

HIV Related Estimates and Projections for Ethiopia - 2014



Ethiopian Public Health
Institute
Federal Ministry of Health
July, 2014



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DEFINITIONS:

1. **Adults ART needs:** CD4 count of less than 500 cells per ml, HIV pregnant women, TB/HIV co-infected individuals.
2. **Children ART needs:** HIV positive children below the age of 15 years.
3. **Mothers needing PMTCT:** The number of HIV positive women giving birth.
4. **HIV positive pregnant with CD4 < 350:**The no. of HIV positive pregnant women who have CD4 count less than 350 cell/ml
5. **Maternal Orphans:** Children age 0-17 who have lost their mother. They may or may not have also lost their father.
6. **Paternal Orphans:** Children age 0-17 who have lost their father. They may or may not have also lost their mother.
7. **Double Orphans:** Children age 0-17 who have lost both parents.
8. **Total Orphans:** Maternal orphans plus Paternal orphans less Double-orphans

FOREWORD

The Government of Ethiopia has designed and executed a surveillance activity that follows up the trend of HIV infections in the population. Accordingly, the result of the 2012 round of Antenatal Care Based HIV Surveillance Report was released to users in December, 2013. The country has also undertaken the second round of a population based survey to measure the prevalence of HIV among the general population as part of the country's Demographic and Health Survey in 2011. The results of that survey were released to users in March, 2012. Based on the results from the above exercises, the Ethiopian Public Health Institute has generated estimates on HIV related indicators for the country.

Because of availability of more recent data, the current estimates provide updated information for the country. The contents of this report replace the HIV related estimates previously produced by the country.

The Ethiopian Public Health Institute (EPHI) sincerely hopes and expects that this 'HIV Related Estimates and Projections for Ethiopia' Report will be a valuable source of information for all partners who would like to contribute in the fight against HIV/AIDS in Ethiopia.

Finally, I would like to take this opportunity to thank all those who participated in the preparation, data collection, and implementation of 2012 and earlier ANC surveillance round activities. I would also like to thank all agencies and personnel involved in the data and specimen collection for the 2011 Demographic and Health Survey. In particular, I thank FHAPCO for providing programmatic data. I extend my gratitude to experts from EPHI, FHAPCO, CDC, UNAIDS and WHO that participated in the generation of this estimates and projections for the country. In addition, my thanks go to UNAIDS headquarters, and related international agency staff who contributed towards these estimates.

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SECTION 1. BACKGROUND AND INTRODUCTION

Ethiopia has a wide HIV related program that is focussed on the provision of preventive, care, support and treatment services. To coordinate these activities, the Federal HIV/AIDS Prevention and Control Office (FHAPCO) was established in 2002. The office is mandated to coordinate the overall National HIV/AIDS Prevention and Control program within a broad-based multi-sectorial approach. FHAPCO 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 during this period. The first strategic plan (2005-2008) and the second (2010/11 – 2014/15) have focused on targeting expansion of provision of services.

The ministry has mandated Ethiopian Public Health Institute (EPHI) to conduct operational research on public health priority diseases, surveys and surveillance activities related to infectious and non-infectious diseases, nutrition and traditional medicine. The institute is also mandated to lead the National Public Health Emergency Response. Because of these, HIV and other National surveillance and survey activities are hosted and led by EPHI. EPHI also serves as Ethiopia's National Centre of excellence to perform referral medical laboratory services and is providing highly specialized diagnostic services that cannot be conducted elsewhere in the country. It implements National External Quality Assurance Schemes (NEQAS) for HIV testing.

Ethiopia has utilized ANC-based HIV sentinel surveillance since 1989. The results of the 2012 round have been released, and preparatory activities for the 2014 round are underway. The country has also conducted two rounds of Demographic and Health Survey (DHS) that included blood collection for HIV testing. Field work for both rounds of DHS was undertaken by the Central Statistical Authority, while technical assistance was provided by ICF International. The quality control activities for the specimen collection were undertaken by EPHI, which was also responsible for the testing of the specimen.

