Moçambique

Survey of Indicators on Immunization, Malaria and HIV/AIDS

2015

Supplemental Report Incorporating Antiretroviral Biomarker Results

Mozambique

Survey of Indicators on Immunization, Malaria and HIV/AIDS in Mozambique (IMASIDA) 2015

Supplemental Report Incorporating Antiretroviral Biomarker Results

Ministério da Saúde (MISAU)

Instituto Nacional de Estatística (INE)

With Technical Assistance from ICF

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Implementing Agencies:

Donor Agencies:

This supplemental report presents the results of the Survey of Indicators on Immunization, Malaria and HIV/AIDS in Mozambique (IMASIDA 2015), conducted by the National Institute of Health—*Instituto Nacional de Saúde*—(INS) of the Ministry of Health (MISAU), in collaboration with the National Institute of Statistics—*Instituto Nacional de Estatística*—(INE). The survey was supported with technical assistance from ICF, through The Demographic and Health Surveys (DHS) Program. Additional technical assistance was provided by the US Centers for Disease Control and Prevention (CDC), through its office in Mozambique. The survey was funded by the US Agency for International Development (USAID) through the President's Malaria Initiative (PMI), the Global Fund (rounds 8 and 9), the World Health Organization, UNICEF, Health Alliance International/University of Washington (HAI/UW), UNFPA, the National Council to Combat HIV and AIDS—*Conselho Nacional de Combate ao HIV e SIDA*—(CNCS), through its Common Fund and the President's Emergency Plan for AIDS Relief (PEPFAR), through CDC.

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CONTENTS

TABLES AND FIGURES

PREFACE

The Survey of Indicators on Immunization, Malaria and HIV/AIDS in Mozambique (IMASIDA 2015) is the second population-based survey that measures HIV and malaria, and other relevant indicators of women's and children's health, across all social strata. The importance of updating key health indicators, including for HIV/AIDS and malaria, encouraged the Ministry of Health and its partners, through the National Institute of Health, to implement the Survey of Indicators on Immunization, Malaria and HIV/AIDS, with the vision of producing the statistical information required to support evidence-based decision making.

It is with great satisfaction that we present the results of IMASIDA 2015. We hope that the findings contained here will inform new intersectoral and health policies, raise quality of life, and respond well to the needs of the population. We recognize that the challenges are enormous, particularly in rural areas and in economically vulnerable groups, where indicators are most troubling.

This report is the result of 24 months of hard work, from technical, administrative and logistic preparation to implementation, which included training, data collection fieldwork, data processing, and analysis of the indicators presented here. The Ministry of Health through the National Institute of Health congratulates all organizations and professionals who have contributed substantially to the quality of this survey. We would particularly like to express appreciation for the technical and financial support of the United States Centers for Disease Control and Prevention (CDC) through the President's Emergency Plan for AIDS Relief (PEPFAR), the United States Agency for International Development (USAID) through the President's Malaria Initiative (PMI), The Global Fund (GF – Rounds 8 and 9), the Mozambican National Council to Combat HIV/AIDS (CNCS) through the Embassy of Canada, Health Alliance International (HAI) of the University of Washington, the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), and the United Nations Population Fund (UNFPA). The National Health Institute also thanks ICF for providing technical assistance.

We also acknowledge and congratulate the professionals and civil servants from the National Institute of Health, National Institute of Statistics, technical representatives of the IMASIDA implementing partner institutions, supervisors, interviewers, health technicians, drivers, and all entities whose participation was indispensable for this survey. Finally, on behalf of the Government of Mozambique, we are grateful to all the families and households selected to participate in the survey who gave their valuable time and provided the information to compile this report and raise awareness of the population's health situation, particularly children and women.

Director of the National Institute of Health

Ilesh V. Jani

ABBREVIATIONS

AIDS	acquired immunodeficiency syndrome
ANC	antenatal care
ART	antiretroviral treatment
ARV	antiretroviral
BASD	Bioanalytical Services Division
CDC	Centers for Disease Control and Prevention
CNCS	Conselho Nacional de Combate ao HIV e SIDA
DBS	dried blood spot
DHS	Demographic and Health Surveys
EIA	enzyme-linked immunoassay
HAI	Health Alliance International
HIV	human immunodeficiency virus
IMASIDA	Inquérito de Indicadores de Imunização, Malária e HIV/SIDA
IDS	Inquéritos Demográficos e de Saúde
INE	Instituto Nacional de Estatística
INS	Instituto Nacional de Saúde
INSIDA	Inquérito Nacional de Prevalência, Riscos Comportamentais e Informação sobre o HIV e SIDA em Moçambique
LAg	limiting antigen
MDRI	mean duration of recent infection
MISAU	Ministério da Saúde
ODn	normalized optical density
PCR	polymerase chain reaction
PEPFAR	President's Emergency Plan for AIDS Relief
PFR	Proportion false recent
PLHIV	People Living with HIV
PMI	President's Malaria Initiative
PMTCT	Prevention of Mother-to-Child Transmission
QC	Quality control
RDT	rapid diagnostic test
RITA	recent infection testing algorithm
RNA	ribonucleic acid
RSE	relative standard error
STD	calibration standard
STI	sexually transmitted infection
UNAIDS	Joint United Nations Program on HIV/AIDS
UNICEF	United Nations Children's Fund

UNFPA	United Nations Population Fund
USAID	US Agency for International Development
WHO	World Health Organization

MOZAMBIQUE


N
TANZANIA
ZAMBIA
MALAWI
Niassa
Cabo Delgado
Nampula
Tete
Zambézia
Manica
Sofala
ZIMBABWE
Inhambane
Gaza
SOUTH AFRICA
Maputo Provincia
ESWATINI
Maputo Cidade
Maputo Provincia
0 125 250 500
Kilometers

INTRODUCTION 1

The 2015 Survey of Indicators on Immunization, Malaria and HIV/AIDS—*O Inquérito de Indicadores de Imunização, Malária e HIV/SIDA*—(IMASIDA) in Mozambique was conducted under the auspices of The Demographic and Health Surveys (DHS) Program and serves to update the estimates obtained in previous surveys on HIV, AIDS and malaria, as well as other indicators on maternal and child health. The survey was designed to provide data at national and provincial levels, by area of residence, and according to selected background characteristics.

The IMASIDA was implemented by the National Institute of Health—*Instituto Nacional de Saúde*—(INS), in collaboration with the National Institute of Statistics—*Instituto Nacional de Estatística*—(INE). Data collection was conducted from June 8 to September 20, 2015. ICF provided technical assistance through The DHS Program, which is funded by the US Agency for International Development (USAID). The Government of Mozambique, through the Ministry of Health and other national institutions, as well as international agencies and organizations, facilitated the implementation of the survey with financial and technical support from: the National Council to Combat HIV and AIDS—*Conselho Nacional de Combate ao HIV e SIDA*—(CNCS), the US Centers for Disease Control and Prevention through the Cooperative Agreement between PEPFAR and INS, The Global Fund, the World Health Organization (WHO), UNICEF, Health Alliance International/University of Washington (HAI/UW), and UNFPA.

Further information on the design and implementation of the IMASIDA can be found in the final report for the survey, which was published in February 2018 (MISAU, INE and ICF, 2018).

1.1 RATIONALE FOR THE SUPPLEMENTAL REPORT

The IMASIDA, in addition to HIV testing in the community, included collection of blood samples to measure HIV prevalence, HIV incidence, viral load, and antiretroviral (ARV) medications. During fieldwork, respondents were offered testing and results for HIV via a rapid test-based algorithm, as well as CD4 cell counts. The questionnaire included questions on self-reported HIV status and use of ARVs. According to the original survey design, ARV biomarker data were to be incorporated into the HIV incidence estimate, the HIV prevalence estimate for children age 6-17 months, and the estimates of ARV use for the UNAIDS 90-90-90 indicators on HIV testing and treatment. However, due to a delay in the blood testing for ARVs, a recommendation was made to publish the IMASIDA final report including estimates for these key indicators without incorporating the ARV results. The HIV incidence estimate and the pediatric HIV prevalence estimate published in the survey final report did not include ARV biomarker data, and the 90-90-90 indicators used ARV coverage information derived from self-reported data.

The purpose of the present IMASIDA Supplemental Report Incorporating Antiretroviral Biomarker Results is to publish revised estimates of HIV incidence, the 90-90-90 indicators, and the pediatric HIV prevalence incorporating the ARV biomarker data. To this end, this report includes revised versions of Chapters 12, 13, and 14 from the IMASIDA final report, appearing here as Chapters 2, 3, and 4, respectively.

1.2 REVISIONS IN THE SUPPLEMENTAL REPORT

The text and figures in both the IMASIDA final report and this supplemental report are based on the tables included in each report. Revisions made to the tables published in the IMASIDA final report to produce the tables in the present report are summarized as follows.

