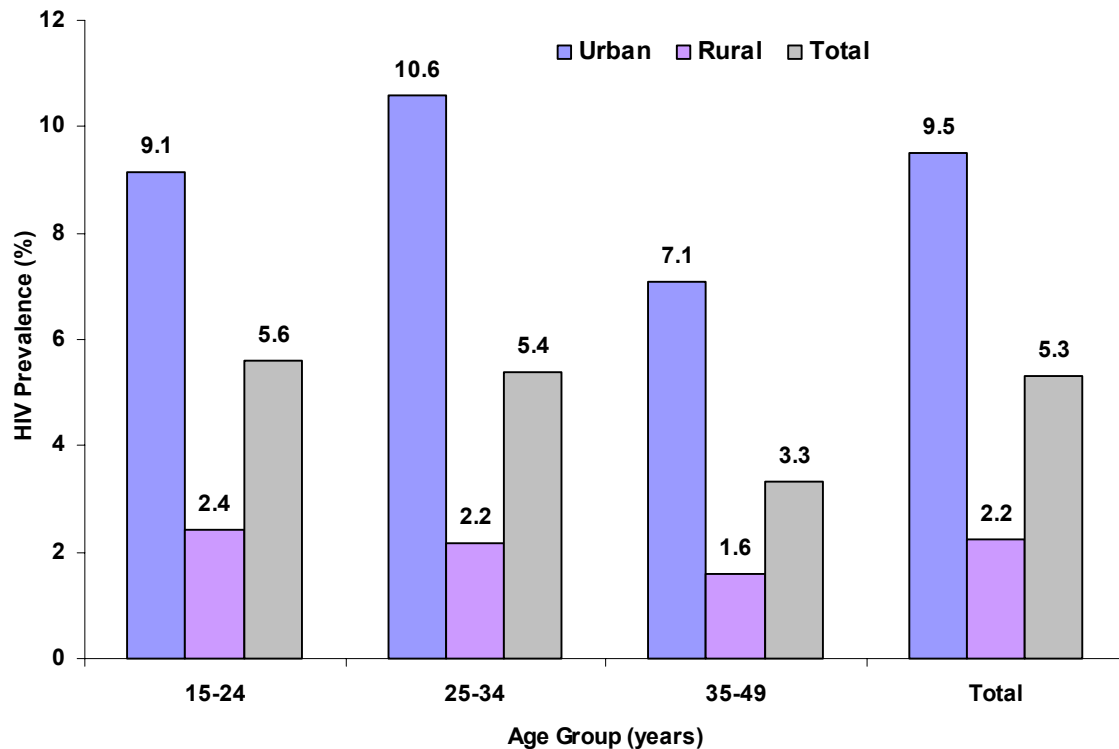
	Toke Clinic								4.6		2.2	2.9
	Chewaka HC											1.2
	Mesela HC											0.6
	Amaya											3.0
	Kokosa HC											0.5
Somali	Kelafo Hosp									1.8		
Beni. G.	Debate HC										5.0	5.0
	Kamashi HC											4.2
	Menge HC											0.9
SNNPR	Agam HC										3.4	1.0
	Attat Hosp					0.8	4.0	1.5	2.3	1.8		3.5
	Beneste		2*									
	Chencha Hosp										3.2	1.5
	Chiri HC										2.5	1.8
	Sheko HC										4.1	2.5
	Teza HC										2.3	1.5
	Gazer HC											1.7
	Bechi HC											1.2
Harari	Hasangay HC											0
Gambella	Pynido											2.8
Dire Dawa	Biyowale HC											1.0
	Dima Refugee Camp											12.9

NOTE: * = Population Based Survey
(s) = Surrounding areas

3.1.2. ANC-Based Unadjusted HIV Prevalence by Age and Setting

The overall unadjusted HIV prevalence among pregnant women attending ANC clinic was 5.3%. The unadjusted HIV prevalence for urban areas was 9.5% while it was 2.2% for rural areas in 2005. Women in the age group 15-24 years in rural areas and 25-34 years in urban areas had the highest prevalence rates. Of the total, the age group 15-24 had the highest prevalence of 5.6%. The median for the unadjusted site-level prevalence were 1.5% for all sites, 1.7% for rural, and 9.1% for urban.

Figure 3.1: Unadjusted HIV Prevalence by Age Group and Site Setting , 2005



3.1.3. Trends of HIV Prevalence at Urban Sites

There were 25 urban sites that had HIV prevalence data for 2002, 2003, and 2005. Chi-square tests for trend were applied at the site level. Of the 25 urban sites, 15 had declines in HIV prevalence. However, only 12 of the 15 sites had significant declining trends ($p < 0.05$). 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.

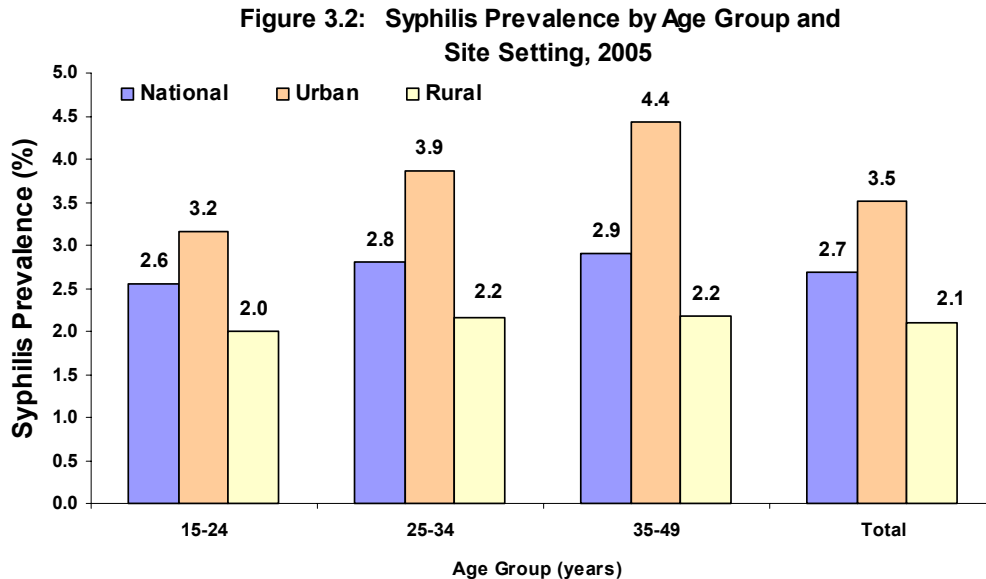
3.1.4. Trends of HIV Prevalence at Rural Sites

There were only seven rural sites that had HIV prevalence data for 2002, 2003, and 2005. Chi-square tests were applied at the site level. Of the 7 rural sites, 3 had declines in HIV prevalence. However, only 2 (Dangla and Haik) sites had significant declining trends ($p < 0.05$). The remaining 4 rural site showed increasing HIV prevalence trends. However, the increase was statistically significant in only one site (Attat). The overall HIV trend using data for all the 7 rural sites showed a statistically significant declining trend ($p = 0.026$).

3.2. ANC-BASED SYPILIS PREVALENCE

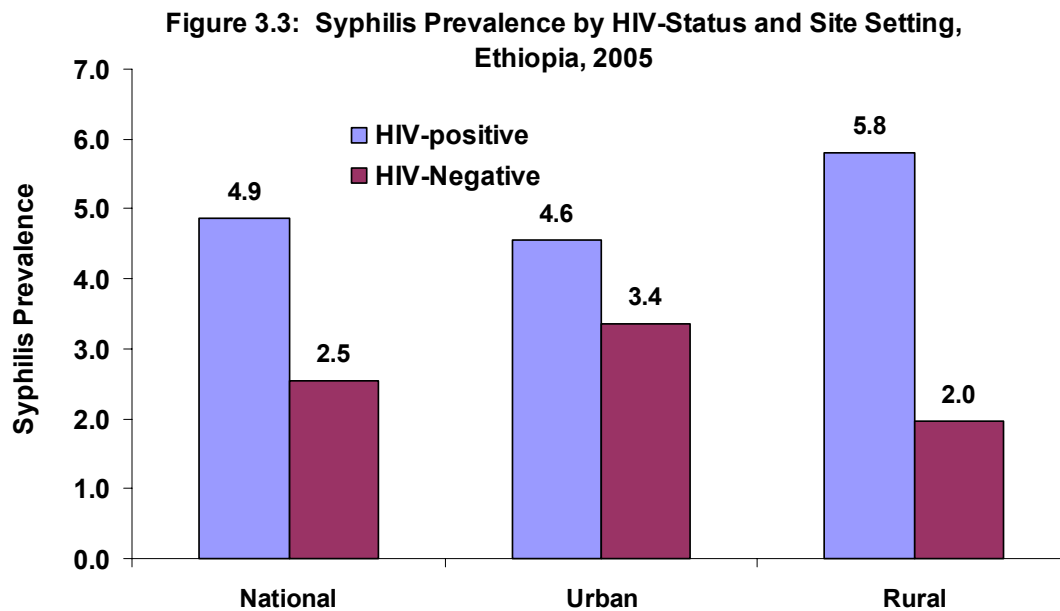
3.2.1. Prevalence of Syphilis by age and site setting

Of the total 28,316 clients who were tested for syphilis, 757 or 2.7% (3.5% urban and 2.1% rural) were found to be reactive for Rapid Plasma Reagin (RPR). At national level and at urban sites, those in the age group 35-49 years had the highest syphilis prevalence. The highest prevalence of syphilis at rural sites was observed for both the 25-34 and 35-49 years olds. In 2005, the prevalence of syphilis was relatively higher than corresponding figures in 2003 in all settings.



3.2.2. Prevalence of syphilis by HIV status and residence

The overall national prevalence of syphilis among HIV positive clients (4.9%) is almost twice that of HIV-negative clients (2.5%). HIV-positive clients in rural areas had a higher syphilis prevalence (5.8%) compared to those in urban areas (4.6%).



SECTION 4. HIV/AIDS ESTIMATES AND PROJECTIONS

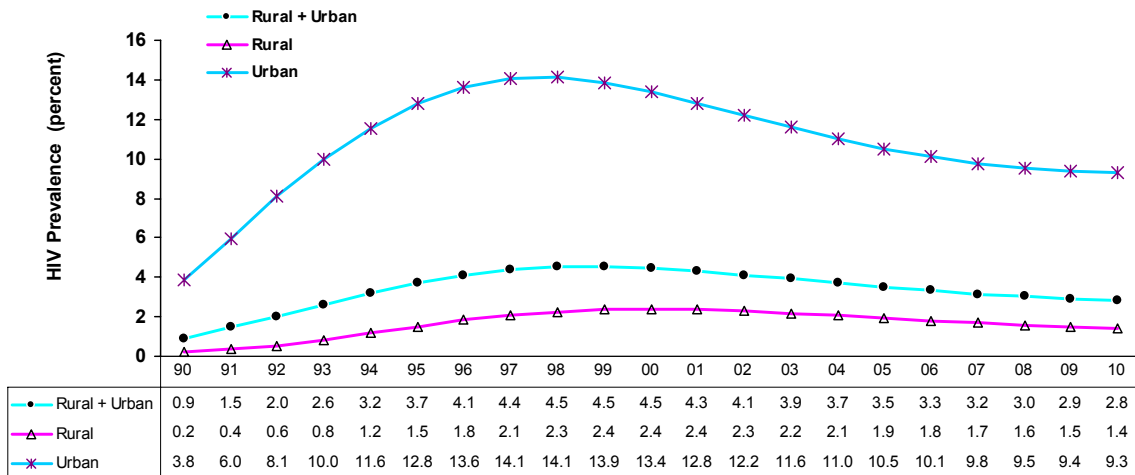
4.1. NATIONAL AND URBAN/RURAL ESTIMATES FOR ETHIOPIA

The following estimates were made using Spectrum and EPP software. Data from 79 (43 rural and 36 urban) ANC sites in 2005 and all available previous ANC site data from 1989 onwards were used.