The results from the above sources of data were utilized to provide the estimates and projections in this report.

The objectives of the HIV Related Estimates and Projection for Ethiopia Report include the following:

1. Estimate the magnitude of HIV and related indicators in the country;
2. Show trends of the HIV and related indicators over the years 2013 through 2018;
3. Provide data for evidence based planning, advocacy and timely intervention of activities

SECTION 2. METHODOLOGY

The sentinel site HIV prevalence values from all available years (1989-2012) were fed into the SPECTRUM (version 5.03) software and HIV prevalence curves that best fit all available data points were obtained. The software package was also used to estimate the various HIV related indicators. For this purpose, demographic information on population size, age and sex distribution, life expectancy, fertility, and other parameters were used. Eligibility for ART and treatment of children followed the currently recommended criteria by MOH (CD4 count of less than 500 for adults, TB/HIV co-infected individuals, pregnant women, and all who are below 5 years of age for children).

HIV/AIDS data from all other available sources, including ART and PMTCT, were compiled and used as inputs for the projection. For future projection periods, government targets were used as inputs. HIV prevalence levels from DHS 2011 were used as the calibration point to fix the trend and future projection of HIV prevalence level generated from the use of the ANC surveillance data points.

The SPECTRUM software provided estimates for parameters such as number of people living with HIV, number of new infections, number of AIDS related deaths, and number of orphans. The software also provided the number of HIV positive women who deliver within the year.

Division of the estimates to rural and urban areas was done by the use of HIV prevalence estimates obtained during the DHS 2011, and relative population size of each of the areas. Estimates related to children and PMTCT also took the fertility levels of the country into account.

The accuracy of the estimates presented in this report depends on the accuracy of the inputs used for their computation. The projections for future years also depend on the attainment of the goals of the targets set by the government (which also served as inputs for the projections). Projections for the years beyond the ANC data points (2012 – 2018) depend on the trend set by the ANC based findings for the previous years. In case the expected trend is not attained, the estimates may be affected.

SECTION 3.ESTIMATES/ PROJECTIONS

Table 1A. Major HIV Indicators, Ethiopia

Urban+Rural	All Ages	Ethiopia					
		2013	2014	2015	2016	2017	2018
HIV-pos population							
Total		793,705	769,602	753,083	740,251	730,975	723,836
Males		322,004	311,555	303,597	297,356	292,631	288,697
Females		471,701	458,047	449,486	442,895	438,344	435,139
New HIV infections							
Total		21,496	15,614	14,172	11,479	10,019	8,585
Males		9,137	6,403	5,660	4,556	3,996	3,439
Females		12,359	9,211	8,512	6,923	6,023	5,146
Annual AIDS deaths							
Total		45,171	35,578	26,682	20,354	15,338	11,738
Males		17,340	14,929	11,763	8,975	6,907	5,552
Females		27,831	20,649	14,919	11,379	8,431	6,186
ART needs							
Total		580,067	709,291	702,101	697,449	695,674	696,113
Males		230,447	286,790	282,888	280,134	278,520	277,687
Females		349,620	422,501	419,213	417,315	417,154	418,426
Ages 15+							
Adult (15-49) Prevalence (%)							
Total		1.2	1.1	1.1	1.0	1.0	1.0
Males		0.9	0.9	0.8	0.8	0.8	0.7
Females		1.5	1.4	1.3	1.3	1.2	1.2
HIV-pos population							
Total		593,375	591,146	593,614	597,050	602,742	610,372
Males		220,783	221,384	223,015	224,988	227,818	231,339
Females		372,592	369,762	370,599	372,062	374,924	379,033
New HIV infections							
Total		13,158	11,264	11,329	9,374	8,035	6,768
Males		4,895	4,190	4,214	3,486	2,987	2,515
Females		8,263	7,074	7,115	5,888	5,048	4,253
Adult HIV incidence (%)							
Total		0.030	0.030	0.020	0.020	0.020	0.010
Annual AIDS deaths							
Total		31,977	26,019	21,268	18,173	14,429	10,846
Males		10,672	10,100	9,028	7,873	6,447	5,101
Females		21,305	15,919	12,240	10,300	7,982	5,745
ART needs							
Total		431,761	530,835	542,632	554,248	567,441	582,649
Males		156,294	196,619	202,306	207,766	213,707	220,329
Females		275,467	334,216	340,326	346,482	353,734	362,320
Children (0-14 yrs)							
HIV-pos population							
Total		200,330	178,456	159,469	143,201	128,233	113,464
Males		101,221	90,171	80,582	72,368	64,813	57,358
Females		99,109	88,285	78,887	70,833	63,420	56,106
New HIV infections							
Total		8,338	4,350	2,843	2,105	1,984	1,817
Males		4,242	2,213	1,446	1,070	1,009	924
Females		4,096	2,137	1,397	1,035	975	893
Annual AIDS deaths							
Total		13,194	9,559	5,414	2,181	909	892
Males		6,668	4,829	2,735	1,102	460	451
Females		6,526	4,730	2,679	1,079	449	441
ART Needs							
Total		148,306	178,456	159,469	143,201	128,233	113,464
Males		74,153	90,171	80,582	72,368	64,813	57,358
Females		74,153	88,285	78,887	70,833	63,420	56,106