- Chapter 12 in the IMASIDA final report on adult HIV prevalence and incidence is reprinted here as Chapter 2 with very few changes, except for a revised Section 2.3 on HIV incidence.
- Chapter 13 in the IMASIDA final report on HIV testing and treatment, appearing in this report as Chapter 3, includes several revisions. First, for the sake of simplicity, a few specimens that had been exhausted during previous testing and could not undergo ARV testing have been removed from the analysis in Tables 3.2.1-3.6.2. Second, ARV biomarker data have been added alongside self-reported ARV data in Tables 3.3.1-3.4.3. Thirdly, estimates of the 90-90-90 indicators in Tables 3.6.1-3.6.2 have been revised to replace a definition of ARV use based on an affirmative self-report of ARV use or evidence of viral suppression with a definition of ARV use based on an affirmative self-report of ARV use or the presence of ARVs in the biomarker test.
- Chapter 14 in the IMASIDA final report on prevention of mother-to-child transmission (PMTCT) of HIV and pediatric HIV, appearing in this report as Chapter 4, includes changes in two areas. First, the definition of ARV use in Table 4.4 focusing on women who are pregnant or breastfeeding has been revised in accordance with the new definition applied in Chapter 3. Second, the pediatric HIV prevalence estimates in Tables 4.6-4.9 have been revised to include the ARV biomarker results.

Sampling errors for key indicators published in the IMASIDA supplemental report can be found in Appendix A. Methods for the laboratory testing and indicator tabulation for the estimates in this report are summarized in Appendix B.

HIV PREVALENCE AND INCIDENCE 2

Key Findings

- ***HIV Testing Coverage Rate:*** The HIV testing coverage rate is 88% in rural areas and 69% in urban areas. Regarding sex, the coverage rate is 83% for women and 72% for men.
- ***HIV Prevalence:*** HIV prevalence is 13.2% among all respondents 15-49 years of age. Prevalence is 15.4% among women and 10.1% among men.
- ***Youth HIV Prevalence:*** Prevalence among young people age 15-24 years is 6.9%, but relatively higher among women (9.8%) and for all youth in the 23-24 year age group (14.9%).
- ***HIV Prevalence by Province:*** Tete (5.2%), Nampula (5.7%), and Niassa (7.8%) have the lowest prevalence. Gaza (24.4%), Maputo Province (22.9%), and Maputo Cidade (16.9%) have the highest rates.
- ***HIV Incidence:*** Incidence in the general population 15-49 years is 5 new infections per 1,000 person-years of exposure.

Objectives for the IMASIDA include determing the prevalence and incidence of HIV in the country. The survey provides data at national and provincial levels, by residence (urban and rural), and by background characteristics. Prevalence and incidence indicators are determined through centralized laboratory testing, following national algorithms and procedures specific to participant age groups (described in more detail in Appendix B). This chapter presents information regarding participation in the IMASIDA HIV test, prevalence of HIV in women and men age 15-59 years tested for HIV during the survey, as well as factors associated with HIV infection, for example, sexual risk behavior. The chapter also discusses coverage of prior HIV testing according to current HIV status, HIV prevalence among youth age 15-24 years, by male circumcision status, and among couples. The end of the chapter describes HIV incidence in Mozambique for women and men age 15-49 and age 15-59 years.

2.1 HIV TESTING COVERAGE RATES

HIV testing response rates

Percentage of women and men tested for HIV during the survey.

Sample: Women and men age 15-59 years in households selected for HIV testing based on data in the Household Questionnaire.

The response rate for HIV testing among women and men age 15-49 years was 78% (**Table 2.1**). The response rate was higher among women than men (83% and 72%, respectively). It should be noted that the overall refusal rate was 7% (among women and men) and the rate of absence at the time of sample collection for HIV testing was 4% (3% for women and 5% for men).

Patterns by background characteristics

- The response rate for HIV testing in rural areas (88%) is higher than in urban areas (69%), with a difference of nineteen percentage points.
- The lowest coverage rates are recorded in Maputo Cidade (57%) and the highest in the provinces of Nampula (92%) and Manica (88%).
- The rate of refusal for providing a blood sample for HIV testing was highest among women in the province of Cabo Delgado (14%) and men in Maputo Cidade (12%).
- The lowest response rates are found among women and men with higher educational attainment and in households from the highest wealth quintile (**Table 2.2**).

2.2 HIV PREVALENCE

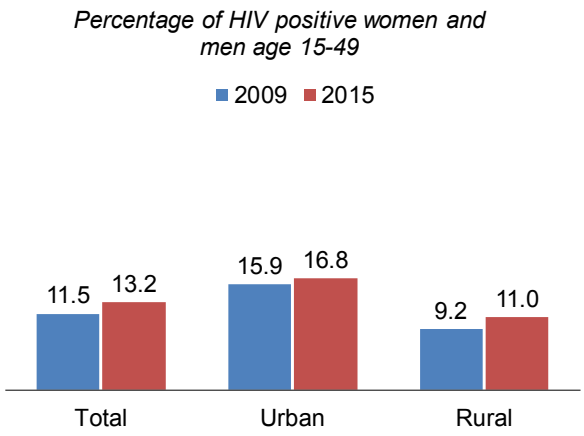
2.2.1 HIV Prevalence in Women and Men

HIV prevalence: Percentage of women and men who tested positive for HIV in the 2015 IMASIDA[1].

Sample: Women and men age 15-59 who were tested for HIV as part of the survey.

According to IMASIDA results, HIV prevalence among women and men age 15-49 years is 13.2%. HIV prevalence is 15.4% among women age 15-49 and 10.1% among men of the same age group. (**Table 2.3**). Results vary greatly depending on area of residence, province, religion, wealth quintile, and other characteristics (**Table 2.4**). For example, prevalence in urban areas is 16.8% and 11% in rural areas **(Figure 2.1)**.

Figure 2.1 **Trends in HIV prevalence**



Trends: HIV prevalence increased from 11.5% (confidence interval: [10.3-12.6]) in 2009 to 13.2% (confidence interval: [11.9-14.4]) in 2015. This increase is statistically significant. During the same period, prevalence in urban areas increased from 15.9% in 2009 to 16.8% in 2015 and, in rural areas, from 9.2% in 2009 to 11% in 2015 (**Figure 2.1**). However, the prevalence increase according to residence is not statistically significant.

[1] Consult the testing methodology in Appendix B.

Patterns by background characteristics

- HIV prevalence is directly related to the ages of women and men, and in both cases is highest among the 35-39 age group (23.4% and 17.5%, respectively) **(Figure 2.2** and **Table 2.3)**.
- Regarding education level, HIV prevalence does not differ greatly by sex. There is a 2 percentage point difference between women with primary education (16.1%) and those with no education (13.8%). Among men, there is a small decrease in prevalence as education level rises, from 10.8% for men with no education to 9.2% for men with secondary or higher education (**Table 2.4**).
- By province, there is wide variation in HIV prevalence among women and men. Tete (5.2%) has the lowest prevalence and Gaza (24.4%) has the highest (**Figure 2.3** and **Table 2.4**).

Figure 2.2 **HIV prevalence by age**

Percentage of HIV positive women and men age 15-59

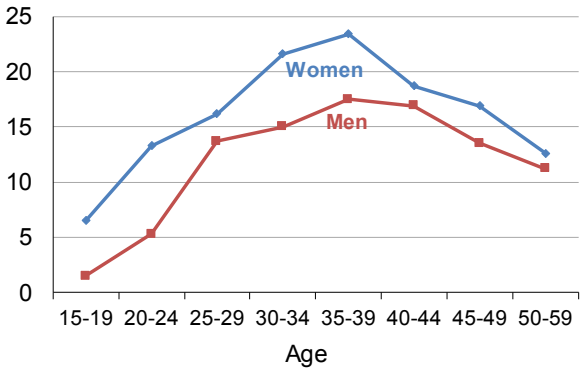
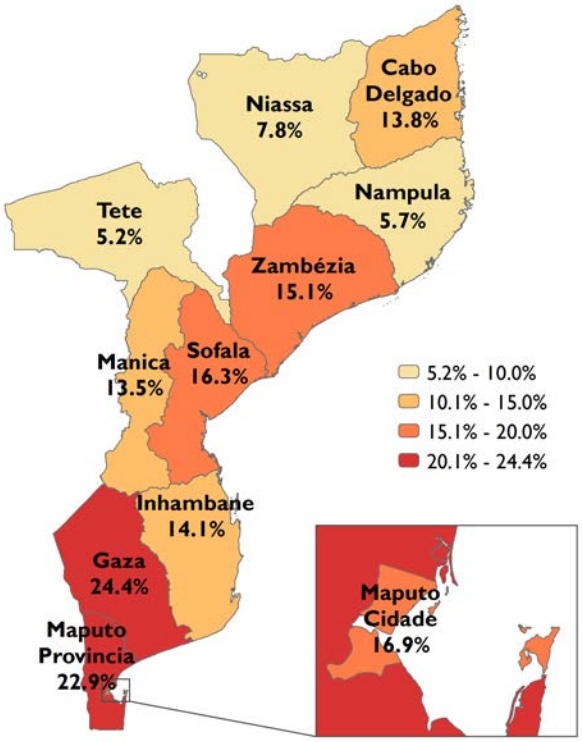


Figure 2.3 **HIV prevalence by province**

Percentage of HIV positive women and men age 15-49



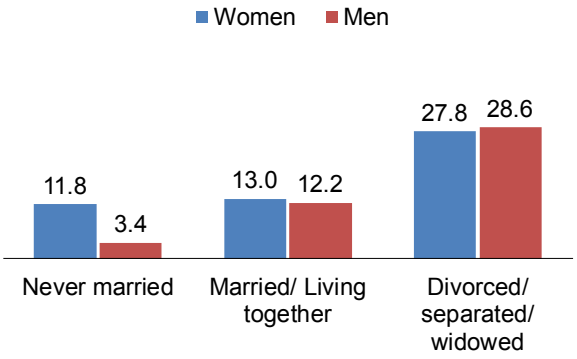
Patterns by other sociodemographic and health characteristics

- HIV prevalence varies considerably by marital status. Prevalence is highest among divorced, separated, or widowed women and men (27.8% and 28.6%, respectively). Generally, prevalence is lowest among never married women (11.8%) and men (3.4%) (**Figure 2.4** and **Table 2.5**).
- Among married men, prevalence is lowest for those in monogamous (11.9%) compared with polygamous (15.1%) unions. Among women, prevalence is higher among women who are not currently in union (20%) than among those who live in monogamous (12.5%) or poligamous (14%) unions.
- Regarding the number of times slept away from home in the past 12 months, women who slept five or more nights out of the house have the highest HIV prevalence (23.4%) compared with those who did not sleep away from home (13.6%) and those who slept away one or two nights (20.2%).