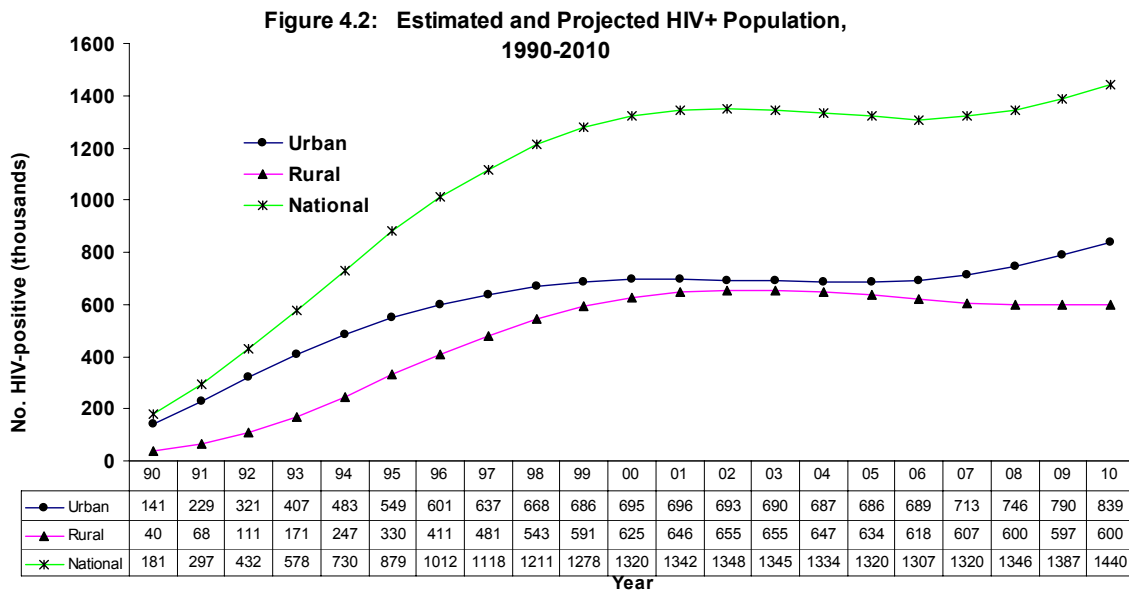
4.1.1 HIV Prevalence and Population

In 2005, the fitted national HIV prevalence was 3.5% (10.5% for urban and 1.9% for rural areas). The urban epidemic appeared to have stabilized between 1996 and 2000 and showed a slow and gradual decline since 2001. The rural epidemic peaked 1999-2001 and showed a relative stabilization following this peak. The combined HIV prevalence for the country has revealed a stabilizing trend following peaks 1998 – 2000; the number of people newly infected and dying are almost equal. Based on these estimates, a total of 1,320,000 (590,000 males and 730,000 females) persons were living with HIV/AIDS in the country in 2005.

**Figure 4.1 : Estimated and Projected HIV Prevalence By Year
Adult Population 15-49, Urban, Rural, and Ethiopia, 1990-2010**

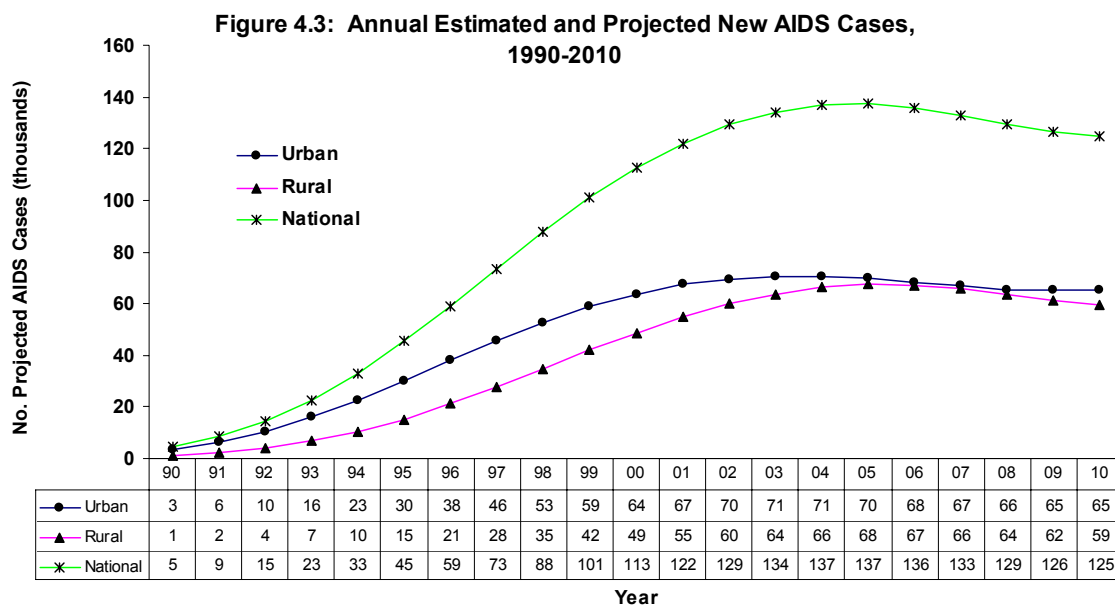


Year and Estimated HIV Prevalence Values in Percent



4.1.2. New AIDS cases by urban/rural Ethiopia

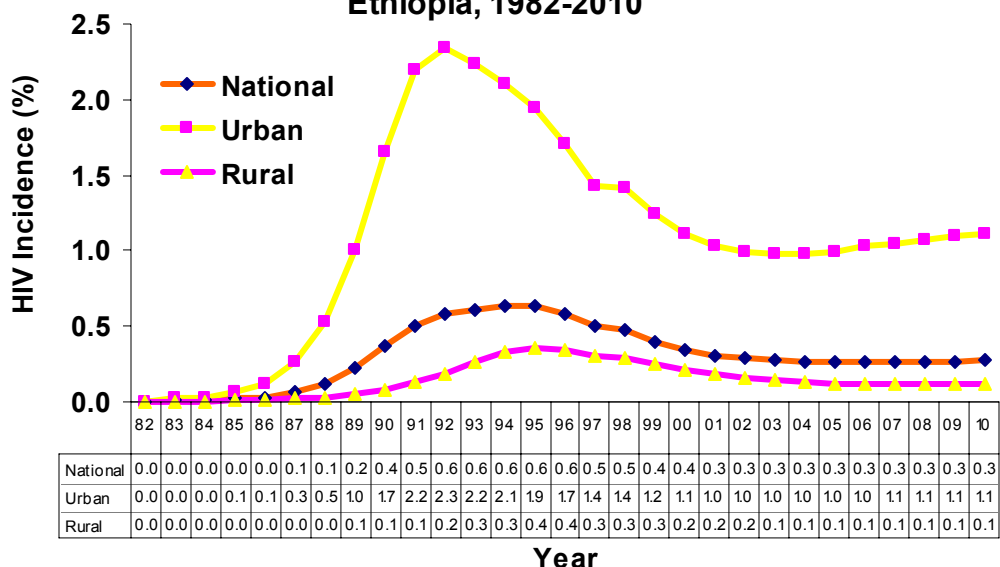
Based on these estimates, there were a total of 137,499 new AIDS cases in 2005. The number of new AIDS cases in urban areas peaked in 2003-2004 and declined 2005 onwards. The corresponding figure for rural Ethiopia began to approximate that in urban Ethiopia by 2004 and is expected to decline beginning 2006.



4.1.3. HIV Incidence Rates by Urban/Rural Ethiopia

The HIV incidence in Ethiopia in 2005 was estimated at 0.26% using SPECTRUM. It increased until 1992, then stabilized between 1992 and 1996, and started declining beginning 1996 until 2001. It has remained and is projected to remain stable 2001 onwards until 2010. The estimated HIV incidence for urban areas of Ethiopia in 2005 was 0.99%. It showed a rapid increase in the late 1980's and early 1990's peaking in 1992 followed by gradual decline until 2001. HIV incidence in urban areas has remained and is projected to remain stable 2001 onwards until 2010. The HIV incidence in rural Ethiopia for 2005 is estimated at 0.12%. The rate started to increase in the early 1990s and reached its highest levels in 1996. HIV incidence began declining in 1996 and has remained and is projected to remain stable 2003 onwards until 2010.

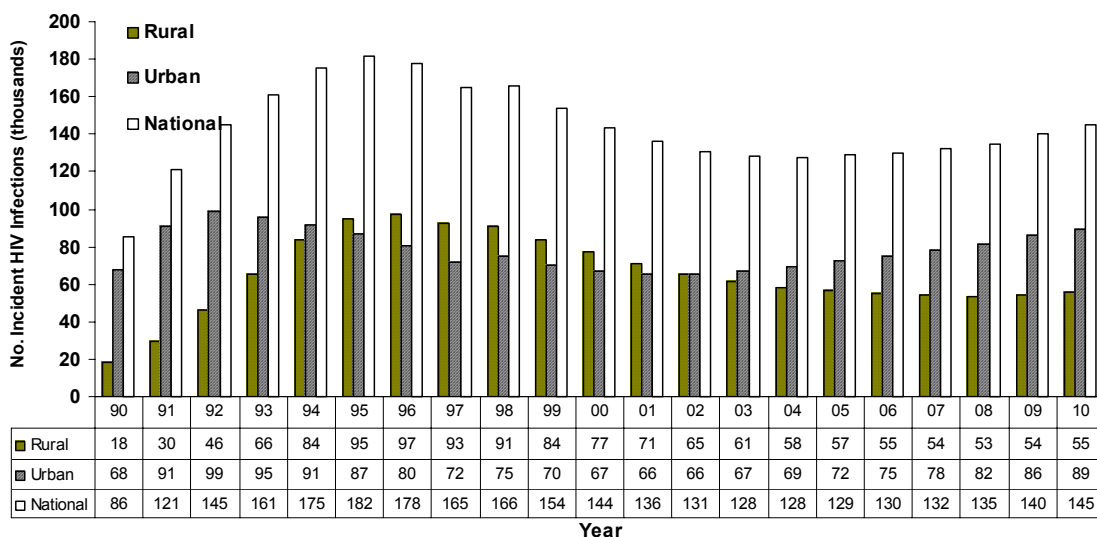
Figure 4.4: Estimated and Projected HIV Incidence, Ethiopia, 1982-2010



4.1.4. New HIV infections in urban/rural Ethiopia

The above incidence rates translate to a total of 128,922 new HIV infections (353 a day) in 2005 including 30,338 HIV positive births (mother-to-child infections). The number of new infections for urban areas had been greater than that of the rural areas until 1994; beginning 1995, the number of new infections in rural areas had surpassed that of urban areas until 2001. The number of new HIV infections in urban areas likely exceeded that in rural areas beginning in 2003 and this trend is expected to continue through 2010. The number of new infections in urban areas is expected to increase until 2010.

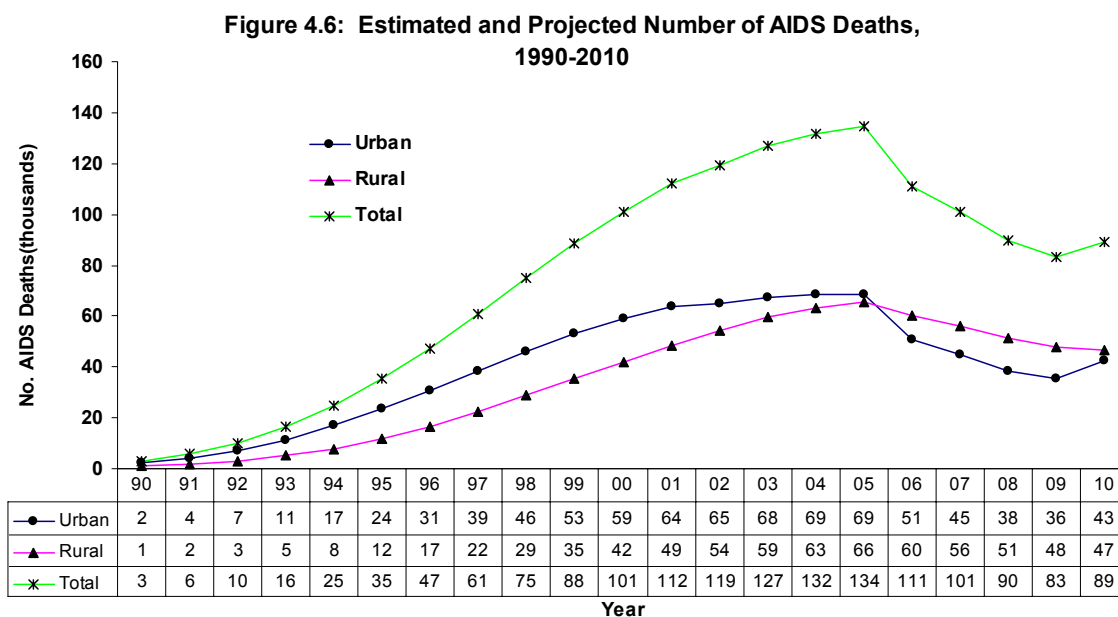
Figure 4.5: Estimated and Projected Number of New HIV Infections, 1990-2010



It was estimated that there were 105,675 (urban 45,982 and rural 59,693) HIV-infected pregnant women in 2005. The number of HIV positive pregnancies and HIV positive births are expected to decrease during 2005-2010 mainly due to the anticipated impact of the PMTCT program.

