ZIMBABWE

NATIONAL HIV AND AIDS ESTIMATES

2013

AIDS & TB PROGRAMME

MINISTRY OF HEALTH AND CHILD CARE

Foreword

The Ministry of Health and Child Care (MOHCC) with support from UNAIDS, in collaboration with National AIDS Council and other development partners developed the Zimbabwe 2013 National and Provincial HIV and AIDS Estimates to track the epidemic and monitor the response to HIV and AIDS. The UNAIDS provided technical assistance throughout the process of Estimates generation and trained local experts production of sub-national estimates which is a new component to this year's Estimates Report.

The 2013 HIV Estimates provide an update of the HIV and AIDS estimates and projections which include HIV prevalence and incidence, AIDS-related deaths and orphans, children and adults in need of ART and PMTCT services in the country and an overview of the likely impact that the national AIDS response has made now and in the future based on the *Spectrum Model version 5.01*. The findings from this report will assist programme managers in accounting for efforts in the national response and policy makers in planning and resource mobilization. The results will also assist the country monitor programme coverage and possible access gaps in line with universal access.

Additionally, this report provides, relevant and reliable strategic information required and needed data for the continuous assessment of progress in the national AIDS response in-line with the UN High Level Meeting targets of 2015, for which Zimbabwe is a signatory

Brigadier General (Dr) G. Gwinji
Permanent Secretary for Health and Child Care

Acknowledgments

Ministry of Health and Child Care (MOHCC) sincerely extends its gratitude to all individuals and organizations that contributed to the production of these estimates and projections.

We are particularly grateful to the Joint United Nations Program on HIV/AIDS (UNAIDS) and Department of Community Medicine, University of Zimbabwe sponsored by Centres for Disease Control and Prevention (CDC) Zimbabwe for funding country representatives during the sub-national HIV estimates consultative meeting in Kenya.

We are also grateful to the National HIV and AIDS Estimates Technical Working Group for working tirelessly to produce this report. This working group led by the Ministry of Health and Child Care AIDS & TB Unit, consisted of members from United Nations Joint Programme on HIV and AIDS (UNAIDS), National AIDS Council (NAC), Department of Community Medicine, University of Zimbabwe (UZ), Centers for Disease Control and Prevention (CDC) Zimbabwe, World Health Organization (WHO), Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), OPHID Zimbabwe, United Nation Development Programme (UNDP) and Zimbabwe National Statistics Agency (ZIMSTAT).

This report has been supported National AIDS Council and President's Emergency Plan for AIDS Relief (PEPFAR) through a Cooperative Agreement between Center of Disease Control and University of Zimbabwe Department of Community Medicine SEAM Project under the terms of Cooperative Agreement Number: 1U2GGH000315-01.

Ministry of Health and Child Care is committed to utilizing the findings and recommendations from this report to support programme review, reprogramming, monitoring and evaluation as well as policy decision making.

Dr. O Mugurungi

Director, AIDS and TB Program

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1. Executive Summary

The 2013 HIV estimates is a primary source of updated information of the HIV epidemic at the national and sub-national level in Zimbabwe. The overall objective of this report is to present the national and sub-national HIV and AIDS estimates for 2013 and projections up to 2016. The specific objectives are to measure the HIV prevalence, HIV incidence, AIDS related mortality, AIDS orphans, ART and PMTCT needs as well as impact of interventions.

The 2013 HIV and AIDS estimates and projections were generated using the Estimation and Projection Package (EPP 2009v) and ***Spectrum software version 5.01*** from the Joint UNAIDS Programme on HIV and AIDS (UNAIDS) based on primary data collected from census report, antenatal clinics surveillance, population based surveys and programme data.

The summary of the 2013 Estimates of the report indicate the following:

- The national adult HIV prevalence (15-49years) was estimated at 14.99% (14.24-15.70)
- The provincial adult HIV prevalence ranged from 12.6% to 20.4%, with Bulawayo province recording the highest (20.4%) and Harare province the least (12.6%)
- The HIV prevalence among young population (15-24years) was estimated at 5.31%
- The total number of adults and children living with HIV was estimated at 1.4 million
- The AIDS related deaths decreased from 66,052 in 2012 to 63,853 in 2013.
- The total numbers of orphans have also decreased from 934,707 in 2012 to 889,339 in 2013.
- The national PMTCT coverage was estimates at 82.1%
- The national adult ART coverage was estimated at 76.8% and paediatric ART coverage at 40.5%
- Death averted by ART were 45,422 and infection averted by PMTCT were 14,928

Zimbabwe HIV epidemic is dynamic and heterogeneous. With increased amount strategic information made available on the epidemic in this report there is greater understanding on the levels and trends of HIV infection in specific areas amongst specific population groups.

Appropriate programme response based on this evidence is required for successful control of the HIV epidemic in the country. Further analysis needs to be undertaken to understand the epidemic at district level since this report provides a National and Provincial picture only, so that program interventions can be tailored according to local epidemic context.

2. Summary of Country Profile

Zimbabwe has a total population of 13 061 239and an overall sex ratio of 93 males per 100 females (Census 2012)

Table 1: Summary of Zimbabwe Population Demographics

Indicator	Value
Adults Population (15 + years) (*Census 2012*)	
Male	3 599 411
Female	4 089 557
Total	7 688 968
Children Population (0-14 years)	
Male	2 681 128
Female	2 691 143
Total	5 372 271
Total Population	13 061 239
Total Fertility Rate (Zimbabwe Demography and Health Survey (ZDHS) 2010-11)	**3.8**
Expected pregnancies (Ministry of Health and Child Welfare, Zimbabwe 2012)	**412 120**
*Antenatal coverage for pregnancy in five years preceding survey (ZDHS 2010-2011)	**90 %**
Institutional deliveries in five years preceding survey (ZDHS 2010-2011)	**65%**

Average Annual Inter-Censal Population growth rate	1.1%
Average Life expectancy at Birth	58

***** This indicator included women who attended at least one antenatal care session at a health facility regardless of whether they went on to deliver at health institutions or not.

The population is relatively young, with 41% of the population with age below 15 years and about 4% aged 65 years and above (Census Report 2012)

3. Background

Zimbabwe has a generalized epidemic with a national prevalence of 15% (ZDHS 2010-11). The prevalence is lowest in Harare Province (13%) and highest in Matabeleland South Province (21%), however there are some hotspots such as resettlements, mines and border towns. The prevalence is slightly higher in urban areas (%) than rural areas (%). The HIV transmission is mainly heterosexual. In the last decade there was a decline in new HIV infections.

The Government of Zimbabwe (GOZ) is strongly committed to the national response and has put in place appropriate policies, strategies, structures and instruments to ensure we achieve the three zero's (Zero new infections, AIDS related deaths, and Stigma and discrimination).

A well planned response to the HIV epidemic requires specific information on the projection of the disease over time. This projection needs to be based on previous measures of prevalence in the population as well as data from programs on their effectiveness and coverage.

UNAIDS and partners have developed software to assist countries to map their HIV epidemic and determine the consequences of the epidemic. Consequences such as number of people living with HIV, number of new infections, number of pregnant women infected with HIV, mortality due to AIDS and treatment needs are all provided from these programs. From these data countries can estimate their potential service and pharmaceutical needs, can plan for health care service requirements, and can get a general understanding of the overall impact of their response.

In order to monitor the epidemic, the country utilized UNAIDS statistical modeling Estimation and Projection Package (EPP) to estimates trends in the epidemic. These estimates also provide a basis for country comparison.

Unfortunately, owing to the changes in data, methods and software, estimates generated from different year outputs are not directly comparable. Only the estimates produced by the same version of the software in the same year should be compared.