- Women who spent less than one month away from home in the past 12 months have the highest HIV prevalence (22%) compared with those who spent no time away (13.6%). For men, prevalence is highest among those who spent more than one month away from home (13.4%) and lowest among those who spent no time away (9.1%).
- The HIV prevalence is lower among women who are currently pregnant (10.1%) as compared to non-pregnant women or women who do not know their pregnancy status (15.9%).

Figure 2.4 **HIV prevalence by marital status**

Percentage of HIV positive women and men age 15-49



2.2.2 HIV Prevalence by Sexual Risk Behavior

Certain sexual behaviors constitute risk factors that influence the rate of HIV and sexually transmitted infections (STIs).

Patterns by Background Characteristics

- HIV prevalence is higher in men who initiate sexual activity later, that is, at 20 years or more (13.6%) and in women who initiate sexual activity at 18 or 19 years of age (18.1%) (**Table 2.6**).
- Regarding the number of lifetime sexual partners, prevalence in women increases along with the number of partners, from 8.7% in women with a single partner to 30.4% in women with five to nine partners. For men, the prevalence increases from 3.7% among those with a single lifetime partner to 15.1% among those with five to nine partners.
- HIV prevalence is highest in women who reported using a condom at their last sexual intercourse in the 12 months prior to the survey (23.4%). Among men, prevalence was higher in those who reported having no sex during the same period (14%).

2.2.3 HIV Prevalence among Youth Age 15-24 Years

Young people age 15-24 are one of the population groups considered to be more vulnerable to HIV infection, due to typical expected behaviors at that age, difficulty accessing health services, and services not properly targeted specifically to them. In developing countries with marked social inequality, young people remain subject to factors such as unemployment, school drop-out, and sexual exploitation, which increase vulnerability to HIV.

The prevalence of HIV in young people age 15-24 is 6.9%, and higher in young women (9.8%) than in young men (3.2%) (**Table 2.7**).

Trends: The prevalence of HIV among young people shows a slight decrease in the last six years, from 7.9% in 2009 to 6.9% in 2015.

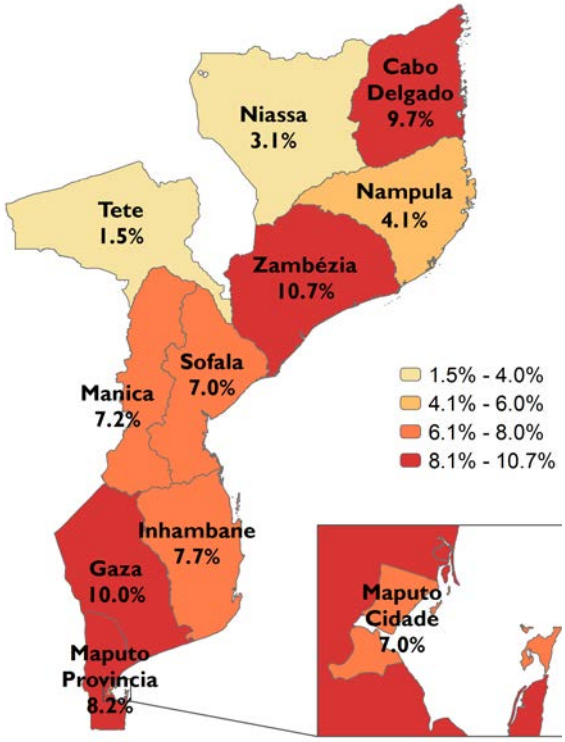
Patterns by background characteristics

- The highest prevalence of HIV in young people was recorded in the age group of 23-24 years (14.9%) (**Table 2.7**).
- According to marital status, HIV prevalence is highest among young people who are divorced/separated/widowed (16.6%) (**Table 2.7**).

- In general, young people in urban areas have a higher prevalence (8.1%) than in rural areas (6.1%).
- In the provinces, the highest prevalence was recorded in Zambézia (10.7%). Gaza had the highest prevalence among young women (15.9%), whereas in young men, the highest prevalence was found in Cabo Delgado (7.5%). The lowest prevalence in both sexes occurred in the province of Tete (1.5% among young women and men) (**Figure 2.5** and **Table 2.7**).
- Regarding education level and the wealth quintile, results indicate a low prevalence among the youth with no education and in the first and second wealth quintiles.
- Among young people who have ever had sex, HIV prevalence is higher in women who reported having had two or more sexual partners (21.2%) in the 12 months preceding the survey compared with those who had no sexual partners (12.5%). In men, a similar trend is observed, with the highest prevalence in those who had two or more sexual partners (4%) versus 1.3% in those who had no sexual partners (**Table 2.8**).

Figure 2.5 **HIV prevalence among young people by province**

Percentage of HIV positive young people age 15-24



2.2.4 HIV Prevalence by Other Characteristics Related to Risk for HIV

STIs play a key role in HIV transmission. Access to medical care and qualified counseling before and after testing can be a determinant for HIV positive people to adhere to treatment and for HIV negative people to remain negative.

HIV prevalence is higher in people 15-49 years who have already had sexual relations and who report having had an STI or STI symptoms in the 12 months prior to the survey, versus those reporting no STI and no symptoms of an STI (23.7% versus 13.3%) (**Table 2.9**).

The prevalence of HIV in people who have had sex is higher among those who have already had an HIV test (17.9%) than in those who have never had that test (9.2%).

Regarding HIV testing prior to the survey, the highest HIV prevalence is found among men who declared that they were previously tested but did not receive the result (21.8%).

2.2.5 HIV Prevalence by Male Circumcision

There are strong indications that male circumcision prevents HIV infection in men and the general population, with a 50-60% risk reduction in the groups undergoing the procedure (WHO and UNAIDS, 2011). The World Health Organization includes circumcision in its package of recommendations for the prevention and combat of HIV. This initiative has been identified as one of the most important components for HIV prevention in Mozambique, being as effective as testing and counseling as well as condom use.

Respondents in the IMASIDA survey were asked whether they had been circumcised, at what age, by whom (traditional practitioner, health professional or other) and in what place (health unit, other place, or rite of initiation). Among men age 15-49 who participated in the IMASIDA HIV test, the percentage of

circumcised men who are HIV positive is 8.1%, and the percentage of uncircumcised men who are HIV positive is 13.4% (**Table 2.10**).

Patterns by background characteristics

- The prevalence of HIV in uncircumcised men is high in the urban population (19.5%), compared to 10.2% in the rural population.
- The provinces of Tete (3.9%) and Niassa (4.2%) registered the lowest HIV prevalence among circumcised men, while Maputo Province (12.4%) and Zambezia (11.3%) registered the highest rates.
- Among uncircumcised men, the highest HIV prevalence was observed in the 35-39 year age group (24.3%) and in the fourth and highest wealth quintiles (19% and 18.7%, respectively).

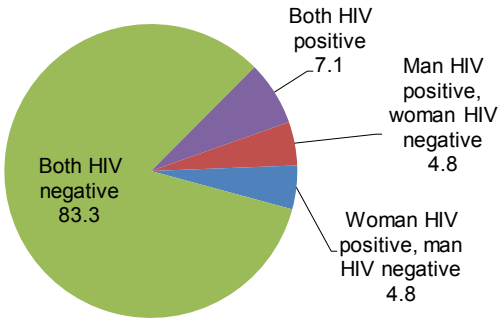
2.2.6 HIV Prevalence among Couples

Among cohabiting couples where both spouses were tested for HIV, in 83.3% both had a negative result. In 7.1% of couples, both are HIV positive, in 4.8% of couples the woman is HIV positive and the man is HIV negative, while in 4.8% the man is HIV positive and the woman is HIV negative (**Figure 2.6** and **Table 2.11**).

Trends: Most couples in Mozambique are negative concordant (83.3%); however, there was a reduction of 1.6 percentage points when compared to the negative concordant couples observed in INSIDA 2009 (84.9%).