4.1.5. AIDS Deaths by age in urban/rural Ethiopia

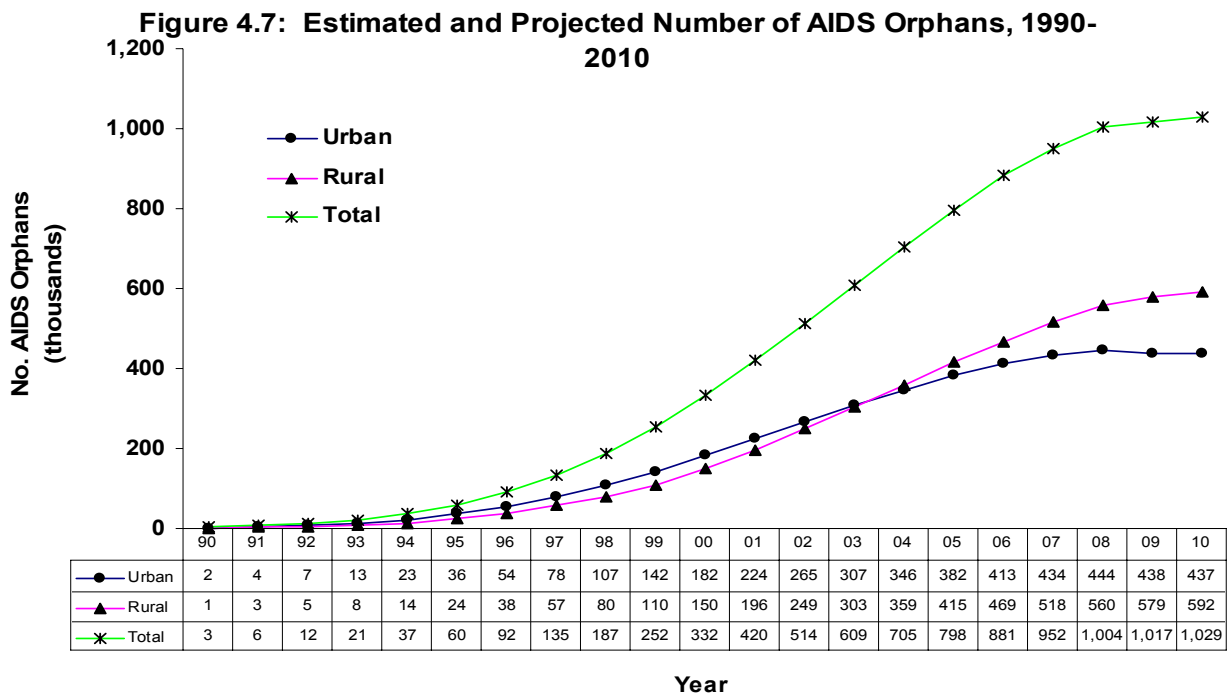
In 2005, it is estimated that there were 134,450 AIDS deaths (368 a day) in the country including 20,929 children. The number of adult AIDS deaths in urban Ethiopia is estimated to have been larger than that in rural Ethiopia until 2005 but were projected to be higher in rural Ethiopia from 2006 onwards due to the greater availability of ART in urban 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.



Of the estimated 20,929 AIDS deaths among children 0-14 years in 2005, 83.6% were estimated to have occurred among children under five years old and among these, 60% likely occurred in rural areas. Due to the planned PMTCT program and ART among children, the number of under-five AIDS deaths is expected to decline from 2006 onwards and is projected to be 41% lower in 2010 compared to 2005.

4.1.6. AIDS orphans

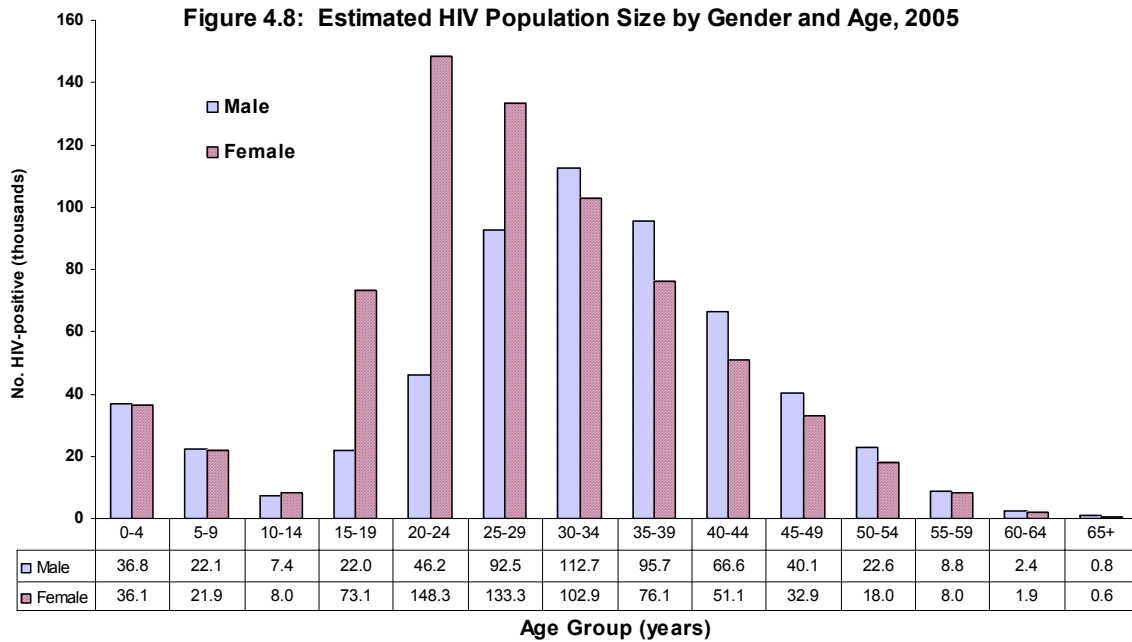
In 2005, it was estimated that there were a total of 4, 885,337 orphans aged 0-17 years. Of these, 744,100 were AIDS orphans. Of the total number of AIDS orphans, 529,777 were maternal, 464,506 paternal, and 250,195 dual orphans. For total AIDS orphans, the number of dual orphans is subtracted from the sum of maternal and paternal AIDS orphans. The estimated number of orphans in urban areas has been greater than that in rural areas up to 2003; however, beginning in 2004, the number of orphans in rural areas is expected to exceed that in urban areas. The total number of AIDS orphans in Ethiopia is projected to increase until 2010 although the rate of increase is expected to lessen due to the impact of the planned ART services.



4.2. ESTIMATES AND PROJECTIONS BY AGE AND GENDER

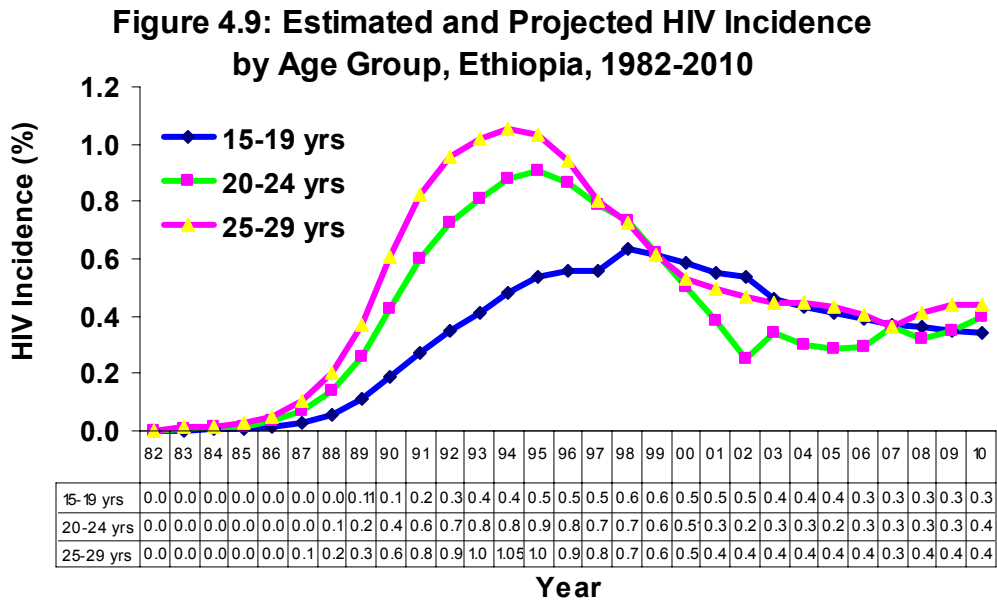
4.2.1 Age and Gender Distribution of People Living With HIV/AIDS

Spectrum default assumptions were used to estimate the distribution of various HIV/AIDS parameters by sex and age. The national HIV prevalence in 2005 is estimated to be 3.5%; 3 % among males and 4% among females. Of the estimated 1.32 million PLWHA in 2005, 730,000 (55%) were females. Females also accounted for 54.5% of AIDS deaths and 53.2% of new infections in 2005. In the age group 15-29 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.



4.2.2 Estimations of National HIV Incidence rates by age

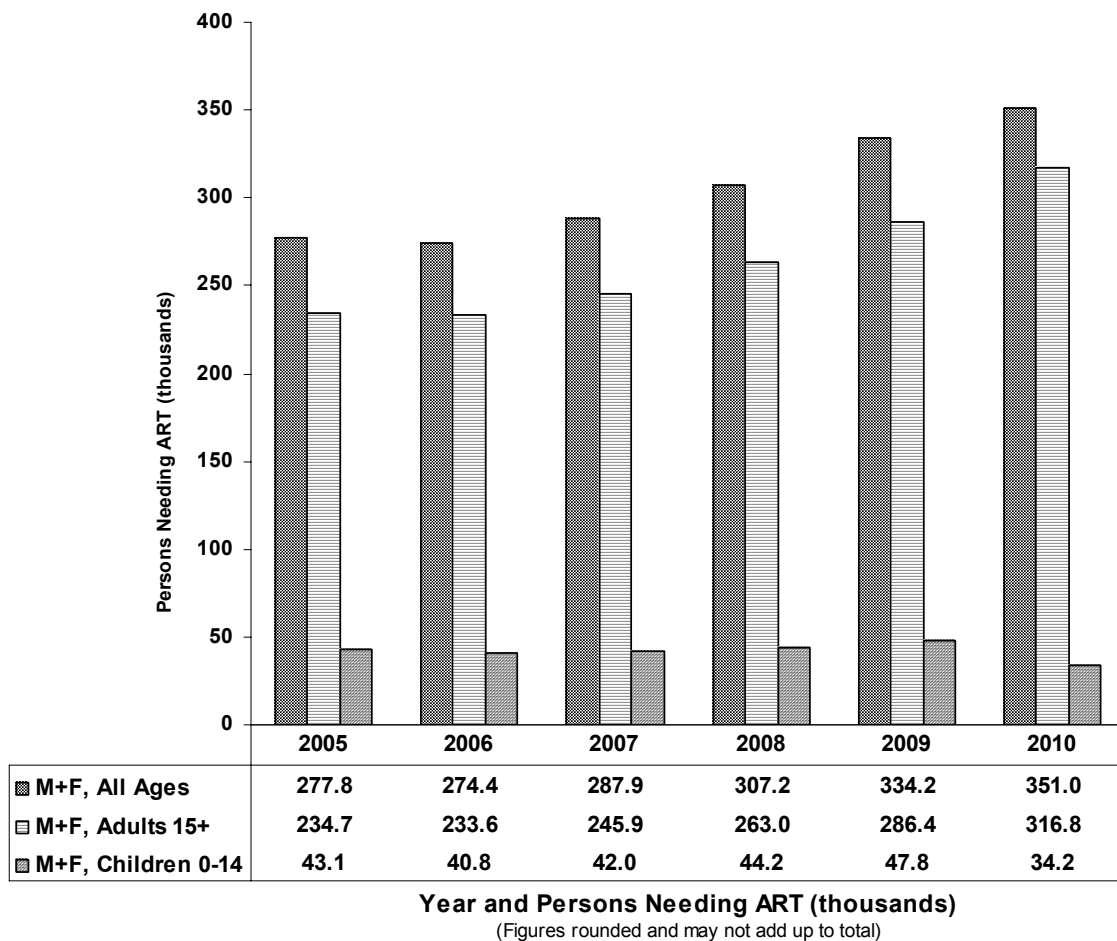
SPECTRUM default age patterns were used in making the estimations and projections of HIV incidence rates shown by age groups. The HIV incidence rate for those aged 15-19 years was estimated to have peaked in 1998 reaching 0.64% and then declined to 0.41% by 2005. It is expected to continue to remain stable 2006 onwards until 2010.