HIV estimates, projections and modeled data from Spectrum Software are used for multiple purposes, to advocate for resources, focus prevention activities, alert programme managers and other key decision makers to potential changes in treatment needs and generally understand the impact of the HIV epidemic on the demographics in the country. HIV Estimates and projections are also used for setting national strategic plan targets. At global level, national values are combined to create regional and global estimates. The robustness of the estimates can be assessed against the input estimates collected in population surveys, antenatal sentinel surveillance and HIV and AIDS interventions program data. These estimates are critical for focusing the development agenda. In addition these estimates are used to monitor the 2011 Political Declaration on HIV and AIDS which was accepted by all United Nation Member States including Zimbabwe.

4. Objectives

The overall objective of this report is to presents the national and provincial HIV and AIDS estimates for Zimbabwe in 2013 and projections up to 2016.

Specifically to provide national and provincial estimates and projections on the following indicators

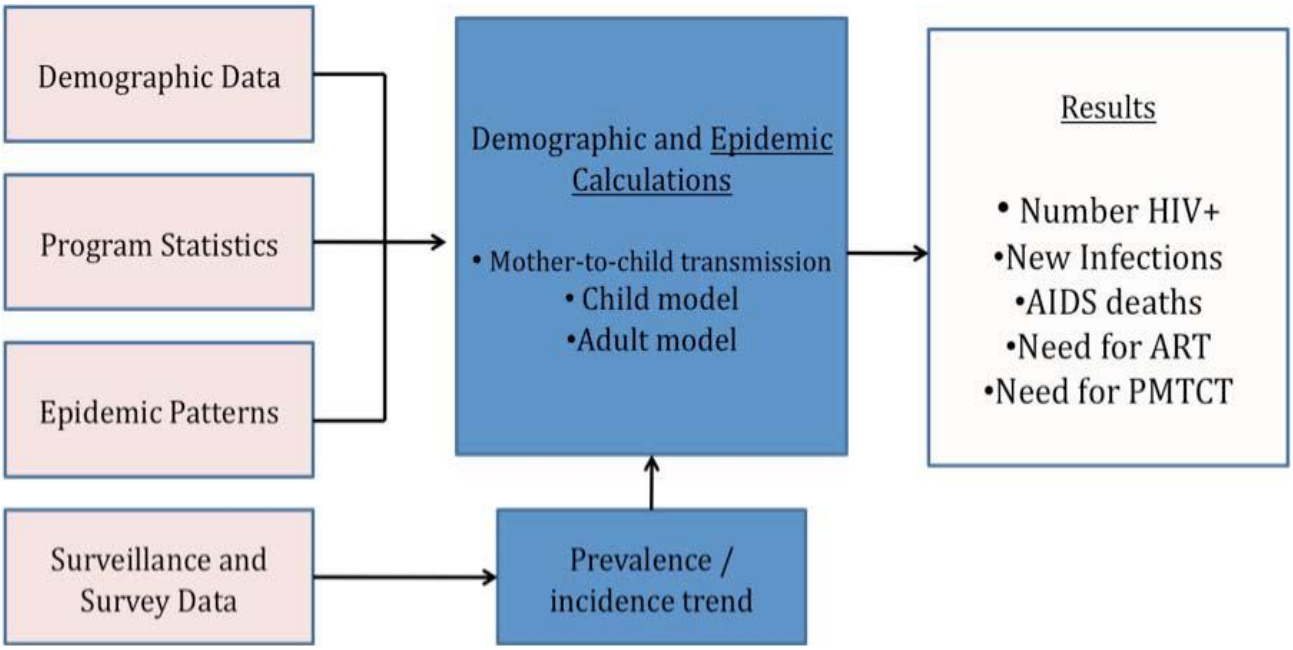
- the HIV prevalence and incidence among adults and children
- the number of adults and children living with HIV and AIDS
- the number of AIDS deaths among adults and children
- the number of adults and children in need of ART
- the number of pregnant women in need of PMTCT
- the number of children orphaned by AIDS
- the impact of the national response on the HIV epidemic

5. Methods

The method used to come up with estimates and projection was statistical modelling using Epidemic Projections Package (EPP 2009) and Spectrum version 5.01 available on website http://www.futuresinstitute.org/Download/Spectrum/SpecInstall.EXE / . Data from the most recent Zimbabwe Demographic and Health Surveys (ZDHS), Census, Antenatal clinic sero-surveillance, Prevention of Mother to Child Transmission of HIV (PMTCT) program data and Antiretroviral Therapy (ART) program data was entered into EPP 2009 and Spectrum 5.01 to generate estimates and projections up to 2016.

The software package consists of two major models. The first model, (EPP), estimates HIV prevalence and incidence by age and year in the general population... The second model, *Spectrum 5.01*, uses these estimates to assess the impacts of HIV by year, sex and age such as the number living with HIV that require ART, orphans due to HIV, and HIV related deaths.
The 2013 *Spectrum 5.01* ***model*** uses the maximum likelihood method to fit the data from ANC surveillance to create separate rural and urban prevalence curves that are calibrated to national estimates using the ZDHS data points. Bayesian melding is used to generate multiple curves to reflect uncertainty in prevalence curves[1,2]. In this model, both incidence and prevalence are automatically transferred to *Spectrum 5.01*. The tools in *Spectrum 5.01* can then be used to examine programme level outputs, e.g. annual new HIV infections, numbers of people currently living with HIV, HIV-related deaths, number of AIDS related orphans, and number in need of ART and PMTCT. The flow chart in figure 1 summarizes the requirements and outputs of spectrum.

Figure 1: Diagram of Spectrum AIDS Impact Module



Source: Methodology – Understanding the HIV estimates (UNAIDS - 2013)

The following Zimbabwe-specific demographic data defaults were used Spectrum 5.01:

- First year population (1970);
- Age Specific Fertility Rates (ASFR)
- Sex ratio at birth;
- Model Life Tables (Coale Demeny North); and
- International migration rates (IMR).

Epidemiologic data from the 1994, 1999, 2005/06 and 2010/11 ZDHS surveys were used[3]:

- Total Fertility Rate (TFR);
- Life expectancy

The following programme data inputs were used;(Annex 1)

- 2004-2013 ART programme data for the adult population (15-49 years) and 2005–2013ART and cotrimoxazole for 0-14 years[4].
- 2004-2013 PMTCT programme data on Single Dose Nevirapine (SdNVP) and data on more efficacious regimen from the national database[5]

Other key assumptions incorporated into model include;

- Base year of HIV incidence used was 1970
- For purposes of generating national and provincial estimates a CD4 count of less than 350 was base in need of treatment. All HIV infected children 2 years and below are eligible to start treatment regardless of their CD4 count and children above 2 years would be eligible for ART depending on CD4 per cent or CD4 count[6].
- All demographic assumptions are derived from the estimates and projections of United Nations. World Population Prospects: The 2013 Revision. Distributions of net migrants by age and sex are provided for illustrative purposes only. Migration figures are based on United Nations migration data.(UN updated population figures that include Zimbabwe 2012 census data were used)
- Total Fertility Rate (TFR) from ZDHS: 1988=5.4, 1994=4.3, 1999=4, 2006=3.8, 2010=4.1. We interpolated within different year intervals
- For projections eligibility for ART in adults, children and pregnant women was based on WHO 2013 guidelines
- Program coverage beyond 2013 were based on revised targets in the national M & E system
- Eastern Africa mortality data was used due its similarity with the mortality pattern of Zimbabwe. The default data for Southern African countries was not used because it had higher figures due to high HIV infection among miners in South Africa that will tend to over estimate[1].

6. Results

a) National Estimates

This section presents results of the 2013 estimates is based on the 2010 national treatment eligibility criteria of CD4 cell count ≤ 350 and TB/HIV co-infection treatment irrespective of CD4 cell count.