Figure 2.6 **HIV prevalence among couples**

Percent distribution of HIV among couples by HIV status



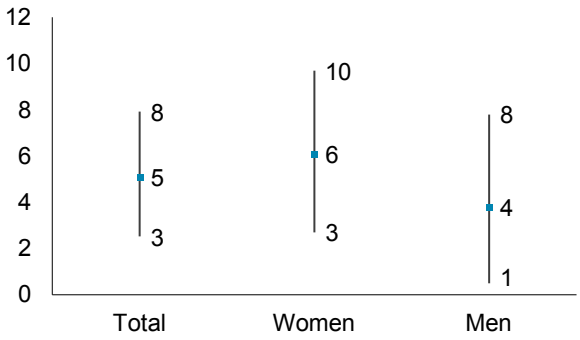
Patterns by background characteristics

- Regarding area of residence, the percentage of couples in which one partner is HIV positive is 13.4% in urban areas and 8.1% in rural areas.
- Regarding the provinces, the percentage of couples in which both spouses are HIV positive varies from 1.7% in Nampula to 21.6% in Gaza.
- When the age difference between partners is more than four years, the possibility of both being HIV positive increases. Couples in which the man is younger than the woman (11.6%) or in which the man is 10 or more years older than the woman (10%) are more likely than the national average (7.1%) to be positive concordant couples.

2.3 HIV INCIDENCE

Figure 2.7 HIV incidence

Infections per 1,000 person-years, among women and men age 15-49, by sex



In the 2015 IMASIDA, HIV incidence was measured using a recent infection testing algorithm (RITA) including HIV-1 viral load, the limiting antigen (LAg) avidity assay, and antiretroviral biomarker testing. Among women and men age 15-49, the number of new HIV infections is 5 per 1,000 person-years of exposure (**Figure 2.7** and **Table 2.12.1**). The incidence of HIV is higher in women (6 infections per 1,000 person-years) compared to men (4 infections per 1,000 person-years). However, the confidence intervals of these incidence estimates overlap, and the difference is not statistically significant. The incidence estimates for women and men age 15 to 59 years are similar to those for women and men age 15-49 and are described in **Table 2.12.1**.

The 2015 IMASIDA final report, which was published before the ARV testing was completed, included an estimate of HIV incidence based on a testing algorithm including viral load and the LAg avidity assay only (MISAU, INE and ICF, 2018). For reference, these results are shown in **Table 2.12.2**. Further information about both calculation methods and an explanation for the difference between the incidence estimates they produce is included in Appendix B.

LIST OF TABLES

For detailed information on HIV prevalence, see the following tables:

- **Table 2.1 Coverage of HIV testing by residence and province**
- **Table 2.2 Coverage of HIV testing according to selected background characteristics**
- **Table 2.3 HIV prevalence by age**
- **Table 2.4 HIV Prevalence by socioeconomic characteristics**
- **Table 2.5 HIV prevalence by demographic characteristics**
- **Table 2.6 HIV prevalence by sexual behavior**
- **Table 2.7 HIV prevalence among young people by background characteristics**
- **Table 2.8 HIV prevalence among young people by sexual behavior**
- **Table 2.9 HIV prevalence by other characteristics**
- **Table 2.10 HIV prevalence by male circumcision**
- **Table 2.11 HIV prevalence among couples**
- **Table 2.12.1 HIV incidence – viral load, LAg, and ARV**
- **Table 2.12.2 HIV incidence – viral load and LAg**

Table 2.1 Coverage of HIV testing by residence and province

Percent distribution of women and men age 15-49 eligible for HIV testing by testing status, residence, and province (unweighted), Mozambique IMASIDA 2015

	Testing status						
	DBS tested[1]	Refused to give blood	Absent at time of blood collection	Other/Missing[2]			
Residence and province	Interviewed	Interviewed	Interviewed	Interviewed	Not interviewed	Total	Number
			WOMEN 15-49				
Residence							
Urban	75.3	10.5	4.7	1.6	8.0	100.0	3,622
Rural	90.9	3.3	1.3	1.2	3.2	100.0	3,732
Province							
Niassa	79.2	10.7	3.3	0.6	6.2	100.0	634
Cabo Delgado	77.7	14.2	2.4	1.5	4.2	100.0	542
Nampula	91.6	4.2	1.0	2.4	0.8	100.0	735
Zambézia	79.4	9.8	3.3	2.2	5.3	100.0	675
Tete	88.6	6.1	1.2	0.9	3.3	100.0	578
Manica	90.1	4.1	0.8	2.1	2.9	100.0	617
Sofala	86.9	6.9	1.0	1.8	3.4	100.0	679
Inhambane	89.7	1.0	1.3	1.8	6.2	100.0	600
Gaza	89.8	3.9	2.3	0.9	3.1	100.0	812
Maputo Província	81.1	4.5	6.8	0.2	7.5	100.0	644
Maputo Cidade	64.8	10.5	7.9	0.8	16.0	100.0	838
Total 15-49	83.2	6.9	3.0	1.4	5.5	100.0	7,354
Total 15-59	83.3	6.9	2.9	1.4	5.5	100.0	8,204
			MEN 15-49				
Residence							
Urban	61.9	9.0	7.8	2.2	19.1	100.0	3,022
Rural	83.6	3.4	2.6	2.0	8.4	100.0	2,501
Province							
Niassa	61.7	7.2	6.1	1.9	23.0	100.0	525
Cabo Delgado	76.9	10.3	2.4	1.9	8.5	100.0	468
Nampula	91.6	2.9	1.6	2.4	1.6	100.0	580
Zambézia	74.6	7.4	7.2	1.2	9.5	100.0	485
Tete	75.8	5.3	2.9	2.2	13.9	100.0	417
Manica	84.0	5.8	3.5	3.3	3.5	100.0	430
Sofala	70.1	7.7	4.2	1.4	16.6	100.0	505
Inhambane	76.9	2.9	1.9	2.7	15.7	100.0	376
Gaza	76.9	4.0	5.1	2.2	11.8	100.0	451
Maputo Província	65.3	4.0	8.0	2.8	19.8	100.0	600
Maputo Cidade	47.8	11.5	12.8	1.3	26.5	100.0	686
Total 15-49	71.8	6.5	5.4	2.1	14.2	100.0	5,523
Total 15-59	72.3	6.3	5.3	2.2	13.9	100.0	6,139
			TOTAL 15-49				
Residence							
Urban	69.2	9.8	6.1	1.9	13.0	100.0	6,644
Rural	88.0	3.4	1.8	1.5	5.3	100.0	6,233
Province							
Niassa	71.3	9.1	4.6	1.2	13.8	100.0	1,159
Cabo Delgado	77.3	12.4	2.4	1.7	6.2	100.0	1,010
Nampula	91.6	3.7	1.2	2.4	1.1	100.0	1,315
Zambézia	77.4	8.8	4.9	1.8	7.1	100.0	1,160
Tete	83.2	5.7	1.9	1.4	7.7	100.0	995
Manica	87.6	4.8	1.9	2.6	3.2	100.0	1,047
Sofala	79.7	7.3	2.4	1.6	9.0	100.0	1,184
Inhambane	84.7	1.7	1.5	2.2	9.8	100.0	976
Gaza	85.2	4.0	3.3	1.3	6.2	100.0	1,263
Maputo Província	73.5	4.3	7.4	1.4	13.4	100.0	1,244
Maputo Cidade	57.2	11.0	10.1	1.0	20.7	100.0	1,524
Total 15-49	78.3	6.7	4.0	1.7	9.3	100.0	12,877
Total 15-59	78.6	6.6	3.9	1.7	9.1	100.0	14,343

[1] Includes all Dried Blood Spot (DBS) specimens tested at the lab and for which there is a final result, that is, positive, negative, indeterminate or inconclusive. Inconvlusive means that the sample went through the entire testing algorithm, but the final result was inconclusive.

[2] Includes: (1) other results of blood collection (e.g., technical problems in the field), (2) lost specimens, (3) noncorresponding bar codes, and (4) laboratory results such as blood was not tested due to technical problems, insufficient blood to complete the testing algorithm, etc.

Table 2.2 Coverage of HIV testing according to selected background characteristics

Percent distribution of women and men age 15-49 eligible for HIV testing by testing status, according to selected background characteristics (unweighted), Mozambique IMASIDA 2015

	Testing status						
	DBS tested[1]	Refused to give blood	Absent at time of blood collection	Other/Missing[2]			
Background characteristic	Interviewed	Interviewed	Interviewed	Interviewed	Not interviewed	Total	Number
			WOMEN 15-49				
Age							
15-19	82.8	6.9	3.2	1.0	6.2	100.0	1,658
20-24	83.9	6.8	3.3	1.6	4.4	100.0	1,453
25-29	81.6	7.4	3.8	1.1	6.0	100.0	1,149
30-34	80.9	8.2	3.0	1.8	6.0	100.0	922
35-39	85.3	5.8	2.9	1.1	5.0	100.0	902
40-44	85.4	6.0	1.4	1.6	5.6	100.0	699
45-49	84.2	6.3	1.8	1.9	5.8	100.0	571
Education							
No schooling	87.5	4.4	1.3	1.6	5.2	100.0	1,559
Primary	86.7	5.8	2.3	1.2	4.0	100.0	3,543
Secondary/Higher	75.1	10.3	5.2	1.6	7.9	100.0	2,244
Missing	0.0	0.0	0.0	0.0	100.0	100.0	8
Wealth quintile							
Lowest	91.5	3.9	1.4	1.3	1.8	100.0	994
Second	89.2	4.3	1.1	1.8	3.6	100.0	1,044
Third	89.3	5.0	1.2	1.0	3.5	100.0	1,141
Fourth	84.0	7.1	2.8	1.1	4.9	100.0	1,727
Highest	74.0	9.8	5.4	1.6	9.3	100.0	2,448
Total	83.2	6.9	3.0	1.4	5.5	100.0	7,354
			MEN 15-49				
Age							
15-19	75.7	5.6	4.8	2.0	11.9	100.0	1,370
20-24	69.9	7.6	6.0	2.1	14.4	100.0	1,067
25-29	69.7	6.4	5.3	2.6	16.0	100.0	856
30-34	70.2	7.4	5.9	2.6	13.9	100.0	727
35-39	67.1	6.3	7.3	1.3	18.1	100.0	559
40-44	73.0	5.4	3.9	1.9	15.7	100.0	515
45-49	75.3	6.3	5.1	1.9	11.4	100.0	429
Education							
No schooling	73.1	3.8	2.5	2.3	18.4	100.0	479
Primary	77.2	5.3	4.2	1.7	11.6	100.0	2,639
Secondary/Higher	66.3	8.4	7.5	2.5	15.4	100.0	2,380
Missing	0.0	0.0	0.0	0.0	100.0	100.0	25
Wealth quintile							
Lowest	84.0	3.6	2.9	2.0	7.4	100.0	645
Second	85.5	3.2	2.2	1.7	7.4	100.0	743
Third	81.7	4.2	3.2	1.9	9.0	100.0	825
Fourth	72.1	6.9	5.5	1.5	14.0	100.0	1,219
Highest	59.0	9.1	8.3	2.6	20.9	100.0	2,091
Total	71.8	6.5	5.4	2.1	14.2	100.0	5,523