Urban+Rural	Ethiopia					
	2013	2014	2015	2016	2017	2018
Mothers needing PMTCT	33,162	30,528	28,487	26,820	25,371	24,136
HIV-pos pregnant with CD4 < 350	21,556	26,895	26,785	26,006	24,574	23,335
Orphans (0-17 yrs)						
Maternal orphans						
AIDS	602,127	555,457	496,255	439,413	385,305	333,336
Non-AIDS	1,196,072	1,174,702	1,152,732	1,130,817	1,109,499	1,089,019
Total	1,798,199	1,730,159	1,648,987	1,570,230	1,494,804	1,422,355
Paternal orphans						
AIDS	552,702	505,501	454,641	403,466	352,777	303,638
Non-AIDS	2,269,879	2,243,841	2,216,874	2,190,287	2,165,023	2,141,544
Total	2,822,581	2,749,342	2,671,515	2,593,753	2,517,800	2,445,182
Dual orphans						
AIDS	304,072	275,353	242,328	210,209	180,148	152,410
Non-AIDS	340,970	331,611	322,173	312,456	303,294	295,057
Total	645,042	606,964	564,501	522,665	483,442	447,467
Total orphans	3,975,738	3,872,537	3,756,001	3,641,318	3,529,162	3,420,070
Total AIDS orphans	850,757	785,605	708,568	632,670	557,934	484,564