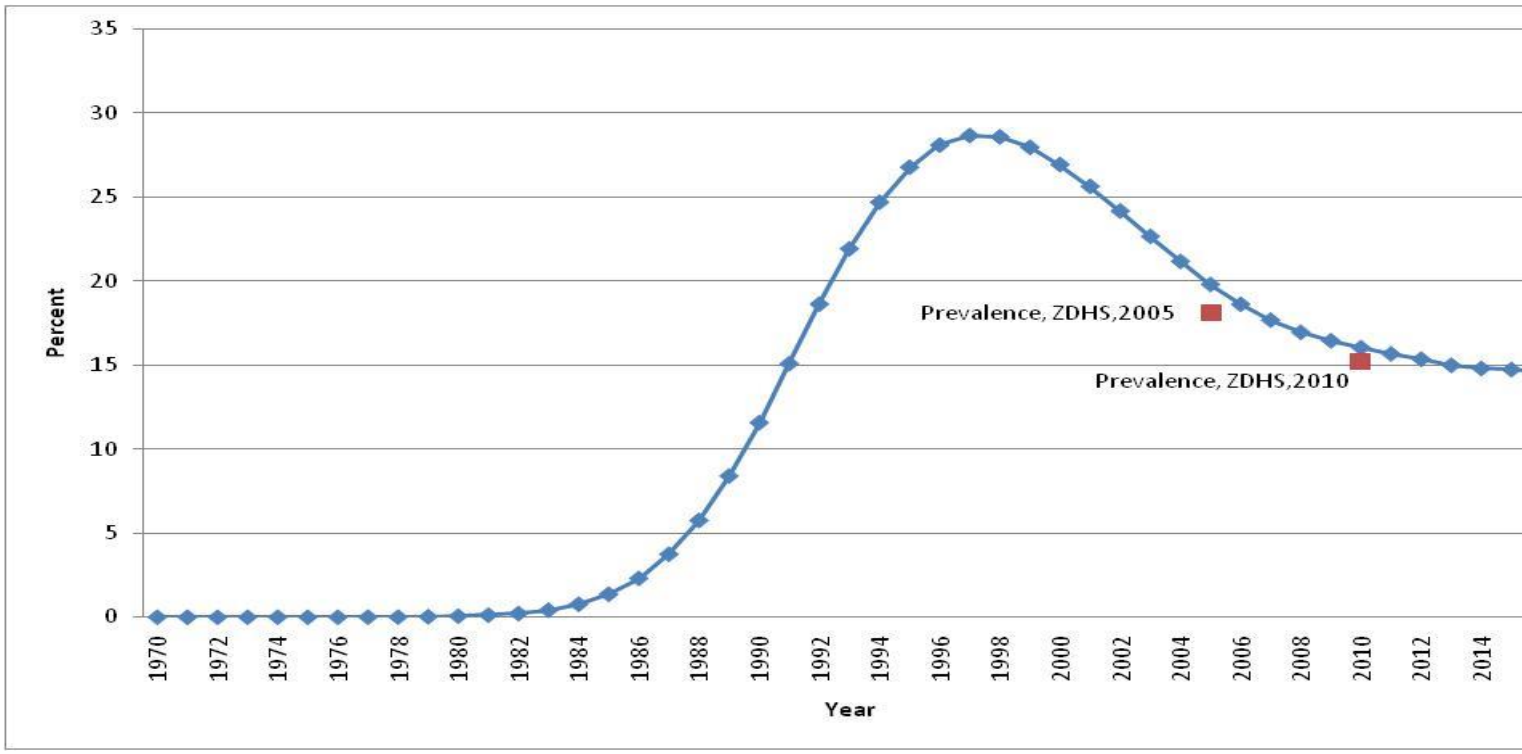
i) HIV Prevalence Estimates in Zimbabwe

Table 2: Estimated HIV prevalence in adults and children 2011 – 2016

Age group	2011	2012	2013	2014	2015	2016
15-49	15.67 (14.9-16.4)	15.35 (14.61-16.06)	14.99 (14.24-15.7)	14.8 (14.03-15.55)	14.74 (13.91-15.57)	14.57 (13.18-18.78)
15 - 24 Males	4.1 (2.96-5.74)	4.1 (3.02-5.7)	4.06 (3.05-5.57)	4.07 (3.09-5.48)	4.11 (3.16-5.44)	4.06 (-0.64-9.14)
15-24 Females	6.84 (6.19-8.2)	6.72 (6.06-8.06)	6.55 (5.88-7.86)	6.42 (5.74-7.7)	6.33 (5.65-7.55)	6.06 (-0.62-9.8)
Children 0 - 14	3.64 (3.28-4.01)	3.29 (2.95-3.64)	2.99 (2.99-3.34)	2.66 (2.36-2.97)	2.37 (2.09-2.65)	2.11 (1.86-2.38)

There was a decline of HIV prevalence for 15-49 age group however the decline was not statistically significant between 2012 and 2013 as the confidence intervals are overlapping. In 2013 the prevalence was 1.6 times higher in females than in males for the 15-24 age groups.

Figure 2: Trends in adult (15-49 years) HIV prevalence and ZDHS 2005/6 and 2010/11



The HIV epidemic in Zimbabwe is stabilizing, although the prevalence is still high (14.99% in 2013). The same trend is noted in the ZDHS reports.

Table 3: HIV prevalence by geographic location

Place of residence	2011	2012	2013	2014	2015	2016
Urban	14.34	15.28	15.11	14.9	14.64	14.25
Rural	15.41	14.19	13.95	13.72	13.45	13.06
National	15.67	15.35	14.99	14.8	14.74	14.57

HIV prevalence is slightly higher in urban areas than in rural areas across all years except in 2011. Results of the 2010/11 ZDHS (Urban 17% and Rural 15%) show a similar distribution but slightly higher figures. These values should be quoted with caution because the DHS still remains the most reliable and representative population based survey (Table 3).

ii) Estimated numbers of people living with HIV and AIDS

Table 4: Estimated number of PLHIV in Zimbabwe

HIV population	2011	2012	2013	2014	2015	2016
HIV Adults + Children	1,356,010 (1,304,730-1,406,458)	1,373,995 (1,321,245-1,426,063)	1,390,211 (1,334,655-1,445,315)	1,420,604 (1,359,431-1,478,950)	1,462,662 (1,395,649-1,533,259)	1,498,414 (1,329,998-2,094,633)
Adults 15+	1,159,988 (1,119,610-1,202,549)	1,192,007 (1,149,933-1,236,798)	1,219,494 (1,172,632-1,267,235)	1,263,887 (1,210,937-1,317,166)	1,318,087 (1,257,254-1,383,404)	1,364,894 (1,199,980-1,963,429)
Female 15+	684,671 (656,157-711,057)	704,904 (675,131-731,728)	722,557 (692,197-750,812)	748,451 (715,675-780,678)	779,606 (742,540-815,976)	807,196 (730,942-1,010,311)
Adults 15-49	1,038,657 (993,350-1,083,789)	1,062,788 (1,016,601-1,107,767)	1,081,960 (1,033,446-1,130,923)	1,114,558 (1,061,112-1,168,761)	1,154,323 (1,094,684-1,217,569)	1184826 (1069056-1621778)
Children 0-14	196,022 (177,912-213,850)	181,988 (163,944-200,563)	170,717 (153,126-189,165)	156,718 (140,450-174,280)	144,575 (128,862-161,350)	133,520 (118,422-149,858)

It is estimated that 1,390,211 adults and children were living with HIV in 2013. This number is expected to continue increasing gradually through 2016. Of the total number of people living with HIV in 2013, 12% (170,717) were children 0-14 years. In the same year the proportion of women (above 15 years) living with HIV, was 52%. (Table 4)