[1] Includes all Dried Blood Spot (DBS) specimens tested at the lab and for which there is a final result, that is, positive, negative, indeterminate or inconclusive. Inconvlusive means that the sample went through the entire testing algorithm, but the final result was inconclusive.
[2] Includes: (1) other results of blood collection (e.g., technical problems in the field), (2) lost specimens, (3) noncorresponding bar codes, and (4) laboratory results such as blood was not tested due to technical problems, insufficient blood to complete the testing algorithm, etc.

Table 2.3 HIV prevalence by age

Among the de facto population of women and men age 15-59 who were interviewed and tested, percentage HIV positive, by age, Mozambique IMASIDA 2015

	Women		Men		Total	
Age	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
15-19	6.5	1,264	1.5	1,015	4.3	2,279
20-24	13.3	1,162	5.3	806	10.0	1,968
25-29	16.2	900	13.7	620	15.2	1,521
30-34	21.6	708	15.0	585	18.7	1,293
35-39	23.4	759	17.5	447	21.2	1,206
40-44	18.7	552	16.9	429	17.9	981
45-49	16.9	464	13.5	334	15.5	798
50-59	12.6	709	11.2	515	12.0	1,225
Total 15-49	15.4	5,809	10.1	4,236	13.2	10,045
Total 15-59	15.1	6,519	10.2	4,751	13.0	11,270

Table 2.4 HIV Prevalence by socioeconomic characteristics

Percentage HIV positive among women and men age 15-49 who were tested, according to background characteristics, Mozambique IMASIDA 2015

	Women		Men		Total	
Background characteristic	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Religion						
Catholic	12.7	1,686	8.5	1,307	10.8	2,994
Islam	9.5	1,101	7.8	840	8.8	1,941
Zionist	20.5	708	12.6	362	17.8	1,070
Evangelical/Pentecostal	23.2	698	13.9	320	20.3	1,018
Anglican	16.3	41	(7.2)	38	11.9	79
Protestant	18.3	1,077	9.2	779	14.5	1,856
Other	10.1	120	(17.9)	26	11.5	146
No religion	14.5	376	14.3	558	14.4	934
Missing	*	2	*	5	*	7
Employment (in the last 12 months)						
No employment	13.6	3,171	5.1	951	11.7	4,122
Employed	17.5	2,638	11.5	3,283	14.2	5,921
Missing	*	0	*	2	*	2
Residence						
Urban	20.5	2,048	12.3	1,674	16.8	3,722
Rural	12.6	3,761	8.6	2,562	11.0	6,323
Province						
Niassa	10.3	304	4.5	236	7.8	539
Cabo Delgado	15.7	537	11.4	448	13.8	985
Nampula	5.1	1,213	6.5	949	5.7	2,162
Zambézia	16.8	680	12.5	459	15.1	1,138
Tete	6.4	431	3.3	293	5.2	724
Manica	15.6	445	10.3	302	13.5	748
Sofala	18.8	543	13.0	401	16.3	945
Inhambane	17.7	397	7.6	224	14.1	621
Gaza	28.2	521	17.6	285	24.4	807
Maputo Província	29.6	336	15.8	317	22.9	653
Maputo Cidade	21.7	401	11.0	322	16.9	723
Education						
No schooling	13.8	1,514	10.8	434	13.2	1,948
Primary	16.1	3,013	10.5	2,304	13.7	5,317
Secondary/Higher	15.7	1,282	9.2	1,499	12.2	2,780
Wealth quintile						
Lowest	10.4	1,135	8.4	727	9.6	1,862
Second	9.9	1,094	7.1	808	8.7	1,901
Third	13.8	1,066	8.8	787	11.7	1,853
Fourth	21.1	1,208	14.0	811	18.3	2,018
Highest	20.4	1,307	11.3	1,104	16.2	2,411
Total 15-49	15.4	5,809	10.1	4,236	13.2	10,045
50-59	12.6	709	11.2	515	12.0	1,225
Total 15-59	15.1	6,519	10.2	4,751	13.0	11,270

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 2.5 HIV prevalence by demographic characteristics

Percentage HIV positive among women and men age 15-49 who were tested, according to demographic characteristics, Mozambique IMASIDA 2015

	Women		Men		Total	
Demographic characteristic	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Marital status						
Never married	11.8	970	3.4	1,411	6.9	2,381
Had sexual relations	17.0	624	4.6	1,013	9.3	1,637
Never had sexual relations	2.6	346	0.6	399	1.5	745
Married/Living together	13.0	3,828	12.2	2,615	12.7	6,444
Divorced/Separated/Widowed	27.8	1,011	28.6	210	28.0	1,220
Type of union						
In a polygynous union	14.0	660	15.1	205	14.3	865
In non-polygynous union	12.5	3,059	11.9	2,410	12.3	5,469
Currently in no union	20.0	1,981	6.7	1,621	14.0	3,602
Don't know/Missing	21.6	109	*	0	21.6	109
Times slept away from home in past 12 months						
None	13.6	4,418	9.1	2,986	11.8	7,404
1-2	20.2	723	11.2	497	16.5	1,220
3-4	20.6	312	9.9	268	15.6	580
5+	23.4	350	15.4	427	19.0	778
Missing	*	6	10.5	58	11.8	63
Time away in past 12 months						
Away for more than 1 month at a time	18.5	387	13.4	399	15.9	786
Away only for less than 1 month at a time	22.0	996	11.9	792	17.6	1,788
Not away	13.6	4,420	9.1	2,986	11.8	7,406
Missing	*	6	10.3	59	13.0	65
Currently pregnant						
Pregnant	10.1	524	na	na	na	na
Not pregnant or don't know	15.9	5,286	na	na	na	na
Male circumcision						
Circumcised	na	na	8.1	2,645	na	na
Not circumcised	na	na	13.4	1,584	na	na
Don't know/Missing	na	na	*	7	na	na
Total 15-49	15.4	5,809	10.1	4,236	13.2	10,045
50-59	12.6	709	11.2	515	12.0	1,225
Total 15-59	15.1	6,519	10.2	4,751	13.0	11,270

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
na = Not applicable

Table 2.6 HIV prevalence by sexual behavior

Percentage HIV positive among women and men age 15-49 who ever had sex and were tested for HIV, according to sexual behavior characteristics, Mozambique IMASIDA 2015

	Women		Men		Total	
Sexual behavior characteristic	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Age at first sexual intercourse						
<16	15.6	2,322	9.7	1,505	13.3	3,826
16-17	16.3	1,618	10.5	1,023	14.1	2,641
18-19	18.1	851	12.8	788	15.5	1,639
20+	17.2	571	13.6	462	15.6	1,032
Missing	7.2	96	13.5	59	9.6	155
Multiple sexual partners and partner concurrency in past 12 months						
0	20.6	806	14.0	168	19.4	974
1	15.1	4,478	10.9	2,804	13.4	7,282
2+	26.2	171	11.1	865	13.6	1,036
Had concurrent partners[1]	27.1	61	14.3	372	16.1	433
None of the partners were concurrent	25.7	110	8.7	493	11.8	603
Missing	*	1	*	0	*	1
Condom use at last sexual intercourse in past 12 months						
Used condom	23.4	592	10.3	703	16.3	1,295
Did not use condom	14.3	4,054	11.1	2,964	13.0	7,018
No sexual relations in past 12 months	20.5	808	14.0	168	19.4	976
Don't know/Missing	*	3	*	2	*	5
Number of lifetime partners						
1	8.7	2,416	3.7	401	8.0	2,816
2	18.4	1,511	8.4	629	15.4	2,140
3-4	24.1	1,143	10.6	927	18.0	2,070
5-9	30.4	260	15.1	868	18.6	1,127
10+	(27.0)	24	13.4	590	13.9	614
Missing	34.8	103	11.4	422	16.0	525
Paid for sexual intercourse in past 12 months						
Yes	na	na	13.9	427	na	na
Used condom	na	na	18.8	135	na	na
Did not use condom	na	na	11.6	292	na	na
No (No paid sex/No sexual relations in past 12 months)	na	na	10.7	3,410	na	na
Total 15-49	16.2	5,457	11.1	3,836	14.1	9,293
50-59	12.6	709	11.2	515	12.0	1,225
Total 15-59	15.8	6,166	11.1	4,352	13.9	10,518

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
na = Not applicable
[1] A respondent is considered to have had concurrent partners if he or she had overlapping sexual partnerships with two or more people during the 12 months before the survey. (Respondents with concurrent partners include polygamous men who had overlapping sexual partnerships with two or more wives).