4.2.3 ART needs by age and gender

A total of 277, 757 persons including 213,306 (76.8%) adults in the age group 15-49 years and 43,055 (15.5%) children in the age of 0 to 14 years were estimated to require ART in 2005. Estimation and projection show that the total number of people requiring ART will increase by around 73,000 in 2010 from its level in 2005.

Figure 4.10: Projected Annual No. of Patients Needing ART, by Sex and Age Group, 2005- 2010

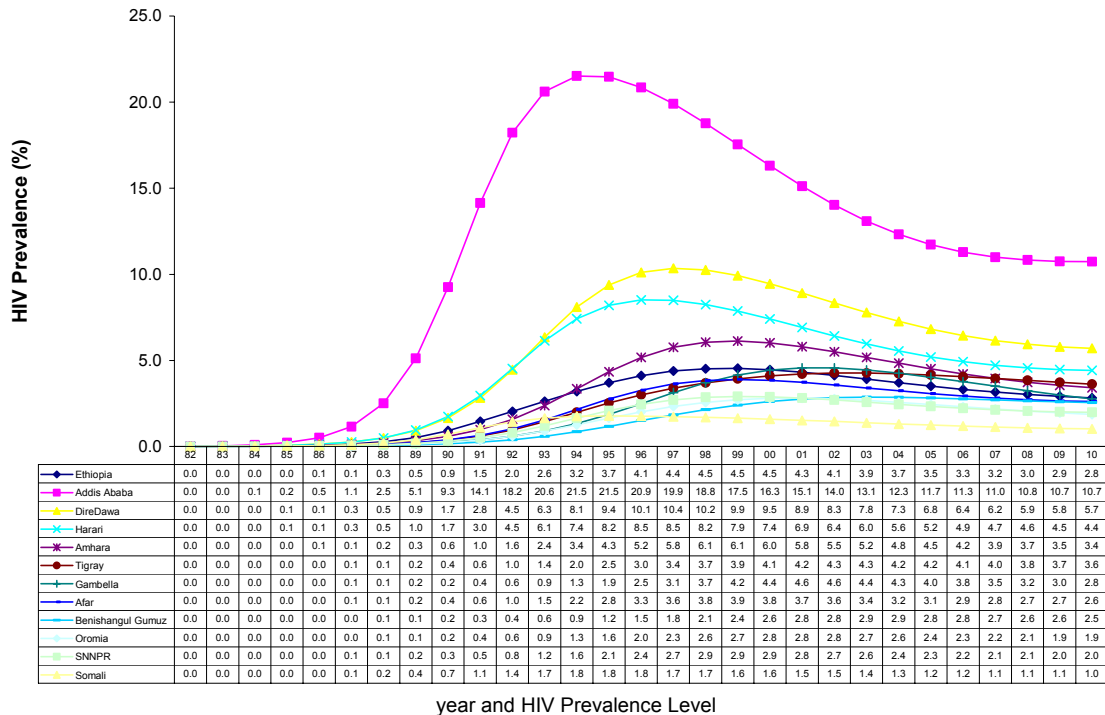


4.3. REGIONAL HIV/AIDS ESTIMATES AND PROJECTIONS

4.3.1 HIV prevalence, new AIDS Cases, new infections, and AIDS deaths

The regional HIV prevalence estimates for 2005 ranged from 1.2% in Somali to 11.7% in Addis Ababa. Due to the combined effects of both relatively high HIV prevalence and large population sizes, Amhara, Oromia, Addis Ababa, and SNNPR accounted for 86.6% of all PLWHA in 2005. Similarly, these four regions share 86.7% of the total estimated HIV positive pregnancies, 85.3% of new infections, 87.9% of new AIDS cases, and 88.2 % of AIDS deaths that occurred in Ethiopia in 2005.

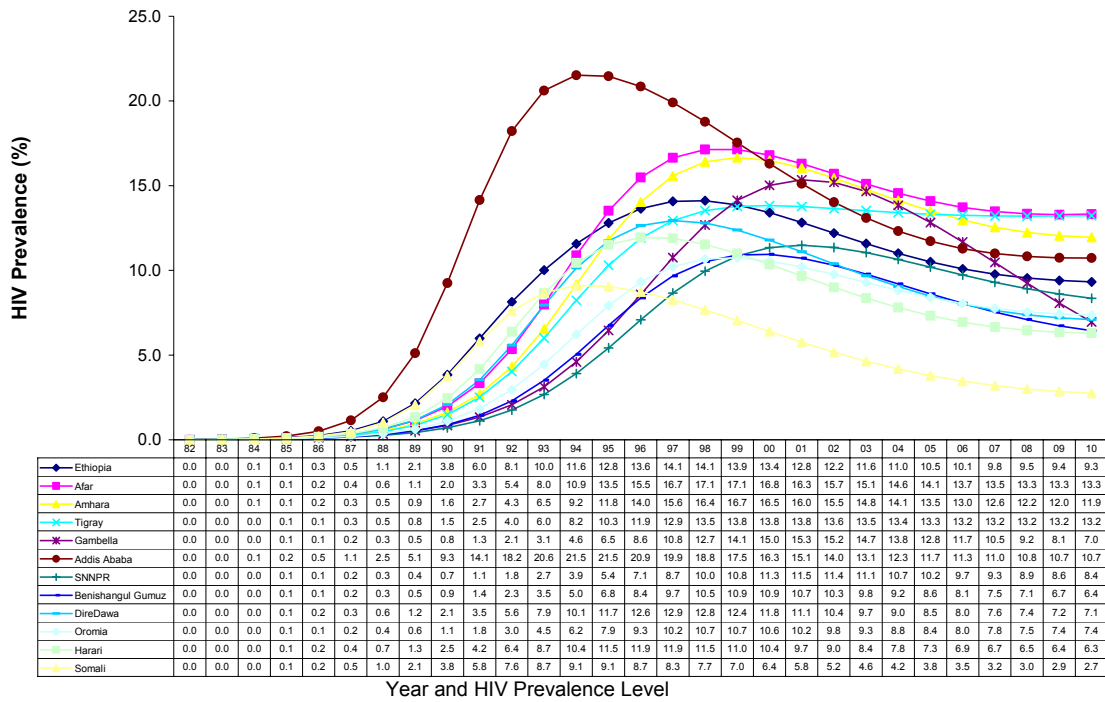
Figure 4.11: Estimated and Projected HIV Prevalence, Adult Population 15 - 49, Ethiopia and Regions, 1982 - 2010



4.3.2. Urban HIV/AIDS estimates by region

The regional prevalence estimates for urban areas in 2005 range from 3.8% in Somali to 14.1% in Afar. However, due to the relatively large population sizes and high HIV prevalence rates in their respective urban areas, areas 84.6% of PLWHA for urban Ethiopia live in only four of the regions (30.2% in Addis Ababa, 22.7% in Amhara, 22.2% in Oromia and 9.5% in SNNPR) in 2005. The HIV Incidence rates for the urban areas of regions range from 0.33% in Somali region to 1.72% in Afar Region. However, because of their relatively large population sizes and high HIV incidence rate, Addis Ababa and urban areas of Amhara Oromia, and SNNPR share 83.4% of the total estimated HIV positive pregnancies, and 83.6 % of new infections of Urban Ethiopia in 2005.

Figure 4.12: Estimated and Projected HIV Prevalence, Adult Population 15 - 49, Urban Ethiopia and Regions, 1982 - 2010



4.3.3. Rural HIV/AIDS estimates by region

The rural regional HIV prevalence estimates for 2005 ranged from 0.6% in Harari to 3.2% in Amhara region. However, due to the relatively large population size and the high HIV prevalence rates, Amhara, Oromia, SNNPR, and Tigray accounted for significant proportion of rural PLWHA (94.4%), new AIDS cases (95.2%), AIDS deaths (95.3%), and HIV positive pregnancies (95.1%).

Figure 4.13: Estimated and Projected HIV Prevalence, Adult Population 15 - 49, Rural Ethiopia and Regions, 1982 - 2010

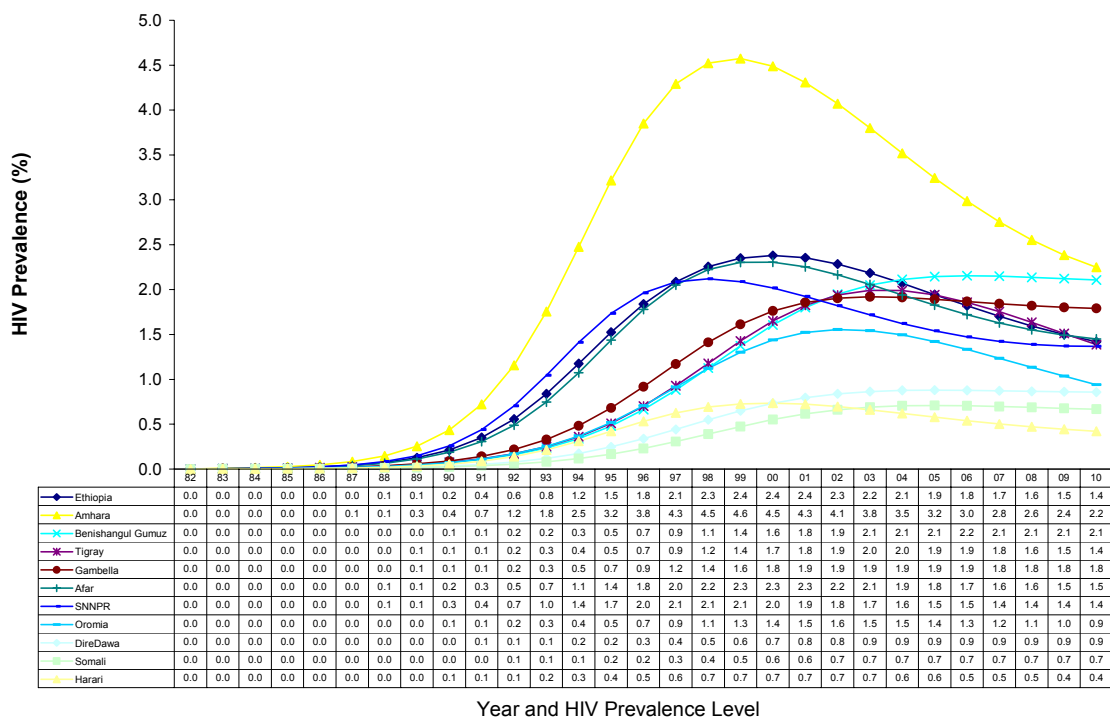


Table 4.1: Regional HIV/AIDS related estimates, 2005

REGION		Adult HIV Prevalence (%)	HIV Prevalence Confidence Limit	Adult HIV Incidence (%)	HIV Positive Pregnancies	HIV Positive Births	Needing ART	AIDS Orphans	Total Orphans
Tigray	Total	4.2	2.7 - 5.6	0.38	7,767	2,256	16,341	35,188	286,112
	Urban	13.3	8.7 - 18	1.61	4,327	1,237	10,471	23,011	59,691
	Rural	1.9	1.3 - 2.6	0.13	3,440	1,019	5,870	12,177	226,421
Afar	Total	3.1	2 - 4.1	0.22	1,549	452	4,727	10,089	81,121
	Urban	14.1	9.2 - 19	1.72	572	163	1,944	4,039	8,915
	Rural	1.8	1.2 - 2.5	0.14	977	289	2,783	6,050	72,206
Amhara	Total	4.5	2.9 - 6.1	0.30	38,142	11,175	97,588	293,169	1,373,278
	Urban	13.5	8.8 - 18.2	1.51	11,806	3,375	31,846	77,956	171,590
	Rural	3.2	2.1 - 4.4	0.22	26,336	7,800	65,742	215,213	1,201,688
Oromia	Total	2.4	1.6 - 3.3	0.17	29,302	8,547	63,631	156,742	1,661,831
	Urban	8.4	5.5 - 11.3	0.92	12,732	3,640	31,018	87,769	231,855
	Rural	1.4	0.9 - 1.9	0.10	16,570	4,907	32,613	68,973	1,429,976
Somali	Total	1.2	0.8 - 1.7	0.10	2,312	616	5,813	21,991	226,673
	Urban	3.8	2.5 - 5.1	0.33	1,127	295	3,494	17,525	43,182