Figure 3: Estimated total number of adults and children living with HIV

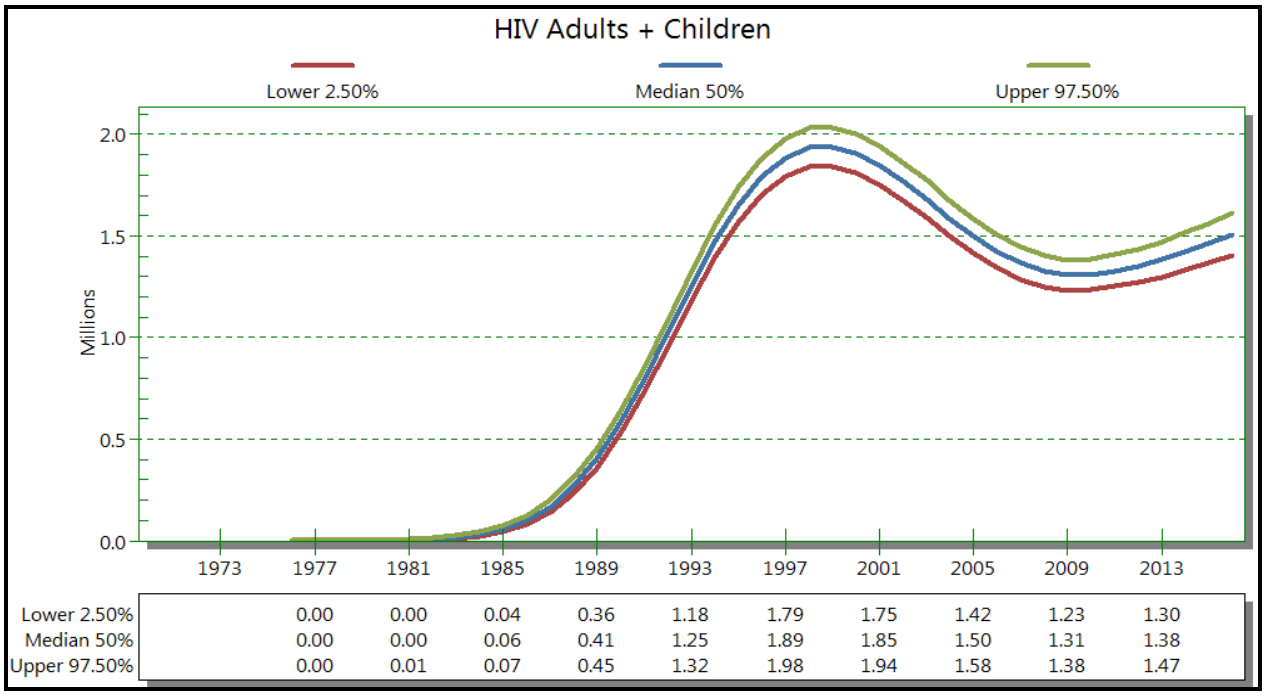


Figure 3 shows a sharp increase in number of people living with HIV from 1985 to 1999 and then a decline till 2009. Since then a gradual increase is noted in the number of people living with HIV in the country.

iii) HIV Incidence in Zimbabwe

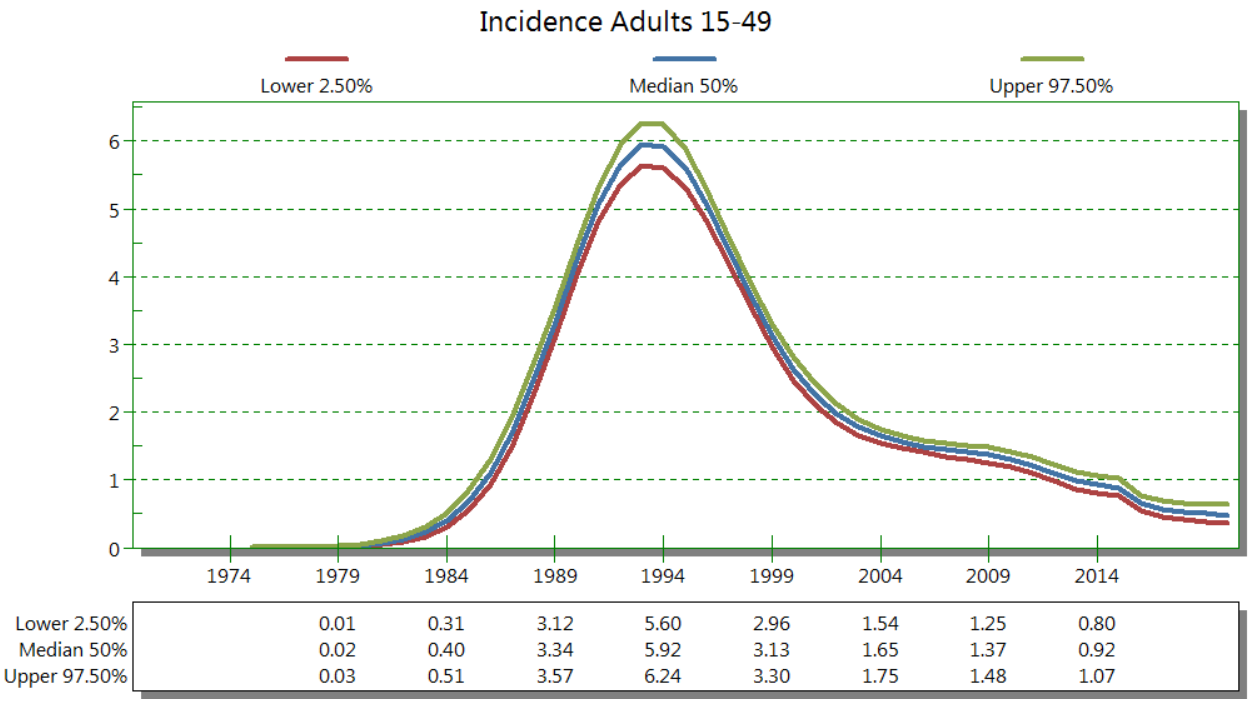
1) Incidence measures

Table 5: Estimate of HIV incidence among adults (15-49 years), 2011-2016

	2011	2012	2013	2014	2015	2016
HIV incidence	1.21 (1.1-1.33)	1.1 (0.99-1.22)	0.98 (0.86-1.11)	0.92 (0.8-1.07)	0.88 (0.76-1.03)	0.65 (0.54-0.77)

HIV incidence rate is expected to continue declining until 2016 (Table 5).

Figure 4: HIV incidence among adults (15-49years)



The trend in HIV incidence had a sharp increase from 1982, peaked in 1994 and declined sharply from then up to 2010 and gradually declined below 1.0 thereafter.