Table 2.7 HIV prevalence among young people by background characteristics

Percent HIV positive among women and men age 15-24 who were tested for HIV, according to background characteristics, Mozambique IMASIDA 2015

	Women		Men		Total	
Background characteristic	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Age						
15-19	6.5	1,264	1.5	1,015	4.3	2,279
15-17	5.1	652	0.9	582	3.1	1,234
18-19	8.1	612	2.3	433	5.7	1,045
20-24	13.3	1,162	5.3	806	10.0	1,968
20-22	10.9	759	2.5	532	7.5	1,291
23-24	17.7	403	10.9	274	14.9	677
Marital status						
Never married	8.8	853	2.3	1,294	4.9	2,147
Had sexual relations	13.0	508	3.1	898	6.7	1,406
Never had sexual relations	2.6	345	0.6	396	1.5	741
Married/Living together	9.0	1,347	5.2	499	8.0	1,845
Divorced/Separated/Widowed	18.1	227	(5.0)	28	16.6	255
Currently pregnant						
Pregnant	6.0	283	na	na	na	na
Not pregnant or don't know	10.3	2,144	na	na	na	na
Residence						
Urban	11.8	949	4.0	864	8.1	1,813
Rural	8.5	1,478	2.4	956	6.1	2,434
Province						
Niassa	5.2	131	0.3	103	3.1	234
Cabo Delgado	11.9	225	7.5	209	9.7	434
Nampula	3.4	464	5.1	328	4.1	792
Zambézia	14.3	279	4.1	154	10.7	433
Tete	1.9	172	0.8	109	1.5	281
Manica	9.9	201	3.5	142	7.2	343
Sofala	11.6	249	1.0	187	7.0	436
Inhambane	11.5	168	2.1	114	7.7	282
Gaza	15.9	212	2.1	159	10.0	372
Maputo Província	15.7	144	1.0	151	8.2	295
Maputo Cidade	11.1	182	2.4	163	7.0	345
Education						
No schooling	6.2	324	2.9	119	5.3	443
Primary	10.5	1,267	3.0	859	7.4	2,126
Secondary/Higher	10.1	836	3.4	842	6.7	1,678
Wealth quintile						
Lowest	6.2	429	3.4	262	5.1	690
Second	5.5	423	1.8	271	4.1	694
Third	10.1	424	4.2	318	7.6	742
Fourth	14.5	533	4.9	380	10.5	913
Highest	10.8	618	2.0	590	6.5	1,208
Total	9.8	2,427	3.2	1,820	6.9	4,247

Note: Figures in parentheses are based on 25-49 unweighted cases.
na = Not applicable

Table 2.8 HIV prevalence among young people by sexual behavior

Among women and men age 15-24 who have ever had sex and were tested for HIV, percentage HIV positive, according to sexual behavior characteristics, Mozambique IMASIDA 2015

	Women		Men		Total	
Sexual behavior characteristic	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Multiple sexual partners and partner concurrency in past 12 months						
0	12.5	254	1.3	91	9.5	345
1	10.3	1,748	4.1	1,018	8.0	2,765
2+	21.2	76	4.0	316	7.3	391
Had concurrent partners[1]	(16.6)	23	3.4	99	5.9	122
None of the partners were concurrent	23.3	52	4.2	217	7.9	269
Missing	*	1	*	0	*	1
Condom use at last sexual intercourse in past 12 months						
Used condom	13.1	372	2.1	428	7.2	800
Did not use condom	10.2	1,451	5.0	905	8.2	2,356
No sexual intercourse in last 12 months	12.4	255	1.3	91	9.5	347
Total 15-24	11.0	2,079	3.9	1,424	8.1	3,503

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

[1] A respondent is considered to have had concurrent partners if he or she had overlapping sexual partnerships with two or more people during the 12 months before the survey. (Respondents with concurrent partners include polygamous men who had overlapping sexual partnerships with two or more wives).

Table 2.9 HIV prevalence by other characteristics

Percentage HIV positive among women and men age 15-49 who have ever had sex and were tested for HIV, according to whether they had an STI in the past 12 months and prior testing for HIV, Mozambique IMASIDA 2015

	Women		Men		Total	
Background characteristic	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Sexually transmitted infection in past 12 months						
Had STI or STI symptoms	27.7	404	18.1	289	23.7	693
No STI, no symptoms	15.3	4,915	10.4	3,511	13.3	8,426
Don't know	14.5	138	(17.8)	37	15.2	175
Prior HIV testing						
Ever tested	18.7	3,675	16.0	1,582	17.9	5,257
Received results	18.9	3,513	15.7	1,511	17.9	5,024
Did not receive results	13.9	162	21.8	71	16.3	233
Never tested	11.2	1,782	7.6	2,252	9.2	4,034
Missing	*	0	*	2	*	2
Total 15-49	16.2	5,457	11.1	3,836	14.1	9,293

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 2.10 HIV prevalence by male circumcision

Among men age 15-49 who were tested for HIV, percentage HIV positive by circumcision status, according to background characteristics, Mozambique IMASIDA 2015

	Circumcised		Not circumcised	
Background characteristic	Percentage HIV positive	Number	Percentage HIV positive	Number
Age				
15-19	1.6	691	1.2	321
20-24	4.7	501	6.4	304
25-29	11.1	375	17.5	246
30-34	13.3	350	17.7	235
35-39	13.1	270	24.3	177
40-44	13.6	257	21.9	172
45-49	10.6	202	17.6	128
Religion				
Catholic	7.7	964	10.6	342
Islam	7.4	788	(14.2)	51
Zionist	11.5	125	13.3	235
Evangelical/Pentecostal	9.0	133	17.0	186
Anglican	(10.0)	27	*	11
Protestant	5.7	417	13.3	361
Other	*	11	*	15
No religion	14.8	176	14.1	380
Missing	*	3	*	2
Residence				
Urban	9.0	1,138	19.5	534
Rural	7.4	1,507	10.2	1,049
Province				
Niassa	4.2	222	(9.8)	13
Cabo Delgado	8.8	377	25.1	72
Nampula	7.0	880	(0.0)	69
Zambézia	11.3	218	13.6	240
Tete	(3.9)	28	3.2	265
Manica	9.9	58	10.4	244
Sofala	11.1	84	13.4	312
Inhambane	6.1	200	(20.7)	24
Gaza	9.8	138	24.8	148
Maputo Província	12.4	219	23.6	98
Maputo Cidade	7.3	222	19.3	100
Education				
No schooling	9.9	278	12.5	156
Primary	8.7	1,334	13.0	964
Secondary/Higher	6.9	1,034	14.4	464
Wealth quintile				
Lowest	6.3	480	12.5	247
Second	6.2	515	8.9	289
Third	9.3	390	8.1	395
Fourth	10.8	494	19.0	316
Highest	8.1	766	18.7	336
Total 15-49	8.1	2,645	13.4	1,584
50-59	8.0	333	16.9	181
Total 15-59	8.1	2,979	13.7	1,765

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 2.11 HIV prevalence among couples

Percent distribution of couples living in the same household, both of whom were tested for HIV, by HIV status, according to background characteristics, Mozambique IMASIDA 2015