	Rural	0.7	0.5 - 1	0.07	1,185	321	2,319	4,466	183,491
Benishangul Gumuz	Total	2.8	1.8 - 3.8	0.24	798	228	1,675	3,078	41,425
	Urban	8.6	5.6 - 11.6	0.74	226	59	610	1,488	4,460
	Rural	2.1	1.4 - 2.9	0.24	572	169	1,065	1,590	36,965
SNNPR	Total	2.3	1.5 - 3.1	0.18	16,226	4,745	36,802	102,806	985,717
	Urban	10.2	6.6 - 13.8	1.04	5,819	1,663	12,689	28,245	82,634
	Rural	1.5	1 - 2.1	0.15	10,407	3,082	24,113	74,561	903,083
Gambella	Total	4.0	2.6 - 5.4	0.21	356	103	1,067	1,699	12,798
	Urban	12.8	8.3 - 17.3	0.81	215	61	680	1,023	2,839
	Rural	1.9	1.2 - 2.6	0.18	141	42	387	676	9,959
Harari	Total	5.2	3.4 - 7	0.44	276	67	1,172	3,008	12,038
	Urban	7.3	4.8 - 9.9	0.76	254	61	1,121	2,875	6,556
	Rural	0.6	0.4 - 0.8	0.04	22	6	51	133	5,482
Addis Ababa	Total	11.7	7.6 - 15.8	1.40	7,995	1,920	45,753	109,130	179,381
	Urban	11.7	7.6 - 15.8	1.40	7,995	1,920	45,753	109,130	179,381
Direedawa	Total	6.8	4.4 - 9.2	0.58	952	229	3,188	7,188	24,963
	Urban	8.5	5.5 - 11.4	0.89	909	218	3,106	7,003	19,550
	Rural	0.9	0.6 - 1.2	0.09	43	11	82	185	5,413
ETHIOPIA	Total	3.5	2.3 - 4.7	0.26	105,675	30,338	277,757	744,088	4,885,337
	Urban	10.5	6.8 - 14.2	0.99	45,982	12,692	142,732	360,064	810,653
	Rural	1.9	1.4 - 2.5	0.12	59,693	17,646	135,025	384,024	4,074,684

Table 4.2: Regional HIV/AIDS related estimates, 2005 (Continued)

REGION		PLWHA		New HIV Infections		New AIDS Cases		Annual AIDS Deaths	
		All Ages	Children	All ages	Children	All Ages	Children	All Ages	C
Tigray	Total	88,498	7,998	10,617	2,256	7,938	1,473	7,372	
	Urban	55,748	4,827	7,213	1,237	5,096	835	4,821	
	Rural	32,750	3,171	3,404	1,019	2,842	638	2,551	
Afar	Total	22,287	1,996	2,110	452	2,358	322	2,316	
	Urban	9,489	750	1,014	163	961	118	941	
	Rural	12,798	1,246	1,096	289	1,397	204	1,375	
Amhara	Total	444,560	51,632	39,552	11,175	48,945	8,124	48,251	
	Urban	155,322	15,139	16,136	3,375	15,679	2,407	15,106	
	Rural	289,238	36,493	23,416	7,800	33,266	5,717	33,145	
Oromia	Total	318,382	33,213	30,979	8,547	31,211	5,774	29,445	
	Urban	152,118	16,264	16,484	3,640	15,250	2,589	14,667	
	Rural	166,264	16,949	14,495	4,907	15,961	3,185	14,778	
Somali	Total	28,560	3,035	2,865	616	2,895	469	2,890	
	Urban	15,062	2,060	1,320	295	1,785	270	1,895	
	Rural	13,498	975	1,545	321	1,110	199	995	
Benishangul Gumuz	Total	9,151	739	1,028	228	810	145	742	
	Urban	2,923	256	255	59	301	42	287	
	Rural	6,228	483	773	169	509	103	455	
SNNPR	Total	175,877	20,305	18,496	4,745	18,320	3,345	17,866	
	Urban	65,380	6,324	6,769	1,663	6,151	1,109	5,685	
	Rural	110,497	13,981	11,727	3,082	12,169	2,236	12,181	
Gambella	Total	5,420	380	431	103	521	68	483	
	Urban	3,356	232	222	61	332	41	307	

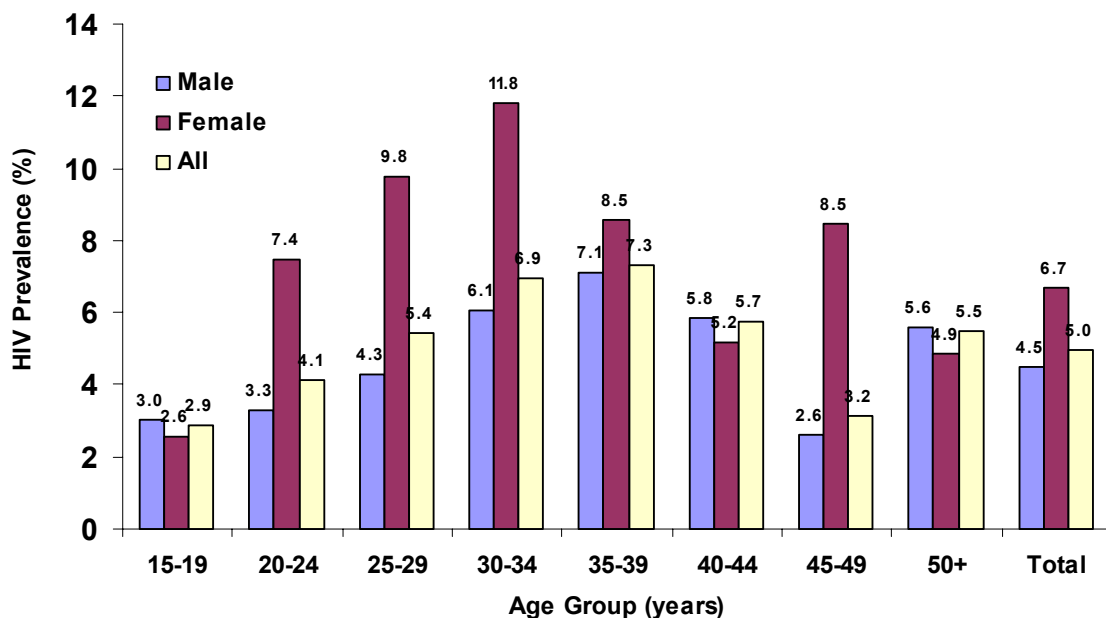
	Rural	2,064	148	209	42	189	27	176
Harari	Total	5,236	405	490	67	570	55	563
	Urban	5,005	380	471	61	545	51	538
	Rural	231	25	19	6	25	4	25
Addis Ababa	Total	207,270	13,707	20,940	1,920	22,394	1,758	23,045
	Total	207,270	13,707	20,940	1,920	22,394	1,758	23,045
Direedawa	Total	14,554	1,176	1,414	229	1,537	174	1,477
	Urban	14,105	1,139	1,365	218	1,498	167	1,441
	Rural	449	37	49	11	39	7	36
ETHIOPIA	Total	1,319,795	134,586	128,922	30,338	137,499	21,707	134,450
	Urban	685,778	61,078	72,189	12,692	69,992	9,387	68,733
	Rural	634,017	73,508	56,733	17,646	67,507	12,320	65,717

SECTION 5: REPORTS FROM OTHER DATA SOURCES

5.1 HIV PREVALENCE AMONG BLOOD DONORS

Data from 28,539 (22,261 males and 6,278 females) blood donors were reported from blood transfusion centers of 8 regions in 2005. The overall HIV prevalence among blood donors was 5.0% (4.5% among males and 6.7% among females). The prevalence for those aged 15-19 years was 2.9%. The highest prevalence rate was registered for donors aged 30-39 years. The prevalence among donors in Addis Ababa Red Cross, which constituted for about 62.8% of all donors in the country, was 3.7%. The HIV prevalence among blood donors in Addis Ababa for 2005 is less than that in 2003 (6.4%).

Figure 5.1: HIV Prevalence in Blood Donors by Age and Gender, 2005



5.2. HIV PREVALENCE AMONG VCT CLIENTS BY GENDER AND REGION

The Annual report for Ethiopian Fiscal year 1998 (July 1, 1997 – June 30, 1998 E.C.) indicates that a total of 564,351 VCT clients received counselling and testing services. The proportion of males and females was nearly equal; 38.2% were reported from Addis Ababa. The overall HIV prevalence among VCT clients was 13.7% (15.7% among females and 11.6% among males). The lowest HIV prevalence was reported from Benishangul Gumuz (8.2%) and the highest from Somali region (49.1%).

Table 5.1: Voluntary Testing and Counselling Clients by Gender and Regional Distribution, Annual Report Ethiopian Fiscal Year 1998 (2005/2006)

Region	Male			Female			Total		
	Tested	HIV+ve	%	Tested	HIV+ve	%	Tested	HIV+ve	%
Tigray	19725	2619	13%	13323	1822	13.7%	33048	4441	13.4%
Afar	710	212	29%	716	279	39.0%	1426	491	34.4%
Amhara	62341	8564	13%	54642	9591	17.6%	116983	18155	15.5%
Oromia	53175	4694	8.8%	42096	6513	15.5%	95271	11207	11.8%
Somali	145	71	49.0%	197	97	49.2%	342	168	49.1%
SNNPR	40867	3047	7.5%	34695	3770	10.9%	75562	6817	9.0%
Benishangul G.	5108	334	6.5%	4212	427	10.1%	9320	761	8.2%
Harari	2139	373	17.4%	2628	606	23.1%	4767	979	20.5%
Gambela	565	136	24.1%	374	106	28.3%	939	242	25.8%
Dire Dawa	5444	1057	19.4%	5735	1632	28.5%	11179	2689	24.1%
Addis Ababa	90636	11396	12.6%	124878	19802	15.9%	215514	31198	14.5%
Total	280855	32503	11.6%	283496	44645	15.7%	564351	77148	13.7%

5.3 PMTCT Program Report

The Annual report for Ethiopian Fiscal year 1998 (July 1, 1997 – June 30, 1998 E.C.) indicates that a total of 52,428 pregnant women were tested for HIV. Among these, 4,172 (8%) tested HIV positive. Of these, 2,208 (52.9%) of the pregnant women and 1,341 (32%) of their infants received nevirapine for PMTCT.

Table 5.2: PMTCT Clients by Regional Distribution, Annual Report, Ethiopian Fiscal Year 1998 (2005/2006)

Region	ANC Clients during the 12 months	Pre-test counsel ed	Pregnant women tested for HIV	Pregnant women tested positive	Women received NVP	% received NVP	No. HIV babies received NVP	Women received counseling on infant feeding
Tigray	34077	13648	4493	305	135	44.3%	95	264
Afar	3164	1862	426	37	22	59.5%	16	32
Amhara	46038	19110	9251	787	373	47.4%	207	644
Oromia	46331	15499	9440	682	249	36.5%	158	532
Somali	2604	327	252	42	25	59.5%	2	26

SNNPR	44524	8809	7317	291	119	40.9%	69	273
Benishangul	2311	1533	371	66	33	50.0%	42	41
Harari	1363	841	358	23	7	30.4%	5	19
Gambela	2519	237	79	19	4	21.1%	4	28
Dire Dawa	4023	1159	900	86	34	39.5%	28	86
Addis Ababa	135904	28649	19541	1834	1207	65.8%	715	1948
Total	322858	91674	52428	4172	2208	52.9%	1341	3893

5.4 ART Program Report

The government of Ethiopia launched the free ART program in January of 2005 and the “Accelerating Access to HIV/AIDS Treatment in Ethiopia, Road map 2004-2006” in June of 2005. The Road Map [targets to put 100,000 persons on ART by the end of 2006](#). By the end of July, 2006, 45,595 patients had ever started on ART at 132 facilities across the country. Of these, 35,460 were on treatment currently and 18,384 were enrolled in the first six months of 2006. Of the people ever started on ART, 47 % were adult males >14 years of age, 48% were adult females >14 years of age, and 4% were children. Among the children ever started on ART, 69% were among ages 5-14 years, 4% were infants less than 18 months of age, and 27% were children 19-59 months of age.