Table 1B. Major HIV Indicators, Ethiopia Urban

Urban	All Ages	Ethiopia					
		2013	2014	2015	2016	2017	2018
HIV-pos population							
Total		530,299	514,447	503,418	495,194	488,621	483,560
Males		215,141	208,262	202,947	198,918	195,609	192,865
Females		315,158	306,185	300,471	296,276	293,012	290,695
New HIV infections							
Total		11,740	8,148	7,289	5,945	5,179	4,467
Males		5,129	3,428	2,971	2,403	2,107	1,826
Females		6,611	4,719	4,318	3,542	3,072	2,641
Annual AIDS deaths							
Total		30,180	23,783	17,836	13,616	10,253	7,842
Males		11,585	9,980	7,863	6,004	4,617	3,709
Females		18,595	13,803	9,973	7,612	5,636	4,133
ART needs							
Total		387,561	474,132	469,338	466,561	465,024	465,040
Males		153,969	191,707	189,104	187,397	186,177	185,509
Females		233,592	282,424	280,234	279,165	278,847	279,530
Ages 15+							
Adult (15-49) Prevalence (%)							
Total		3.7	3.5	3.2	3.0	2.8	2.6
Males		2.8	2.6	2.4	2.3	2.1	2.0
Females		4.6	4.3	4.0	3.7	3.4	3.2
HIV-pos population							
Total		396,452	395,157	396,817	399,399	402,904	407,760
Males		147,512	147,986	149,080	150,507	152,285	154,546
Females		248,940	247,171	247,737	248,892	250,619	253,214
New HIV infections							
Total		6,169	5,240	5,389	4,537	3,853	3,253
Males		2,295	1,949	2,005	1,687	1,432	1,209
Females		3,874	3,291	3,384	2,850	2,421	2,044
Adult HIV incidence (%)							
Total		0.050	0.040	0.040	0.030	0.030	0.020
Annual AIDS deaths							
Total		21,365	17,393	14,217	12,157	9,645	7,246
Males		7,130	6,752	6,035	5,267	4,309	3,408
Females		14,235	10,641	8,182	6,890	5,336	3,838
ART needs							
Total		288,473	354,842	362,737	370,766	379,307	389,240
Males		104,425	131,432	135,237	138,986	142,853	147,191
Females		184,048	223,410	227,500	231,781	236,454	242,048
Children (0-14 yrs)							
HIV-pos population							
Total		133,847	119,290	106,601	95,795	85,717	75,800
Males		67,629	60,275	53,867	48,411	43,324	38,318
Females		66,218	59,015	52,734	47,384	42,393	37,482
New HIV infections							
Total		5,571	2,908	1,900	1,408	1,326	1,214
Males		2,834	1,479	967	716	674	617
Females		2,737	1,428	934	692	652	597
Annual AIDS deaths							
Total		8,815	6,390	3,619	1,459	608	596
Males		4,455	3,228	1,828	737	308	301
Females		4,360	3,162	1,791	722	300	295
ART Needs							
Total		99,088	119,290	106,601	95,795	85,717	75,800
Males		49,544	60,275	53,867	48,411	43,324	38,318
Females		49,544	59,015	52,734	47,384	42,393	37,482
Mothers needing PMTCT							
Total		22,157	20,407	19,043	17,941	16,959	16,124
HIV-pos pregnant with CD4 < 350							
Total		14,402	17,978	17,905	17,397	16,426	15,589

Urban	Ethiopia					
	2013	2014	2015	2016	2017	2018
Orphans (0-17 yrs)						
Maternal orphans						
AIDS	293,619	271,071	242,178	214,681	188,023	162,525
Non-AIDS	138,955	136,472	133,920	131,374	128,897	126,518
Total	432,573	407,543	376,097	346,055	316,920	289,043
Paternal orphans						
AIDS	269,517	246,692	221,870	197,119	172,149	148,045
Non-AIDS	263,705	260,680	257,547	254,458	251,523	248,796
Total	533,222	507,372	479,417	451,577	423,673	396,841
Dual orphans						
AIDS	148,276	134,376	118,259	102,700	87,909	74,311
Non-AIDS	39,612	38,525	37,429	36,300	35,235	34,278
Total	187,889	172,902	155,687	139,000	123,145	108,589
Total orphans	777,907	742,014	699,827	658,632	617,448	577,295
Total AIDS orphans	414,859	383,387	345,789	309,099	272,263	236,260