Background characteristic	Both HIV positive	Man HIV positive, woman HIV negative	Woman HIV positive, man HIV negative	Both HIV negative	Total	Number of couples
Woman's age						
15-19	3.3	2.8	0.9	93.0	100.0	385
20-29	7.2	5.5	4.5	82.7	100.0	991
30-39	10.3	5.4	7.7	76.5	100.0	727
40-49	5.2	4.1	4.4	86.4	100.0	430
50-59	5.9	3.1	4.3	86.7	100.0	150
Man's age						
15-19	(4.4)	(0.0)	(0.6)	(95.0)	100.0	63
20-29	3.8	4.5	3.5	88.3	100.0	770
30-39	10.1	4.4	5.1	80.4	100.0	826
40-49	8.7	7.0	6.1	78.1	100.0	625
50-59	5.1	3.2	5.5	86.1	100.0	399
Age difference between partners						
Woman older	11.6	2.0	7.8	78.6	100.0	214
Same age/Man older by 0-4 years	4.4	5.1	4.3	86.2	100.0	1,088
Man older by 5-9 years	7.4	3.6	3.5	85.5	100.0	806
Man older by 10-14 years	10.0	6.1	6.6	77.3	100.0	395
Man older by 15+ years	10.2	8.0	6.9	74.9	100.0	180
Type of union						
Non-polygamous	6.5	4.5	4.4	84.5	100.0	2,280
In polygamous union	9.7	7.0	6.9	76.3	100.0	335
Don't know/Missing	13.3	0.6	7.9	78.1	100.0	68
Multiple partners in past 12 months[1]						
Both no	6.7	4.4	3.9	85.1	100.0	2,067
Man yes, woman no	8.0	5.5	7.6	78.9	100.0	569
Woman yes, man no	*	*	*	*	100.0	23
Both yes	*	*	*	*	100.0	23
Either missing	*	*	*	*	100.0	1
Concurrent sexual partners in past 12 months[2]						
Both no	6.5	4.5	4.4	84.7	100.0	2,338
Man yes, woman no	11.3	7.1	7.0	74.5	100.0	329
Woman yes, man no	*	*	*	*	100.0	13
Both yes	*	*	*	*	100.0	3
Residence						
Urban	11.1	5.7	7.7	75.5	100.0	765
Rural	5.5	4.4	3.7	86.4	100.0	1,918
Province						
Niassa	3.3	3.2	5.5	87.9	100.0	168
Cabo Delgado	7.4	6.2	6.7	79.7	100.0	269
Nampula	1.7	4.7	2.1	91.5	100.0	787
Zambézia	9.6	4.3	3.9	82.2	100.0	306
Tete	2.8	1.0	2.2	94.0	100.0	218
Manica	10.6	4.5	5.1	79.8	100.0	160
Sofala	11.3	5.3	3.1	80.2	100.0	245
Inhambane	6.2	6.1	9.1	78.5	100.0	136
Gaza	21.6	5.8	7.9	64.7	100.0	138
Maputo Província	17.0	6.6	11.1	65.3	100.0	141
Maputo Cidade	8.2	6.4	12.0	73.4	100.0	117
Woman's education						
No schooling	6.7	4.2	4.3	84.8	100.0	841
Primary	7.6	4.4	4.7	83.4	100.0	1,510
Secondary/Higher	5.9	7.9	6.8	79.3	100.0	332
Man's education						
No schooling	7.2	4.0	5.3	83.5	100.0	373
Primary	6.8	4.7	4.1	84.5	100.0	1,709
Secondary/Higher	7.8	5.5	6.8	79.8	100.0	601
Wealth quintile						
Lowest	5.6	3.3	2.5	88.6	100.0	588
Second	3.7	4.0	3.6	88.7	100.0	647
Third	4.2	4.7	4.0	87.0	100.0	562
Fourth	12.6	6.0	7.0	74.4	100.0	460
Highest	12.1	6.5	8.8	72.5	100.0	426
Total	7.1	4.8	4.8	83.3	100.0	2,683

Notes: The table is based on couples for whom test results were available for both individuals. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

[1] A respondent is considered to have had multiple sexual partners in the past 12 months if he or she had sexual intercourse with two or more people during this time period. (Respondents with multiple partners include polygamous men who had sexual intercourse with two or more wives).

[2] A respondent is considered to have had concurrent partners if he or she had overlapping sexual partnerships with two or more people during the 12 months before the survey. (Respondents with concurrent partners include polygamous men who had overlapping sexual partnerships with two or more wives).

Table 2.12.1 HIV incidence – viral load, LAg, and ARV

Annualized HIV incidence rate per 1,000 person-years of exposure and 95% confidence interval according to a recent infection testing algorithm including viral load, the limiting antigen avidity assay, and a biomarker for antiretroviral drugs, among women and men aged 15-49 years and 15-59 years, by sex, Mozambique IMASIDA 2015

	Age 15-49		Age 15-59	
Sex	Incidence rate (per 1,000 PY)	95% confidence interval	Incidence rate (per 1,000 PY)	95% confidence interval
Women	6.1	(2.7 – 9.7)	5.5	(2.4 – 8.8)
Men	3.8	(0.5 – 7.8)	3.2	(0.4 – 6.6)
Total	5.1	(2.5 – 7.9)	4.6	(2.3 – 7.1)

ARV = Antiretroviral biomarker
LAg = Limiting antigen
PY = Person-years of exposure

Table 2.12.2 HIV incidence – viral load and LAg

Annualized HIV incidence rate per 1,000 person-years of exposure and 95% confidence interval according to a recent infection testing algorithm including viral load and the limiting antigen avidity assay, among women and men aged 15-49 years and 15-59 years, by sex, Mozambique IMASIDA 2015

	Age 15-49		Age 15-59	
Sex	Incidence rate (per 1,000 PY)	95% confidence interval	Incidence rate (per 1,000 PY)	95% confidence interval
Women	7.1	(3.3 – 11.2)	6.5	(2.9 – 10.2)
Men	4.1	(0.2 – 8.1)	4.1	(0.4 – 8.0)
Total	6.0	(3.1 – 9.0)	5.4	(2.9 – 8.2)

LAg = Limiting antigen
PY = Person-years of exposure

90-90-90 TARGETS: TESTING, TREATMENT, AND VIRAL SUPPRESSION AMONG PEOPLE LIVING WITH HIV

3

Key Findings

- ***Trends in HIV testing among PLHIV:*** Since 2009, the percentage of PLHIV age 15-49 who have been tested for HIV increased from 43% to 74% among women and from 30% to 56% among men.
- ***HIV treatment cascade indicators:*** Among women and men age 15-49 who are living with HIV, 40% are aware of their HIV status, 35% are on ART, and 23% are on ART and have viral load suppression.
- ***Population viral suppression:*** 32% of women and men age 15-49 who are living with HIV have viral load suppression.
- ***First 90:*** 40% of women and men age 15-49 who are living with HIV are aware of their HIV status.
- ***Second 90:*** 86% of women and men age 15-49 who are aware of their HIV status are on ART.
- ***Third 90:*** 68% of women and men age 15-49 who are on ART have viral load suppression.

3.1 PRIOR HIV TESTING BY CURRENT HIV STATUS

History of HIV testing prior to the 2015 IMASIDA for all respondents to the IMASIDA is presented in Chapter 11 of the 2015 IMASIDA final report (MISAU, INE, and ICF, 2018). This chapter focuses on HIV testing prior to the survey among individuals who are HIV positive according to the IMASIDA HIV test. Among HIV positive women and men age 15-49, 68% have ever been tested for HIV and received the result of their most recent HIV test, compared with only 48% of HIV negative women and men.

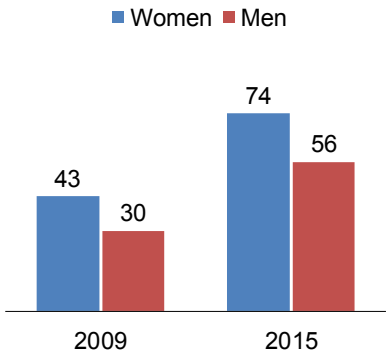
Three in four women age 15-49 who are living with HIV (74%) have ever been tested for HIV and received the result of their most recent HIV test, including 30% who were tested and received their result in the past 12 months. Conversely, 23% of women living with HIV report that they have never been tested for HIV (**Table 3.1**).

Coverage of HIV testing among men living with HIV is slightly lower than among women. Among men age 15-49 who are living with HIV, 56% have ever been tested for HIV and received the result of their most recent HIV test, including 22% who were tested and received their result in the past 12 months. Four in ten men who are living with HIV (41%) report they have never been tested for HIV.

Trends: Coverage of HIV testing among people age 15-49 living with HIV has increased markedly since the 2009 INSIDA, from 43% to 74% among HIV positive women, and from 30% to 56% among HIV positive men (**Figure 3.1**).

***Figure 3.1* Trends in HIV testing among PLHIV**

Percentage of HIV positive women and men age 15-49 who have ever been tested for HIV and received the results



3.2 Self-Reported HIV Status

Respondents to the 2015 IMASIDA who reported that they had been tested for HIV prior to the survey and received the result of their most recent test were asked to report the result of that HIV test. Respondents who reported that they were not tested for HIV prior to the survey were asked no further questions on HIV status or treatment. **Tables 3.2.1-3.2.3** show self-reported information on history of HIV testing and receipt of test results prior to the IMASIDA among people living with HIV (PLHIV). Among women and men age 15-49 who are living with HIV, 33% reported that the result of their most recent test was HIV positive, 34% reported that the result of their most recent test was HIV negative, 5% did not report a definitive HIV test result, and 28% reported that they had never been tested for HIV (**Table 3.2.3**).

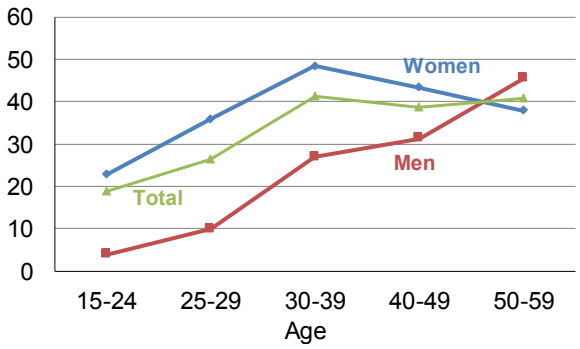
Women living with HIV were more likely than their male counterparts to have reported that they were HIV positive. As shown in **Table 3.2.1**, 39% of women reported that the result of their most recent test was HIV positive, 34% reported that the result of their most recent test was HIV negative, 5% did not report a definitive HIV test result, and 23% reported that they had never been tested for HIV. By contrast, among men, only 21% reported that the result of their most recent test was HIV positive, 33% reported that the result of their most recent test was HIV negative, 6% did not report a definitive HIV test result, and 40% report they had never been tested for HIV (**Table 3.2.2**).