Table 5.3 Number of HIV/AIDS patients ever started on ART by age, gender and by the time of the start of ART, end of July, 2006

Age and Gender of patients	Time ART Started	
	Ever Started	Started in the first six months of 2006 (thru end of July)
Infants-18 months	70	40
Children 19-59 months	452	272
Children 5-14 years	1171	765
non-pregnant Females > 14 years	21927	7,663
Pregnant women	148	119
Males >14 years	21573	9,079
Unspecified	254	446
Total	45,595	18,384

Table 5.4. The number of People on chronic care and ART and number of ART sites by region, end of July, 2006

Region	Number of ART Sites	Chronic Care	Ever started on ART	Currently on ART
Amhara	18	13,679	9,495	7,431
Oromiya	23	11,776	6,450	5,314
SNNPR	25	5,188	2,829	2,342
Tigray	9	6,233	3,286	2,517
Afar	3	453	256	144
Benishangul-Gumuz	2	648	360	330
Harari	2	1,233	717	618
Dire Dawa	2	1,387	908	750
Somali	2	434	288	192
Gambella	1	374	134	140
Addis Ababa	32	28,024	18,012	13,441
Uniformed Forces	13	4,111	2,860	2,221
Total	132	73,540	45,595	35,460

5.5. FINDINGS OF EDHS-2005

The second Ethiopia Demographic Health Survey (EDHS) was conducted by the Central Statistics Agency with the support of ORC Macro in 2005. The first was conducted in 2000. Unlike the first, the 2005 survey included HIV testing for the first time. The behavioral component of the survey collected information on the HIV/AIDS knowledge, attitudes, and behaviors (including HIV counseling and testing behavior) for the general population and HIV/AIDS knowledge and patterns of sexual activity among young people. All women aged 15-49 and all men aged 15-59 living in the household that were selected for the survey were eligible for HIV testing. A total of 11,050 adults (83% of the 7,142 eligible women and 76% of the 6,778 eligible men) were tested for HIV.

The 2005 EDHS data indicated an adult HIV prevalence of 1.4%. The HIV prevalence in women was 1.9% and that for men was 0.9% and the female-to-male prevalence ratio was 1:2.1. The peak HIV prevalence age among women is seen in the late 30s and that for men in the early 40s. The table below shows the regional variation in HIV prevalence. The highest prevalence was found in Gambella (6 %) while SNNPR unexpectedly had the lowest prevalence (0.2 %).

The following table illustrates the 2005 EDHS and ANC round of HIV test results by region. As the methodologies used for the surveys are different, they are not meant for comparison.

Table 5.5: HIV prevalence results from EDHS and the National Antenatal Care Surveillance System

Region	2005 EDHS			2005 ANC round		
	HIV Prevalence	Number of Sample points	Unweighted number of adults tested	Estimated HIV Prevalence	Number of sites	Number of pregnant women tested
Tigray	2.1	50	1038	4.2	9	3,111
Afar	2.9	35	528	3.1	2	763
Amhara	1.7	80	1,636	4.5	17	6,961
Oromiya	1.4	83	1,924	2.4	20	7,185
Somali	0.7	34	451	1.2	2	607
Benishangul Gumuz	0.5	30	721	2.8	5	1,615
SNNPR	0.2	84	1,819	2.3	12	4,119
Gambella	6.0	29	638	4.0	2	506
Harari	3.5	30	625	5.2	2	569
Addis Ababa	4.7	50	1,192	11.7	3	1,939
Dire Dawa	3.2	30	478	6.8	5	872
Total	1.4	534	11,050	3.5	79	28,247

WHO/UNAIDS guidelines for measuring national HIV prevalence in population-based surveys indicate that population-based surveys are expensive and logistically difficult to carry out and can not be conducted frequently. ANC sentinel surveillance on the other hand can be conducted annually or biannually to facilitate trend observations and track the impact of the epidemic. Despite its limitations, population based surveys can provide estimates of HIV prevalence for the general population as well as for different subgroups, such as urban and rural residents, women and men, different age categories and regions.

The EDHS report has indicated issues for further investigation, particularly for HIV prevalence for SNNPR where the EDHS provided estimates that significantly diverged from the ANC based estimates. It is hoped that these investigations will greatly improve the understanding of the HIV epidemic and the factors associated with it in Ethiopia. The detailed findings of the DHS data are published in a separate report.

5.6 PRELIMINARY FINDINGS OF THE 2005 ROUND OF THE ETHIOPIAN BEHAVIOURAL SURVEILLANCE SURVEY (BSS).

The first Behavioural Surveillance Survey (BSS) in Ethiopia was conducted in 2002 to complement the ANC-based and other HIV surveillance systems instituted nationally so

that it will serve as a monitoring and evaluation tool designed to track trends in HIV/AIDS- related knowledge, attitudes, behaviors and practices among sub-populations at different levels of risk of HIV infection such as female sex workers (FSW), uniformed services, long distance drivers, pastoralists, and youth.

The 2nd BSS round two was conducted in 2005 in all regions of the country constituting a wider representative group than the first round done in 2001. It covered nine national regional states and the sub-population surveyed includes representative samples of uniformed services (defense and police forces), FSWs, road construction workers (RCWs), long distance truck drivers (LDTDs), inter-city bus drivers (ICBDs), teachers, in-school youth (ISY), ANC catchments area population, factory workers, pastoralists and cross border community.

Summary findings from the BSS round two revealed that more than 98 % of the study population were aware of HIV/AIDS except in pastoralists (80%), a comparable finding to that in BSS round one. Almost all the study population knew at least one prevention method; about 86% knew two of the three preventive methods, and nearly 55 % knew all three. Knowledge of prevention methods increased with increasing exposure to HIV/AIDS messages in various media sources (radio, TV, and printed media). The study also indicated increased knowledge with increasing education level, especially among In-School Youth, except TVET 10⁺¹ and 10⁺² category which showed no change with increasing educational level. Among the pastoralists, 29% knew all three prevention methods, more than in BSS round one (18%).

Misconceptions about HIV transmission of HIV from person to person, especially local misconceptions like “eating uncooked egg laid by a chicken that has swallowed condom could transmit HIV” and “eating raw meat prepared by an HIV-infected person could transmit the virus” still remain high in almost all groups. The common misconceptions are more than 40% in almost all study groups except in In-School Youth where it was 10%. The study also showed that misconception about HIV/AIDS is high irrespective of level of knowledge.

Measuring comprehensive knowledge of the respondents by taking those who knew all three preventive methods and with no misconceptions is found to be low (less than 20 percent) which is in agreement with UNAIDS reports 2005. Comprehensive knowledge seems to increase along with increase in educational level.

Knowledge on male condom remains high in all the target groups. Condom use among FSWs is found to be higher than the other adult target groups (more than 98% of the respondents reported that they used condoms consistently in the last 12 months). This study also showed that significant proportion of FSWs reported that they had heard of the female condoms (more than three quarter) compared to the finding in round one which was only 44%. Condom accessibility and cost are found to be no barriers to condom use among FSWs as in most of the other groups. On the other hand, as in the first round, it is indicated that significant proportion of respondents who have had multiple partners in the last 12 months do not always use a condom, especially with non-regular partners, though

they know condoms protect from HIV infection. Commercial sex is found to be practiced more among mobile groups like LDTDs, RCWs, and the military, whereas, non-commercial sex is relatively high among sexually active In-School Youth (more than one out of ten In-School Youth had ever had sexual intercourse, of which 60% had sexual intercourse in the last 12 months) and condom use was found to be less with non-commercial sex partners than with commercial partners among the In-School Youth.

The proportion of those who reported ever had HIV test was higher in BSS round two compared to BSS round one (FSW, 26% vs. 7.7%; In-School Youth, 9.3% vs. 3.3%; Military, 50.8% vs. 28%) respectively.

As in BSS round one, own risk perception is low in almost all target groups, and especially those respondents who had unprotected sex with non-marital partners do not feel that they are at risk. More than three quarter of the FSWs reported 'no or low chance' of acquiring HIV and the main reason they gave was consistent use of condoms.

The preliminary results indicate that though knowledge of at least one preventive method is high across all target groups, there is still low comprehensive knowledge and persisting common misconceptions. One or more stigmatizing attitude prevailed in almost all target groups particularly among bus drivers, military, ANC surveillance site groups and teachers.

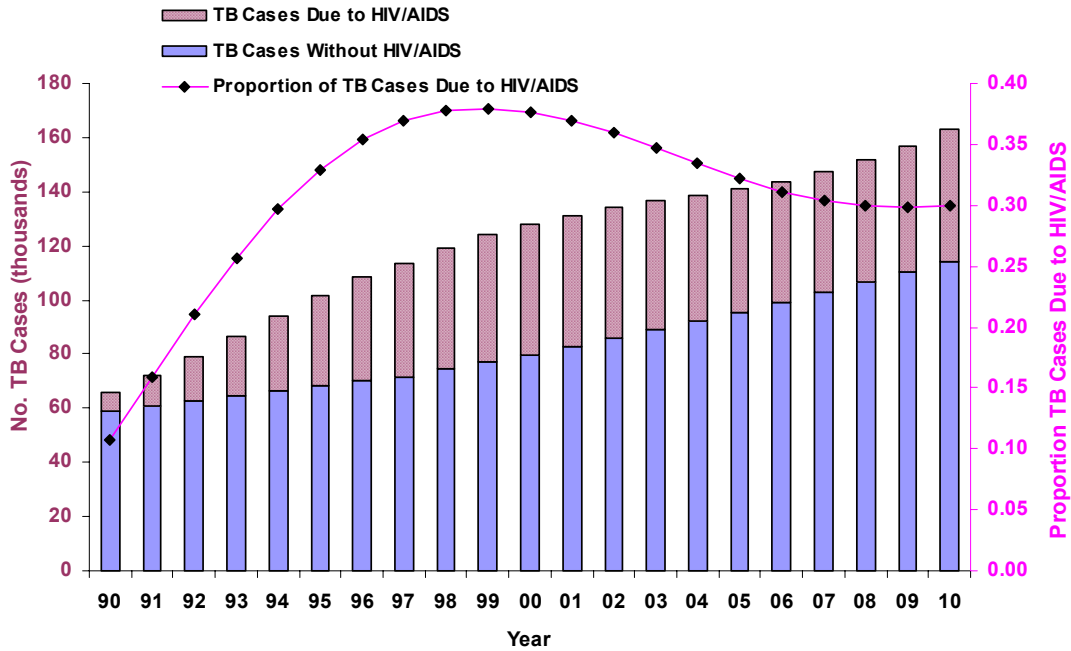
SECTION 6. IMPACTS OF HIV/AIDS

HIV/AIDS has had a detrimental socio-economic impact on Ethiopia. Findings from the ANC-based sentinel surveillance and studies conducted at schools, workplaces, and among orphans all indicate similar results. Some of the key impact analysis from the 2005 ANC-based surveillance is presented below.