2) Estimates of numbers of new infections

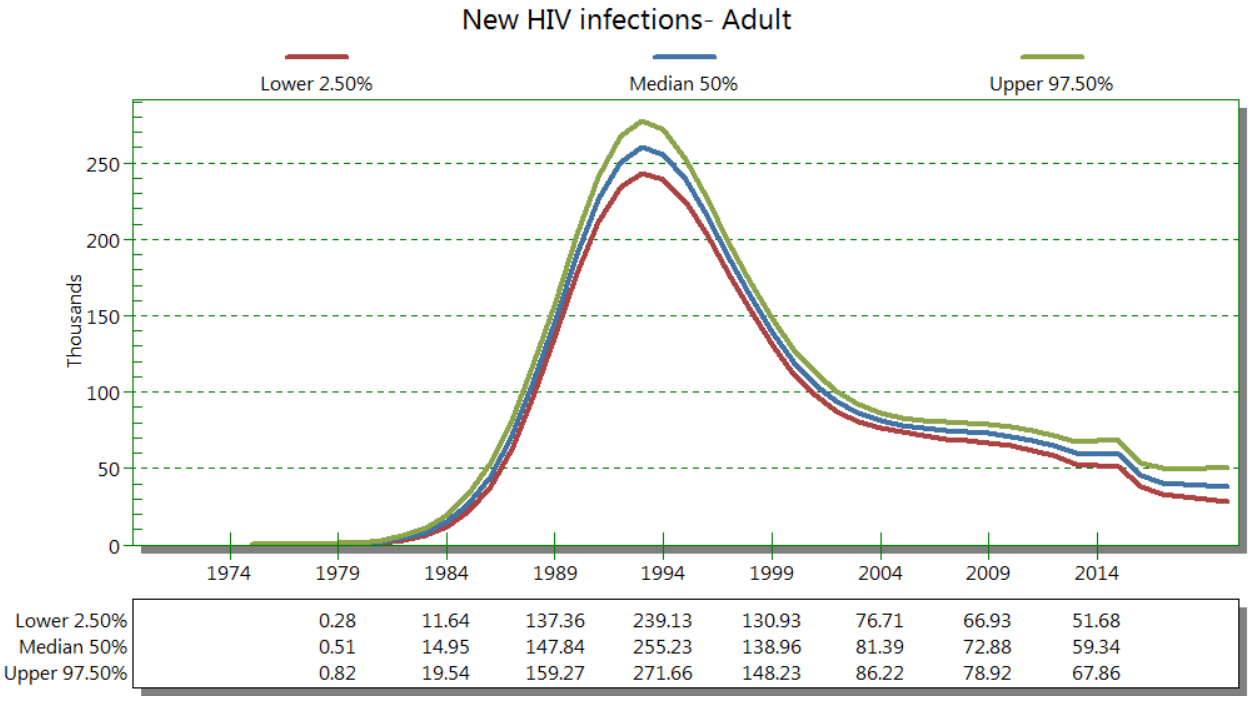
Table 6: Estimated number of new infections in Zimbabwe, 2011- 2016

Number of new infections	2011	2012	2013	2014	2015	2016
Adults & Children	85,724 (78,357-93,219)	72,259 (64,534-80,269)	69,105 (60,673-77,502)	62,926 (55,018-71,452)	62,830 (54,799-71,451)	48,999 (41,555-57,484)
Adults 15+	68,194 (61,817-74,654)	64,743 (58,245-71,576)	60,147 (52,939-67,653)	59,339 (51,681-67,864)	59,281 (51,295-68,032)	45,500 (38,294-53,765)
Children 0-14	17,530	7,516	8,958	3,587	3,550	3,499

	(15,006-20,222)	(4,889-10,483)	(6,135-11,968)	(3,175-4,073)	(3,128-4,051)	(3,065-4,106)
Children Under 1	13,898	5,700	6,797	2,661	2,620	2,572
Male	7,018	2,878	3,432	1,344	1,323	1,299
Females	6,880	2,822	3,365	1,317	1,297	1,273
Children Under 2	28,993	17,592	12,944	8,784	5,259	5,061
Children 1 – 4	3,631	1,815	2,161	926	930	927
Male	1,824	912	1,086	465	467	466
Females	1,807	903	1,075	461	463	461

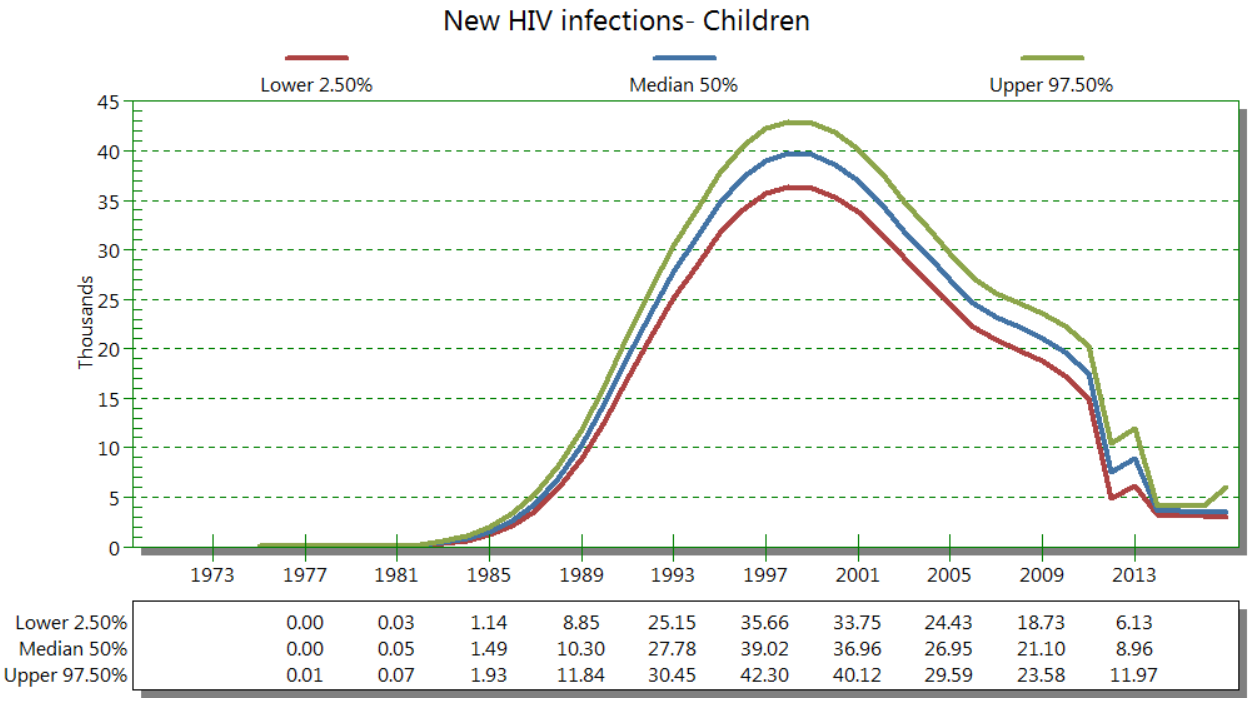
It is estimated that there were 69,105 new HIV infections in 2013 of which 8,958 were in children 0-14 years old. Generally there is decline in the number of new HIV infection among both adults and children over the years (Table 6). Due to the limited availability of data in the model the estimates for children are presented without confidence intervals.

Figure 5: Trends in new HIV infections among adults (15-49 years)



The estimated number of new infections rose sharply from 1984, peaked in 1994 and has since been declining.

Figure 6: Estimated number of new HIV infections among children (0-14 years)



The estimated number of new HIV infection among children rose sharply from 1985, peaked in 1997 and has since been declining.