Table 1C. Major HIV Indicators, Ethiopia Rural

Rural	All Ages	Ethiopia					
		2013	2014	2015	2016	2017	2018
HIV-pos population							
Total		263,406	255,155	249,665	245,057	242,354	240,276
Males		106,863	103,293	100,650	98,438	97,022	95,832
Females		156,543	151,862	149,015	146,619	145,332	144,444
New HIV infections							
Total		9,756	7,466	6,883	5,534	4,840	4,118
Males		4,008	2,975	2,689	2,153	1,889	1,613
Females		5,748	4,492	4,194	3,381	2,951	2,505
Annual AIDS deaths							
Total		14,991	11,795	8,846	6,738	5,085	3,896
Males		5,755	4,949	3,900	2,971	2,290	1,843
Females		9,236	6,846	4,946	3,767	2,795	2,053
ART needs							
Total		192,506	235,159	232,763	230,888	230,650	231,073
Males		76,478	95,083	93,784	92,737	92,343	92,178
Females		116,028	140,077	138,979	138,150	138,307	138,896
Ages 15+							
Adult (15-49) Prevalence (%)							
Total		0.6	0.5	0.5	0.5	0.4	0.4
Males		0.4	0.4	0.4	0.4	0.3	0.3
Females		0.7	0.6	0.6	0.6	0.5	0.5
HIV-pos population							
Total		196,923	195,989	196,797	197,651	199,838	202,612
Males		73,271	73,398	73,935	74,481	75,533	76,793
Females		123,652	122,591	122,862	123,170	124,305	125,819
New HIV infections							
Total		6,989	6,024	5,940	4,837	4,182	3,515
Males		2,600	2,241	2,209	1,799	1,555	1,306
Females		4,389	3,783	3,731	3,038	2,627	2,209
Adult HIV incidence (%)		0.020	0.020	0.010	0.010	0.010	0.010
Annual AIDS deaths							
Total		10,612	8,626	7,051	6,016	4,784	3,600
Males		3,542	3,348	2,993	2,606	2,138	1,693
Females		7,070	5,278	4,058	3,410	2,646	1,907
ART needs							
Total		143,288	175,993	179,895	183,482	188,134	193,409
Males		51,869	65,187	67,069	68,780	70,854	73,138
Females		91,419	110,806	112,826	114,701	117,280	120,272
Children (0-14 yrs)							
HIV-pos population							
Total		66,483	59,166	52,868	47,406	42,516	37,664
Males		33,592	29,896	26,715	23,957	21,489	19,040
Females		32,891	29,270	26,153	23,449	21,027	18,624
New HIV infections							
Total		2,767	1,442	943	697	658	603
Males		1,408	734	479	354	335	307
Females		1,359	709	463	343	323	296
Annual AIDS deaths							
Total		4,379	3,169	1,795	722	301	296
Males		2,213	1,601	907	365	152	150
Females		2,166	1,568	888	357	149	146
ART Needs							
Total		49,218	59,166	52,868	47,406	42,516	37,664
Males		24,609	29,896	26,715	23,957	21,489	19,040
Females		24,609	29,270	26,153	23,449	21,027	18,624
Mothers needing PMTCT		11,005	10,121	9,444	8,879	8,412	8,012
HIV-pos pregnant with CD4 < 350		7,154	8,917	8,880	8,609	8,148	7,746

Rural	Ethiopia					
	2013	2014	2015	2016	2017	2018
Orphans (0-17 yrs)						
Maternal orphans						
AIDS	308,508	284,386	254,077	224,732	197,282	170,811
Non-AIDS	1,057,117	1,038,230	1,018,812	999,443	980,602	962,501
Total	1,365,626	1,322,616	1,272,890	1,224,175	1,177,884	1,133,312
Paternal orphans						
AIDS	283,185	258,809	232,771	206,347	180,628	155,593
Non-AIDS	2,006,174	1,983,161	1,959,327	1,935,829	1,913,500	1,892,748
Total	2,289,359	2,241,970	2,192,098	2,142,176	2,094,127	2,048,341
Dual orphans						
AIDS	155,796	140,977	124,069	107,509	92,239	78,099
Non-AIDS	301,358	293,086	284,744	276,156	268,059	260,779
Total	457,153	434,062	408,814	383,665	360,297	338,878
Total orphans	3,197,831	3,130,523	3,056,174	2,982,686	2,911,714	2,842,775
Total AIDS orphans	435,898	402,218	362,779	323,571	285,671	248,304