6.1. IMPACT OF HIV/AIDS ON THE ANNUAL NUMBERS OF TB CASES

As shown on Figure 6.1, HIV/AIDS accounted for about 32% of the estimated 141,000 total TB cases in 2005. The effect of HIV on TB is expected to continue from 2005 through 2010. In the figure, bars indicate the estimated number of TB cases and the line denotes the proportion of TB cases due to AIDS per 100 TB cases

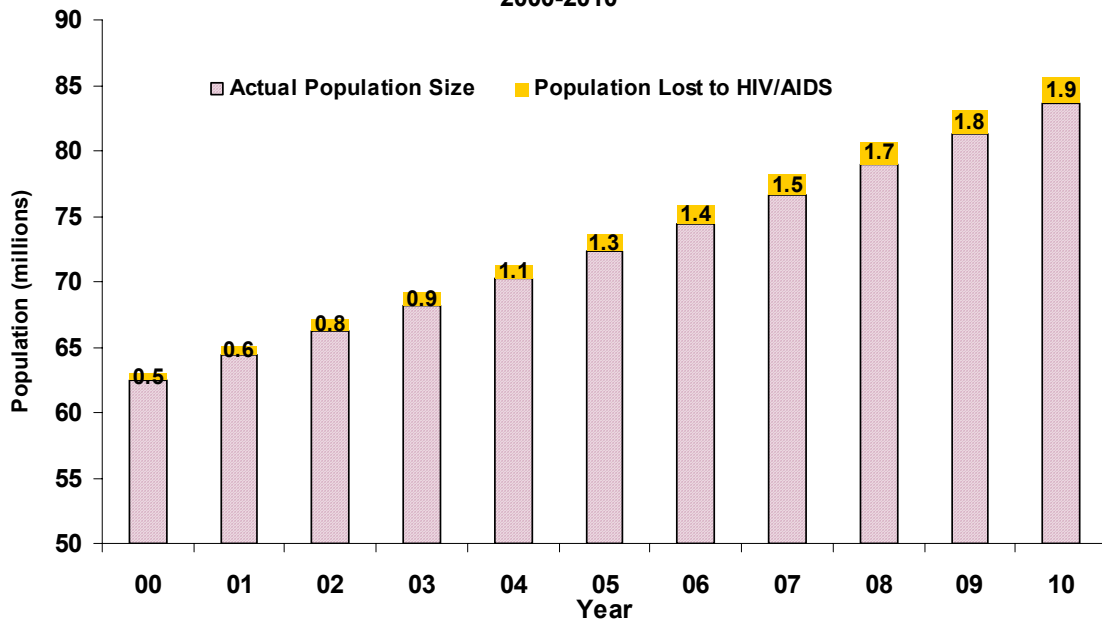
Figure 6.1: Estimated and Projected TB Cases due to HIV/AIDS, 1990-2010



6.2. IMPACT OF HIV/AIDS ON TOTAL POPULATION SIZE

Figure 6.2 shows the impact of AIDS on total population size. 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. However, the projected and estimated population losses due to HIV/AIDS will not bring a halt to the general population growth.

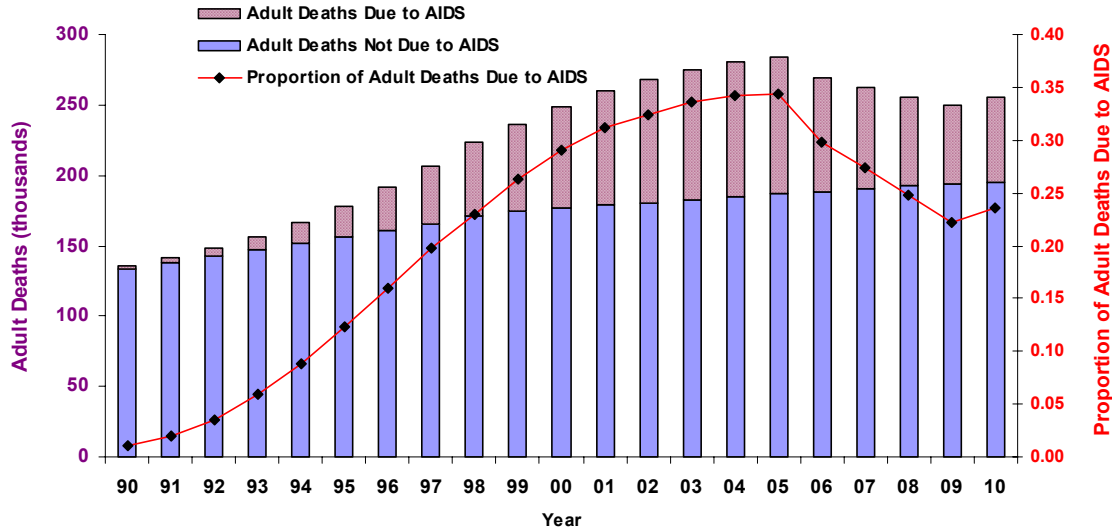
Figure 6.2: Actual Total Population Size and Population Lost to HIV/AIDS, 2000-2010



6.3. IMPACT OF HIV/AIDS ON YOUNG ADULT (15-49 YEARS) DEATHS

Adult (15-49 years) deaths due to AIDS progressively increased up to 2005 when they accounted for 35% of young adult deaths and are expected to dramatically decline up to 2009 before rising again in 2010 as people on ART start dying. The main reason for the decline is the anticipated universal ART coverage as per the MOH's plan.

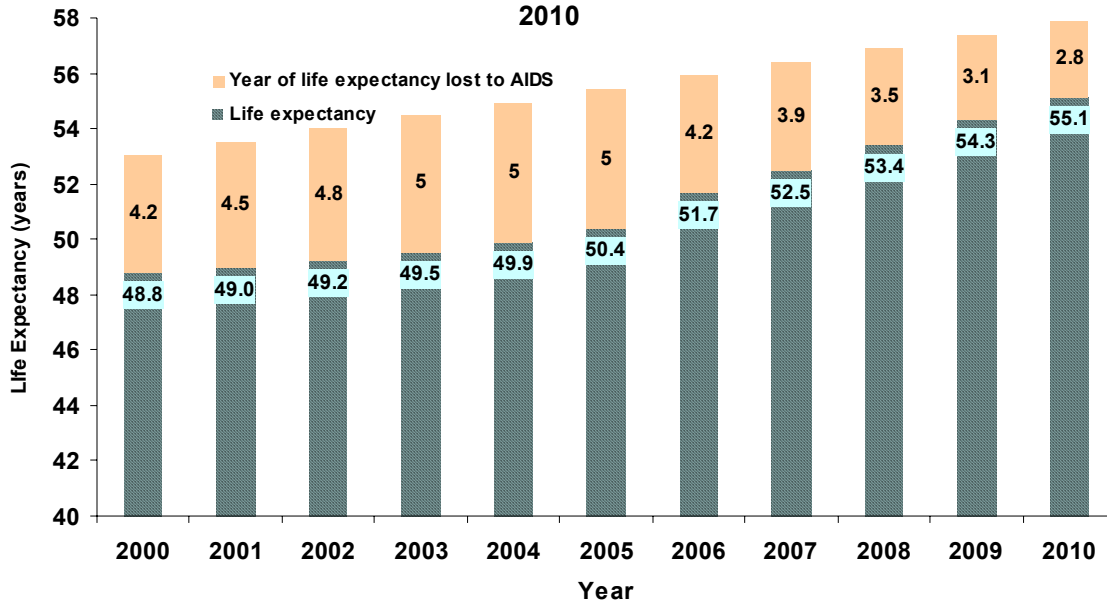
Figure 6.3: Estimated and Projected Number of Young Adult (15-49) Annual Deaths, With and Without AIDS, and Proportion of Deaths Due to AIDS, 1990-2010



6.4. IMPACT OF HIV/AIDS ON LIFE EXPECTANCY

AIDS has a severe impact on life expectancy (LE). Figure 6.4 below demonstrates the estimated difference in LE for persons with and without HIV/AIDS for the years 2000 to 2010. HIV/AIDS likely reduced LE by five years in 2005. The reduction in LE due to HIV/AIDS, however, is projected to decline during 2005-2010 because of the anticipated universal ART coverage as per the MOH's plan.

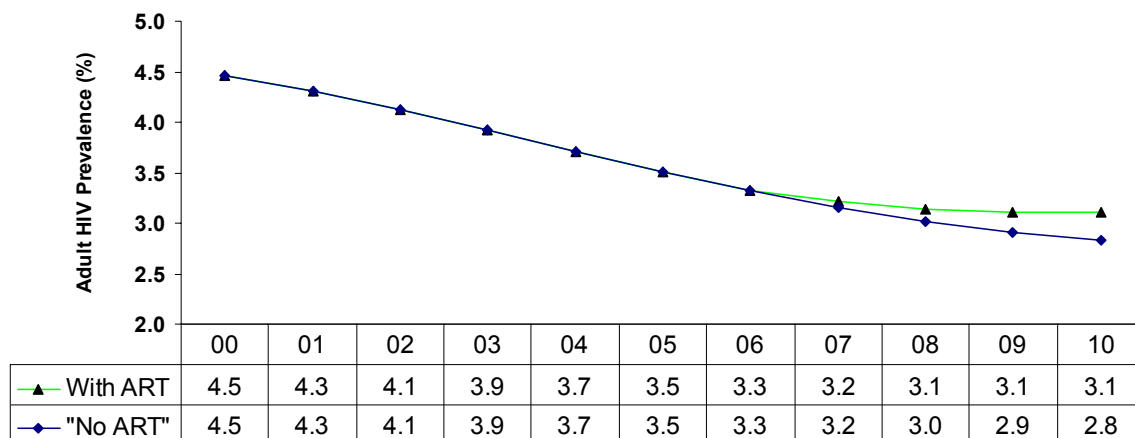
Figure 6.4: Estimated and Projected Life Expectancy at Birth, 2000-2010



6.5 POTENTIAL IMPACTS OF ART ON HIV PREVALENCE

The HIV prevalence is expected to increase as the number of people taking ART increases or survive longer. If universal access to ART is achieved, the national HIV prevalence will slightly increase from 2.8% without ART to 3.1% with ART in 2010.

Figure 6.5: Potential Effect of Antiretroviral Treatment (ART) on Adult (15 - 49) HIV Prevalence, 2000-2010



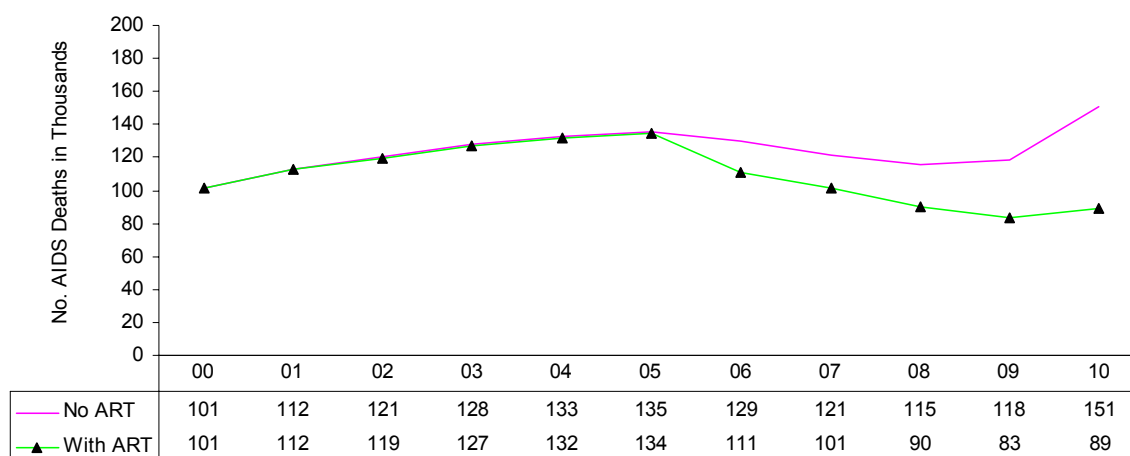
Year and Adult HIV Prevalence (%)

(ART levels from 2006 and onwards provided according to government targets)

6.6 POTENTIAL IMPACTS OF ART ON AIDS DEATHS

Assuming a successful implementation of the MOH's ART rollout plan, the number of AIDS deaths will start to decline from 2005 onwards. By the year 2010, there will be 41% fewer AIDS deaths compared to a projection without an ART program.