iv) Estimates of HIV and AIDS related Deaths

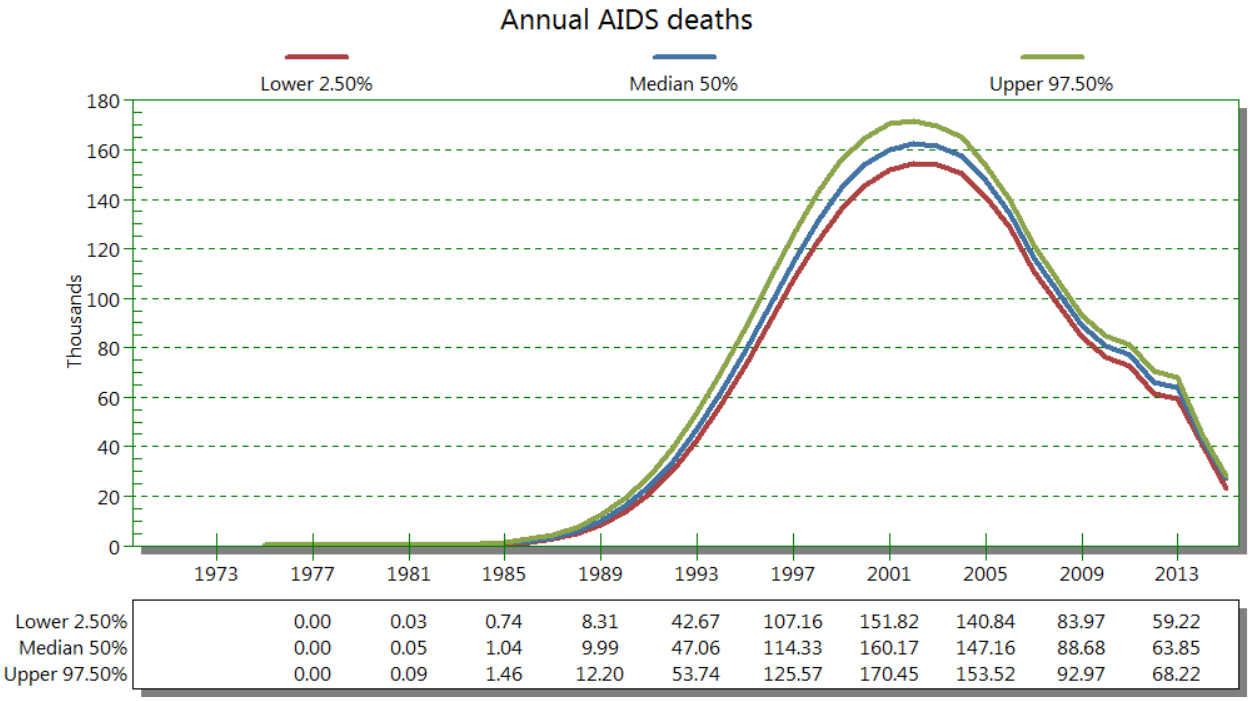
Table 7: Estimated number of AIDS related deaths, 2011-2016

HIV & AIDS related deaths	2011	2012	2013	2014	2015	2016
Annual deaths Adults & Children	76,934 (72,589-81,238)	66,052 (61,644-70,292)	63,853 (59,222-68,219)	42,534 (40,490-44,618)	26,850 (23,048-27,955)	18,365 (-320,018-192,921)

Annual deaths Adults 15+	63,838 (60,515-66,933)	55,700 (52,388-58,782)	55,112 (51,645-58,333)	36,358 (34,901-37,720)	22,562 (19,145-23,257)	15,029 (-317,728-186,588)
Annual deaths Children 0-14	13,096 (11,337-14,963)	10,352 (8,648-12,147)	8,741 (7,092-10,553)	6,176 (5,236-7,181)	4,288 (3,771-4,861)	3,336 (2,882-3,890)

There was a decrease in estimated annual AIDS related deaths in adults and children (Table 7). There is general decline in the number of AIDs related deaths across all age groups over the years. There will be an expected decline in annual deaths from 63,853 in 2013 to 42,534 in 2014 due to implementation of the 2013 guidelines

Figure 7: Trends in annual AIDS related deaths



The estimated annual AIDS related deaths increased sharply from 1989, peaked in 2003 and have been declining since then.

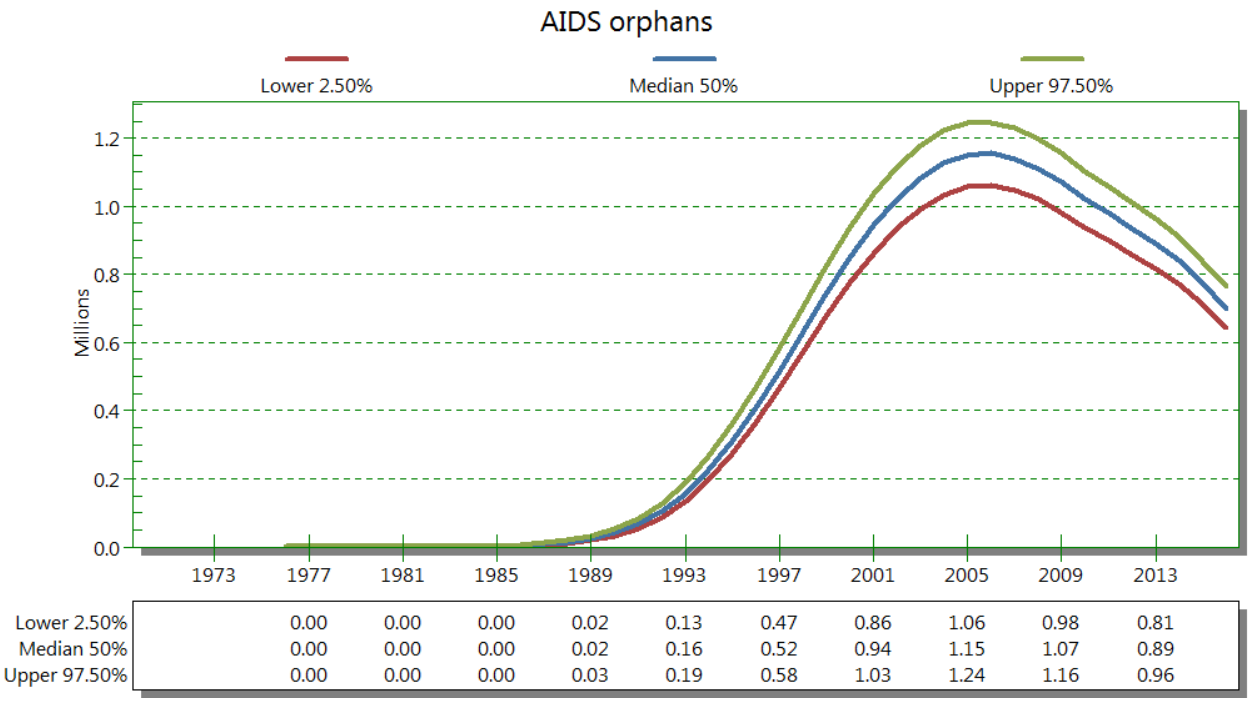
v) Estimates of number of HIV and AIDS related Orphans

Table 8: Estimated number of HIV and AIDS orphans, 2011-2016

	2011	2012	2013	2014	2015	2016
AIDS Orphans (0-14)	980316 (898,730 - 1,058,525)	934707 (857,322 - 1,009,159)	889339 (814,852 - 960,781)	841939 (773,062 - 909,268)	774511 (711,415 - 836,255)	699092 (641,902 - 764,403)

Table 8 shows that the estimated number of AIDS related orphans is continually declining through 2016.

Figure 8: Estimated number of AIDS related Orphans



The estimated AIDS related orphans increased sharply from 1993, peaking in 2005 and have been declining since.

vi) ART and PMTCT Needs and Impact

This section presents the estimated ART and PMTCT needs which can be used to calculate programme coverage and identify gaps in relation to service uptake.

1) Program needs

The estimated program needs are outlined in table 9.

Table 9: ART and PMTCT program needs, 2011-2013

Program needs	2011	2012	2013
Need for ART (Adults 15+) 31 Dec	681,283 (666,196-696,497)	748,492 (732,565-763,917)	806,273 (791,098-822,530)
Need for ART (Children 0-14) 31 Dec	113,663 (102,735-125,076)	105,286 (94,317-117,177)	114,356 (102,126-127,689)
Mothers needing PMTCT 31 Dec	70,473 (63,262-77,971)	70,346 (62,991-78,194)	70,280 (62,690-78,441)

There is a statistically significant increase in the number adults (15+ years) in need of ART from 2012 to 2013 (Table 10) . The estimated number of pregnant women needing PMTCT will remain almost static. This may be due to an increase in access to HIV counselling and testing services in the country as well as paediatric patients graduating and thus adding to the adult population.

2) Program Coverage

The model calculates program coverage using program data as the numerator and the calculated in need using the generated in need as the denominator.

Table 7: Estimates coverage

Program coverage estimates	2011	2012	2013
ART Coverage (Adults)	68.58	69.31	76.77
PMTCT coverage	55.47	85.23	82.05
ART Coverage (Children)	36.46	44.52	40.50

Adult ART coverage has increased steadily. PMTCT coverage decreased slightly between 2012 and 2013. In 2011 Zimbabwe adopted the WHO guidelines which entail initiation of eligible women on ART with CD4 ≤ 350, and provision of ARV prophylaxis from 14 weeks gestational age. The change in treatment protocols may explain the slight decline in the coverage as health workers received training initiated the women on triple therapy.

3) Program Impact Estimates

Table 11: Impact of Program Interventions

Program impact estimates	2011	2012	2013
Deaths averted by ART (Adults and Children)	39,855	46,506	45,422
Deaths averted by ART (0-4)	764	739	558
Deaths averted by PMTCT (0-4)	2,862	4,651	5,559
Infections averted by PMTCT	6,473	16,451	14,928
Life years gained by ART and PMTCT	206,544	264,502	323,720

There is a slight decline in the total number of deaths averted between 2012 and 2013. A similar pattern is observed in children. These declines may be a reflection of decline in program data submission during periods when the country is changing implementation guidelines. Overally, the number of life years gained increased between 2012 and 2013.

b) Provincial Estimates

i) Provincial HIV Prevalence Estimates (Adults)

Table 12: Provincial Adult HIV Estimates on Prevalence, Incidence and Deaths 2013

	Bulawayo	Harare	Manicaland	Mash East	Mash Central	Mash West	Masvingo	Mat North	Mat South	Midlands
HIV Prevalence										
Prevalence (15-49)	20.36	12.62	14.53	14.42	13.77	12.84	13.03	15.52	18.62	13.6
Total HIV population	88,673	155,496	158,858	120,766	94,914	117,441	125,458	68,882	77,735	140,711
Male	36,010	63,146	64,511	49,043	38,544	47,692	50,948	27,973	31,568	57,142
Female	52,663	92,350	94,346	71,724	56,370	69,749	74,510	40,909	46,167	83,569
New HIV infections										
Incidence (15-49) %	2.46	0.68	0.87	0.91	0.84	0.54	0.8	0.82	1.41	0.76
Total new infections	8,584	6,690	7.595	6,122	4,616	3,923	6,126	2,903	4,706	6,287
Male	3,715	2,895	3,287	2,649	1,997	1,698	2,651	1,256	2,037	2,721
Female	4,869	3,795	4,308	3,472	2,618	2,225	3,475	1,647	2,670	3,566
Annual AIDS deaths										
Total Annual AIDS deaths	3,796	6,656	6,800	5,170	4,063	5,027	5,371	2,949	3,328	6,024

Male	1,863	3,267	3,337	2,537	1,994	2,467	2,636	1,447	1,633	2,956
Female	1,933	3,390	3,463	2,633	2,069	2,560	2,735	1,502	1,695	3,067

The provincial HIV prevalence in 2013 ranged from 12.6 % to 20.4% with Harare Province recording the least and Bulawayo Province the highest prevalence. There were more people living with HIV in Manicaland Province compared with other Provinces, while the least were in Matebeleland North Province. Population size did not determine prevalence of HIV among provinces. In all Provinces the magnitude of females living with HIV was about 1.5 times that of males indicating a higher need for HIV care and support for females.

The incidence ranged between 0.54 and 2.46 across the ten provinces of the country. It was highest in Bulawayo (2.46) followed by Matabeleland South (1.4) and lowest in Mashonaland West (0.5). Manicaland Province (5, 371) had the highest number of deaths and the least is Matebeleland North Province (3,328).

There has been a general decline in adult HIV prevalence in all Provinces from 2011 to 2013 except for Bulawayo Province.

The highest number of annual deaths was in Manicaland province while the least were in Matabeleland North. The provincial estimates showed that more women than men died in all provinces.

ii) Provincial HIV Prevalence Estimates (Children)

Table 13: Estimated number of people living with HIV & AIDS, incidence and deaths in children 0-14, 2013

	Bulawayo	Harare	Manicaland	Mash East	Mash Central	Mash West	Masvingo	Mat North	Mat South	Midlands
HIV population										

Total	12,488	21,899	22,372	17,008	13,367	16,539	17,668	9,701	10,948	19,817
Male	6,273	11,000	11,238	8,543	6,714	8,308	8,875	4,873	5,499	9,954
Female	6,215	10,899	11,135	8,465	6,653	8,232	8,794	4,828	5,449	9,863
New HIV infections										
Total	546	958	979	744	585	724	773	424	479	867
Male	276	483	494	375	295	365	390	214	242	437
Female	271	475	485	369	290	359	383	210	237	430
Annual AIDS deaths										
Total	605	1,061	1,084	824	648	801	856	470	530	960
Male	304	533	545	414	325	403	430	236	266	482
Female	301	528	540	410	322	399	426	234	264	478

The estimated number of children aged 0-14 years living with HIV is highest in Manicaland and least in Matabeleland North. This pattern is also seen among males and females with Manicaland Province being the highest and Matabeleland North Province being the least compared to other provinces. There is no significant difference among boy and girls living with HIV across Provinces. The annual new infections among children in 2013 were highest in Manicaland Province (979) and lowest in Matabeleland North (424). There was no significant difference in the pattern of new infections among males and females across all Provinces. Manicaland Province had the highest number of deaths (1084) while Matabeleland North had the least (470).

iii) Estimated number of people living with HIV & AIDS adults 15- 49

Table 14: Estimated number of people living with HIV & AIDS adults 15- 49

	Bulawayo	**Harare**	**Manicaland**	**Mash East**	**Mash Central**	**Mash West**	**Masvingo**	**Mat North**	**Mat South**	**Midlands**
2011	77,666	149,106	150,100	114,044	88,862	115,420	117,600	65,582	72,141	133,544
2012	83,518	151,795	155,089	117,885	92,170	116,474	121,791	67,340	75,158	137,548
2013	88,673	155,496	158,858	120,766	94,914	117,441	125,458	68,882	77,735	140,711

2014	94,386	160,617	164,718	124,280	98,338	122,295	130,508	70,715	80,695	145,037
2015	101,420	168,628	171,134	128,527	102,510	125,440	137,232	72,969	84,276	150,701
2016	107,759	173,726	176,425	132,717	106,007	128,213	142,422	75,220	87,465	155,585

The highest number of people living with HIV among adults was found in Manicaland followed by Harare while the least was in Matabeleland North Province in 2013. It is estimated that the number of adults living with HIV will continue increasing through 2016 in all provinces. This may be due to prolonged survival among patients taking lifelong ART. This trend was noted during from 2011 through 2016. The number of children living with HIV followed a distribution similar to that of adults. (Table 14 and 15) However the number of children will continue declining through 2016. Likely explanations include reduced transmission of HIV from mothers to their infants as well as older children leaving the group into the adult group.