Figure 6.6: Potential Effect of Anti-retroviral Treatment (ART) on AIDS Deaths, 2000-2010

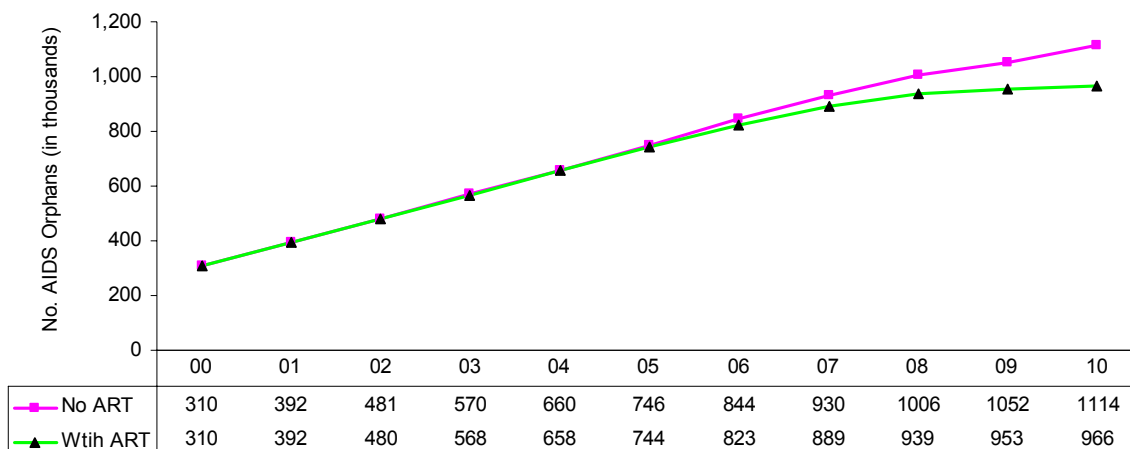


Year and AIDS Deaths
(ART levels from 2006 and onwards provided according to government targets)

6.7 POTENTIAL IMPACTS OF ART ON AIDS ORPHANS

The massive scale-up of ART as planned should also decrease the number of AIDS orphans by preventing the death of HIV-infected parents. The estimated number of AIDS orphans could be 13% lower with universal ART access by 2010.

Figure 6.7: Potential Effect of Antiretroviral Treatment (ART) on the Number of AIDS Orphans, 2000-2010



Year and No. AIDS Orphans (thousands)
(ART levels from 2006 and onwards provided according to government targets)

SECTION 7: DISCUSSION

UNAIDS and WHO have published HIV estimates at global, regional, and country levels since 1998 based primarily on information collected from Antenatal Care (ANC)-based HIV Sentinel Surveillance systems. Prevalence of HIV in pregnant women is assumed to correlate well with prevalence in other adults. Such correlation is based on direct comparisons of viral prevalence in the adult population and antenatal clinics within the same communities performed in various countries (Grassly 2004). ANC surveillance is also used because it is less expensive and logistically easier to conduct and can be repeated periodically to provide trend data.

Similarly, Ethiopia has employed ANC-based sentinel surveillance since 1989; the “*AIDS in Ethiopia: Sixth Report*” is largely based on data from this system collected during 1989-2005. More details will be published in a separate document entitled “AIDS in Ethiopia: Technical Document for the Sixth Report” and also will be made available as searchable database on the Ethiopia AIDS Resource Center website at www.etharc.org.

The ANC-based sentinel surveillance system has significantly improved overtime in the representativeness and data quality. The number of surveillance sites increased from 35 sites in 2002 to 82 in 2005. To improve on and adjust for rural under-representation, the number of surveillance sites in the rural areas was increased from 9 in 2002 to 44 in 2005, satellite sites representing more remote rural areas were added, and the median HIV-1 prevalence in rural areas was adjusted down by 20% to correct for urban residents visiting rural ANC clinics. Moreover, the national estimate was also calculated by weighting urban and rural estimates for their respective population sizes. Improvements have also been made in specimen collection, transportation, testing, laboratory quality assurance, and data management. UNAIDS has developed the Estimation and Projection Package (EPP) as a tool for national programs to use for making national estimates and

short term projections of HIV prevalence. The curve fitting approach incorporated into the EPP is a major improvement on the gamma function used in EPIMODEL. EPP provides direct input to Spectrum, which produces incidence, deaths, and AIDS impacts.

The national monitoring and evaluation system has also improved and is now producing national programmatic data for ART, CT, and PMTCT. Behavioural trend data have been made available for the first time from both the DHS (2000 and 2005) and BSS (2002 and 2005) surveys.

The ANC-based HIV Sentinel Surveillance results indicate that the national and rural HIV prevalence for Ethiopia has stabilized while the urban prevalence is declining, following peaks in prevalence in 1998-2000 for national, 1999-2001 for rural, and 1997-98 for urban areas. HIV incidence followed similar trends given that it was estimated indirectly through change in prevalence. The national HIV prevalence trend followed the trend for rural areas, where 84% of the population lives.

These findings can be a result of multiple factors including improved ANC-based sentinel surveillance system with increased rural representation where prevalence is lower; impact of mortality of HIV infected individuals; and HIV/AIDS control and mitigation efforts including those that lead to behavior change. Further investigations are needed to establish causal relationships between these hypothesized and other potential factors and the observed epidemic trends.

The countries' HIV/AIDS control and mitigation efforts over the past six years have intensified. A politically conducive environment has supported a multi-sectoral approach and social mobilization strategy allowing the participation of all actors including civil society in HIV/AIDS prevention and mitigation efforts at national, regional and community levels. The government issued a National HIV/AIDS Policy in 1998, established the National AIDS Council in 2000, and in 2001 launched the Strategic Framework for the National Response to HIV/AIDS for 2001-2004 that articulated the multi-sector approach and led to the establishment of national, regional, district, and Kebele level coordinating bodies. The 2005 National Strategy made social mobilization (ownership by the people) the centerpiece of its prevention strategy and the health sector a pillar for mitigation efforts. Key guidelines for surveillance, VCT, STI, home-based care, PMTCT, ART, and universal precautions have been developed and programs implemented accordingly.

There has been increasing political commitment and the society as a whole has been mobilized; civil society, faith-based organizations of all faiths and PLWHA associations have been actively engaged in anti-stigma campaigns, promoting openness, and caring for the sick. Bilateral and multilateral organizations have significantly increased their technical and financial supports with the United States President's Emergency Plan for AIDS Relief (PEPFAR), Global Fund, and the World Bank's MAP program being the major donors.

These resources have facilitated large scale social mobilization and expansion of HIV/AIDS prevention, care, support, and treatment services. The health sector response has been strengthened and is now undertaking rapid and mass scale-up of prevention, care, and treatment services including CT, PMTCT, and ART. The numbers of centers providing CT, ART, and PMTCT services have grown to 658, 132, and 173 respectively. The number of people using these services has also increased over the years.

The behavioral trends (2000 vs.2005) from the DHS survey among the general population reveal high level of awareness and changes in behavior. The prevalence of premarital sex decreased in all age groups and among both men and women. Specifically, prevalence went from 7.8% to 3.9% among men 15-19; from 20.8% to 13.4% among men 20-24; from 4.0% to 1.0% among women 15-19; and from 16.5% to 3.1% among women 20-24. The prevalence of multiple sexual partners has also decreased among both males and females from 5.4% to 4.1% among men 15-49 and from 1.1% to 0.2% among women 15-49. The survey also revealed increases in condom use at last high risk sex from 30.3% to 51.7% among men 15-49 and from 13.4% to 23.6% among women 15-49. Access to counseling and testing has also increased though not substantially among males from 2% to 6%; data for females was not available from DHS 2000 but in 2005, 4% of women accessed CT services.

The BSS (2001 vs. 2005) focused primarily on high risk groups. The preliminary results from this survey show high level of awareness among the respondents. It also registered high level of consistent condom use in the last 12 months among female sex workers of 98%. The proportion of those who had HIV tests also increased among all the groups: from 7.7% to 26% among female sex workers; from 3.3% to 9.3% among in-school youth; and from 28% to 50.8% among the military.

The ANC-based surveillance results show that more focus is needed on special populations including women and girls and regions with disproportionate burdens. Women are bearing a disproportionate burden of the disease and its impact because of significant gender inequalities resulting in higher stigma, discrimination, lower socio-economic status and poorer access to public health services. Most often women and girls are responsible for caring for sick family members. Due to the combined effects of both relatively high HIV prevalence and large population sizes, Amhara, Oromia, Addis Ababa, and SNNPR accounted for 86.6% of all PLWHA in 2005. Similarly, these four regions share 86.7% of the total estimated HIV positive pregnancies, 85.3% of new infections, 87.9% of new AIDS cases, and 88.2 % of AIDS deaths that occurred in Ethiopia in 2005.

However, much remains to be done. The urban epidemic is at unacceptably high prevalence level of 10.5%; prevalence of behavioral indicators such as condom use are not at optimal levels; counseling and testing coverage is still low with only 5% of the general population 15-49 years of age being ever tested; ART has been accessed by only 13% of those who need ART; and only 0.8% of HIV infections among births to HIV positive mothers was averted in 2005/6 through PMTCT programs. There is, therefore, a need to capitalize on the momentum gathered from positive changes in behavioral trends;

scale-up of programs; and observed changes in the epidemic's trend to intensify and deepen the HIV/AIDS prevention, care, and treatment efforts so as to control and mitigate the impact of the HIV/AIDS pandemic in Ethiopia.

Data presented here suggest that prevention efforts must focus on high risk groups and regions with comparatively high prevalence, and rural hot prevalence spot. Prevention efforts should also focus on interrupting urban-to-rural transmission and containing the rural epidemic at its current low levels through social mobilization.

Although the overall HIV prevalence in Ethiopia is low, because of the large population, the absolute number of persons infected with HIV (and affected by HIV) is significant. Universal provision of prevention, care, and treatment to the estimated 1.32 million PLWHA (278,000 of which requiring ART) and 744,100 AIDS orphans poses substantial challenges to the public health system of one of the poorest countries in the world. The loss of young adults in their productive years of life will affect the country's overall economic output. The HIV epidemic will continue to tax the limited available health and social service delivery systems. Universal access will be challenged by the fact that 50% of the PLWHA live in rural areas where access to communication and health care infrastructures is poor. To control and mitigate the impact of the HIV/AIDS epidemic on the citizens of this country, Ethiopia will continue to require the engagement of every citizen, government, and civil society as well as assistance from partners for many years to come.

SECTION 8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The following conclusions are drawn from the ANC-based HIV/AIDS sentinel surveillance data:

- The adjusted HIV prevalence for Ethiopia in 2005 is 3.5% (urban 10.5% and rural 1.9%).
- HIV prevalence is higher among females (4 %) than males (3%) and in urban (10.5%) than rural (1.9%) areas.
- The national and rural HIV prevalence for Ethiopia has stabilized while the urban epidemic is declining.
- The rural epidemic appears to be more heterogeneous across regions and localities compared to the urban epidemic.
- The situation of HIV/AIDS epidemic in Amhara, Oromia, Addis Ababa, and SNNPR is worse than other regions. Together, they accounted for 86.6% of all PLWHA, 86.7% of the total estimated HIV positive pregnancies, 85.3% of new infections, 87.9% of new AIDS cases, and 88.2 % of AIDS deaths that occurred in Ethiopia in 2005.
- The HIV/AIDS epidemic continues to pose a threat to the development of Ethiopia where 1.3 million people are living with the virus, 744,100 are orphaned due to AIDS, and 277,800 are in need of ART in 2005.
- 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.

- Universal access to ART can reduce AIDS deaths by 41% and AIDS orphans by 13% by 2010.

Recommendations

The ANC-based national HIV sentinel surveillance and programmatic data included in this report indicate the following measures should be taken to accelerate the prevention, control, and mitigation efforts in Ethiopia:

1. Conduct investigations to understand causal relationships between hypothesized and other potential factors and the observed epidemic trends.
2. Given the overall low prevalence, prevention efforts should focus on high risk groups, particularly in urban areas, and regions with comparatively high prevalence, and rural hot prevalence spot. Prevention efforts should also focus on interrupting urban-to-rural transmission and containing the rural epidemic at its current low levels through social mobilization. Social mobilization can also enhance community ownership and improve populations' access to prevention, care, and treatment services.
3. Given the stated prevalence of syphilis, strengthen STI services across the country including rural areas and make routine syphilis screening and treatment available at all antenatal care clinics throughout the year.
4. Conduct studies to improve identification and understanding of high risk factors and bridging groups that fuel the epidemic or are important for HIV transmission including factors that contribute to urban-to-rural transmission and rural HIV prevalence hot spots.
5. Institute systematic HIV/AIDS biological and behavioral surveillance among high risk populations.
6. Strive for universal provision of HIV/AIDS care, support, and treatment to the estimated 1.32 million PLWHA and 744,100 AIDS orphans allocating resources proportional to disease burden. Access to ANC for pregnant women, ANC retention, counseling and testing among those accessing ANC, and triple therapy for reduction of MTCT where it can be made available should be increased. PMTCT services to reach home births, ART services for children, and services to rural areas where 50% of the PLWHA live also need to be expanded.
7. Scale-up counselling and testing services as a prevention and entry point for care and treatment strategy including provider-initiated counselling and testing at TB and STI clinics which is important for accessing individuals needing ART.
8. Improve the quality of care in parallel with scaling up of services including improving adherence among those on ART and instituting ARV resistance surveillance.

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