Table 15: Estimated number of people living with HIV & AIDS children 0-14

	Bulawayo	**Harare**	**Manicaland**	**Mash East**	**Mash Central**	**Mash West**	**Masvingo**	**Mat North**	**Mat South**	**Midlands**
2011	13,537	25,989	26,162	19,878	15,488	20,117	20,497	11,431	12,574	23,276
2012	12,985	23,601	24,113	18,329	14,331	18,109	18,936	10,470	11,686	21,386
2013	12,488	21,899	22,372	17,008	13,367	16,539	17,668	9,701	10,948	19,817
2014	11,730	19,961	20,471	15,446	12,221	15,199	16,219	8,788	10,029	18,025
2015	11,097	18,451	18,725	14,063	11,216	13,725	15,016	7,984	9,221	16,489
2016	10,474	16,885	17,147	12,899	10,303	12,462	13,843	7,311	8,501	15,122

iv) Estimated number of new HIV infections

Table 16: Estimated number of new infections adults 15-49

	Bulawayo	**Harare**	**Manicaland**	**Mash East**	**Mash Central**	**Mash West**	**Masvingo**	**Mat North**	**Mat South**	**Midlands**
2011	9,120	8,245	9,670	7,044	5,724	4,983	7,584	3,693	5,432	8,038

2012	8,624	7,542	8,446	6,432	5,121	4,544	6,861	3,206	4,955	6,981
2013	8,584	6,690	7,595	6,122	4,616	3,923	6,126	2,903	4,706	6,287
2014	8,814	6,376	7,325	5,881	4,457	3,645	6,000	2,748	4,614	6,087
2015	8,331	7,087	7,092	5,449	4,444	4,059	6,198	2,756	4,350	6,181
2016	6,548	5,215	5,341	4,070	3,350	2,974	4,632	2,082	3,252	4,624

From 2011 the estimated number of new infections will decline through 2016 in all provinces. The highest number of new infections are in Manicaland in 2011. From 2012 to 2016 Bulawayo is estimated to have the highest number of new infections. Matabeleland North province was estimated to have the lowest number of new infections from 2011 to 2016.

Table 17: Estimated number of new infections children 0-14

	Bulawayo	**Harare**	**Manicaland**	**Mash East**	**Mash Central**	**Mash West**	**Masvingo**	**Mat North**	**Mat South**	**Midlands**
2011	1,127	2,163	2,177	1,654	1,289	1,674	1,706	951	1,046	1,937
2012	414	753	770	585	457	578	604	334	373	683
2013	546	958	979	744	585	724	773	424	479	867
2014	264	450	461	348	275	343	366	198	226	406
2015	270	448	455	342	272	333	365	194	224	401
2016	273	441	447	337	269	325	361	191	222	395

New infections in children were estimated to be highest in Manicaland Province followed by Harare. Again Matabeleland North had the least number of children with new infections. There is an estimated decline in number of new infections among children in all provinces through 2016.

v) Provincial Programme Needs 2013

Table 18: Number in need of ART (Adults and Children)

Total need for ART	Bulawayo	Harare	Manicaland	Mash East	Mash Central	Mash West	Masvingo	Mat North	Mat South	Midlands
Total	60,052	105,307	107,584	81,787	64,279	79,535	84,964	46,649	52,645	95,294
Male	23,400	41,034	41,921	31,869	25,047	30,992	33,107	18,177	20,513	37,132
Female	36,652	64,273	65,663	49,918	39,232	48,543	51,857	28,472	32,131	58,162

Manicaland had the highest number of people in need of ART followed by Harare while the least were noted in Matabeleland North province. Overally the majority of people (adults and children) in need of ART were females (61%).

Table 19: Provincial Treatment Needs for Mothers in 2013

	Bulawayo	Harare	Manicaland	Mash East	Mash Central	Mash West	Masvingo	Mat North	Mat South	Midlands
Need for PMTCT	5,019	8,801	8,991	6,835	5,372	6,647	7,101	3,899	4,400	7,964

The number in of PMTCT prophylaxis ranged from 3,899 to 8,991 with Manicaland Province having the highest need (8,991) and Matabeleland North Province the least (3,899).

c) Program Projections

This section describes the program projections up to 2016 using nationally adopted eligibility criteria of CD4<500, option B+ and regardless of CD 4 count sero discordant couples, TB /HIV co-infection and High Risk groups. It is important for programme managers and policies makers to project program needs.

i) National projections

Table 20: Future program needs -based on CD4 count ≤500, irrespective of CD4 count; HIV/TB co- infection, sero-discordant couples, Option B+, High risk groups NB.

ART & PMTCT needs	2014	2015	2016
Need for ART (Adults) 31 Dec	1,152,077 (1,107,185-1,197,734)	1,226,371 (1,172,599-1,283,573)	1,288,068 (1,110,324-1,880,098)
Need for ART (Children) 31 Dec	121,111 (108,114-135,046)	112,802 (100,408-126,433)	107,771 (951,87-121,041)
Mothers needing PMTCT 31 Dec	70,133 (62,325-78,418)	70,149 (62,025-78,799)	69,758 (61,318-79,551)

The number of clients in need of ART is projected to increase up to 2016, whilst mothers in need of PMTCT are expected to gradually decline.

7.0 Discussion and Conclusions

The HIV prevalence in Zimbabwe has remained stable since 2012 while the HIV incidence and estimated number of HIV related deaths is decreasing among adults and children. The relative stabilization of the HIV prevalence can thus be attributed to decline in new infections and AIDS related mortality. The decrease in AIDS related mortality may be attributed to the contribution of an effective ART program. The decline in HIV incidence is likely due to the impact of behaviour change programs and high ART coverage among the HIV positive population. In line with global reports, the HIV incidence rate has declined by over 50% in the past decade. [8] The reduced mortality and number of AIDS orphans clearly shows the positive impact that can be achieved through high treatment coverage.

According to the current HIV estimates PMTCT needs have increased. Using the DHS data, fertility rates have been observed to increase among women of child bearing age irrespective of HIV status meaning that more women are falling pregnant including those HIV infected. [8] Zimbabwe, being a signatory to the Global Elimination agenda and keeping mothers alive, needs to increase its investment on PMTCT for initiation of HIV infected pregnant and lactating mothers on lifelong antiretroviral therapy. The country is rolling out Option B+ thus fewer mothers are expected to be on prophylaxis. Thus the number in need of PMTCT prophylaxis is expected to continue declining.

Paediatric need for ART is declining. This can be attributed to the impact of the PMTCT program. The current estimates are showing significant gains in areas such as reduction in mortality, number of new infections averted and life years gained, likely to have been realised as a result of the scale up in the national response.

The need for antiretroviral therapy will increase from 2014, following the adoption of the new WHO guidelines and Option B+ in the country. Therefore the need for ARV prophylaxis is expected to decline as more mothers are put on triple therapy as part of option B+. There is need for the Ministry of Health and Child Care, National AIDS Council and partners to increase

investment in ART programs. Careful planning and vigorous resource mobilization remain critical steps in the implementation of the new treatment guidelines.

Political commitment in the national response has contributed to the achievements of the early adoption and implementation of the 2013 WHO guidelines on treatment and PMTCT, male circumcision and other behavioural change programmes. A high TB/HIV collaboration treatment coverage has also significantly contributed to this impact. For Zimbabwe to continue improvements on the gains made there is need to quickly adopt the new innovative high impact interventions such as treatment as prevention among discordant couples.

These results have shown that provincial estimates mirror national estimates with minor differences. Similar geographic distribution of HIV was noted for adults and children in terms of the people living with HIV. Trends show adults living with HIV increasing. This may be attributed to the ART program whereby more people are surviving on ART. Within the provinces the numbers of children living with HIV are expected to decline possibly due to the PMTCT program. The highest burden of HIV has been noted in Manicaland and Harare while Matabeleland North has the least burden, both new infections and number with HIV infection. This enables targeted resource allocation based on disease burden and need. This allows for effective use of resources. The National HIV Estimates will now be conducted each year by March in line with the Global AIDS Progress Report (GARPR) and Universal Access reporting and will be part of these reports. There is need for health facilities, districts, provinces and Central hospitals to submit data timely to meet reporting deadlines.

8.0 HIV Estimates Summary Tables

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Appendices

1. Input data into spectrum
2. Summary Tables and Scenarios

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