Patterns by background characteristics

- The percentage of people living with HIV who report their status as HIV positive generally increases with age, but the pattern differs slightly among women and men. Among women, the percentage who report their status as HIV positive increases from 23% among those age 15-24 to 48% among women age 30-39, and then decreases among women age 40-59. Among men, the percentage who report their status as HIV positive increases with each age group, from 4% among men age 15-24 to 46% among men age 50-59 (**Figure 3.2**).

***Figure 3.2* Self-reported positive HIV status by age**

Percentage of HIV positive women and men who report they have HIV



- HIV positive women in urban areas are more likely than those in rural areas to report their HIV status as positive (44% versus 34%). However, the percentage of HIV positive men who report their HIV status as positive does not differ much by residence—21% of urban men report they are HIV positive compared with 22% of rural men.

- By province, the percentage of women and men combined living with HIV who report their HIV status as positive ranges from 6% in Nampula to 51% in Gaza (**Table 3.2.3**).

- The percentage of women and men living with HIV who report their HIV status as positive increases with wealth quintile, from 18% in the lowest quintile to 41% in the highest wealth quintile.

3.3 ANTIRETROVIRAL TREATMENT (ART)

Providing ART to PLHIV and promoting adherence are key interventions for improving survival among PLHIV and reducing new HIV infections. For respondents who reported their HIV status as positive, the 2015 IMASIDA included questions on ART use and a blood test for antiretroviral medications. The ARV biomarker testing is described in Appendix B. The 2015 IMASIDA final report (MISAU, INE, and ICF, 2018) was published before the ARV biomarker testing had been completed and included estimates of ART coverage according to self-reported ART use only. This supplemental report adds findings on ART coverage incorporating the ARV biomarker results.

ART coverage – self-report only

Percentage of respondents who report they are currently taking antiretroviral medications. Respondents who did not report that they have HIV were not asked about ART and are assumed to be non-users.

ART coverage – self-report or ARV biomarker

Percentage of respondents who are identified as using ART either because they report they are currently taking antiretroviral medications or because ARVs were detected in their blood.

Sample: Women and men age 15-49 who tested positive for HIV according to the IMASIDA blood test.

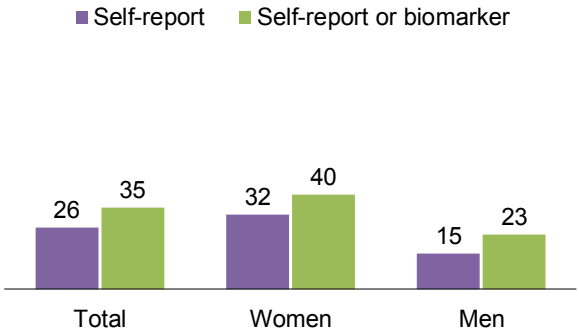
Respondents to the 2015 IMASIDA who reported that they had been tested for HIV prior to the survey, who received the result of their most recent test, and who reported the result of that HIV test was positive were asked whether they had ever taken antiretroviral medications, and, if so, whether they were currently taking them. When using the self-reported ART data, there are two ways to look at ART use: (1) among all PLHIV, and (2) among individuals who know they have HIV. **Tables 3.3.1-3.3.3** shows data on both indicators of ART use. These tables also include estimates of ART coverage among all PLHIV when ART users are defined as those who either self-reported ART use or had evidence of ART use in the biomarker test.

Among women and men age 15-49 who reported their HIV status as positive, 79% reported that they were currently taking ART, 6% reported that they had been on ART in the past but were not currently, and 15% reported they had never taken ART. Women were more likely than men to report that they were on ART—82% of self-reported HIV positive women reported that they were on ART, compared with 70% of men (**Tables 3.3.1** and **3.3.2**).

Among all women and men living with HIV, 26% reported they were currently on ART. Some respondents who did not report ART use during the interview had evidence of ARVs in their biomarker test. Adding these individuals to the pool of respondents defined as ART users increases the estimate of ART coverage among all PLHIV to 35% (**Table 3.3.3** and **Figure 3.3**). The description of patterns of ART use below applies this more comprehensive definition of ART use.

Figure 3.3 **ART coverage**

Percentage of HIV positive women and men age 15-49 who are on ART according to:



Patterns by background characteristics

- ART coverage generally increases with age. Among all PLHIV, the percentage on ART is lowest among women and men age 15-24 (22%) and highest among those age 50-59 (48%) (**Table 3.3.3**).
- ART coverage among all PLHIV age 15-49 is 8% in Nampula and 21% in Cabo Delgado. By contrast, ART coverage is 49% in Gaza.
- By education, ART coverage among all PLHIV age 15-49 is higher among those with primary education (37%), and lower among those with secondary education or higher (34%) and those with no education (27%).

3.4 Viral Load Suppression

3.4.1 Viral Load Suppression Among All PLHIV and Those on ART

Viral load suppression

Percentage of respondents with viral load <1,000 copies/ml.

Sample: Women and men age 15-49 who tested positive for HIV according to the IMASIDA laboratory testing.

Viral load suppression is a key indicator of ART success and is associated with reduced risk of transmission of HIV. The 2015 IMASIDA measured HIV viral load among PLHIV, and the testing methods are described in Appendix B. There are two ways to look at viral load suppression: (1) among all PLHIV, and (2) among PLHIV who are on ART. **Table 3.4.3** shows data on both indicators of viral load suppression.

Among all women and men age 15-49 living with HIV, 32% had viral load suppression. Among women and men who were HIV positive according to the IMASIDA blood test and were defined as ART users according to either their self-report or the biomarker test, 68% had viral load suppression.

As was observed for ART coverage, viral load suppression is higher among women than men. Among women age 15-49 living with HIV, 37% had viral load suppression, compared with 22% of men. Among the subset of PLHIV who are on ART, 70% of women had viral load suppression, compared with 59% of men (**Tables 3.4.1** and **3.4.2**).

Patterns by background characteristics

- By age, viral load suppression among women and men who are living with HIV increases gradually from 29% among those age 15-24 to 33% among those age 40-49, and then increases markedly to 42% among those age 50-59 (**Figure 3.4**).
- Viral load suppression increases with education among all PLHIV age 15-49 as well as among the subset of PLHIV who on ART (**Table 3.4.3**).
- By region, viral load suppression among women and men who are living with HIV ranges from a low of 15% in Nampula to 49% in Maputo Cidade (**Figure 3.5**).

***Figure 3.4* Viral load suppression by age**

Percentage of HIV positive women and men who have viral load suppression

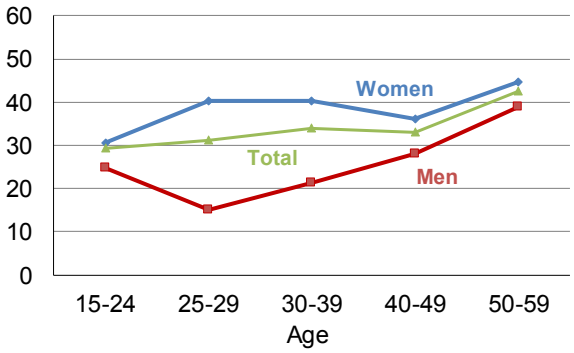
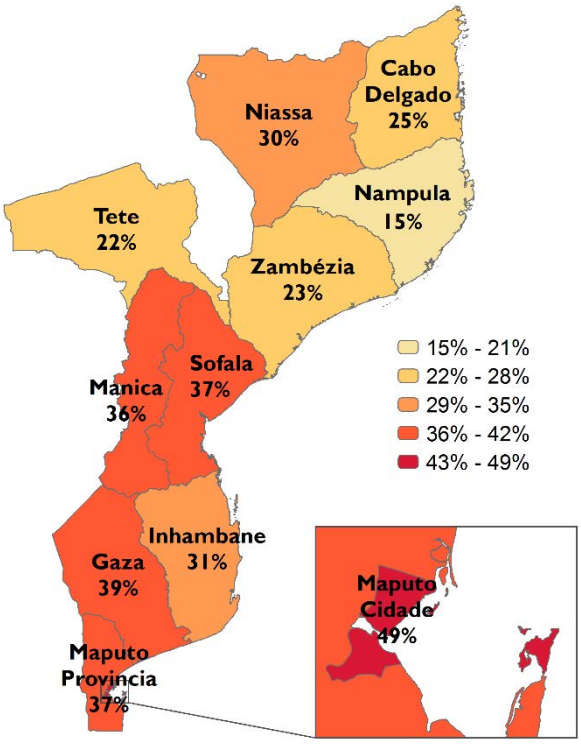


***Figure 3.5* Viral load suppression by province**

Percentage of HIV positive women and men age 15-49 who have viral load suppression



3.4.2 Viral Load Suppression according to Self-reported HIV Status and ART Use

Table 3.5 shows viral load suppression among respondents who were classified as HIV positive on the IMASIDA HIV test, according to self-reported history of HIV testing, HIV status and ART use. Among women and men age 15-49, viral suppression is higher among those who report they are on ART than among those who report they are not currently on ART (66% compared with 18%). In addition, among women and men who report they are on ART, viral suppression is higher among those who report they have been on ART for at least six months than among those who report they have been on ART for fewer than six months (68% compared with 53%).

In absence of ART, the percentage of PLHIV who are expected to have viral suppression is very low—1-7% (Madec et al., 2005; Okulicz et al., 2009; Okulicz and Lambotte, 2011). In light of this information, the levels of viral load suppression among categories of respondents who were not captured as ART users are higher than expected. For example, viral suppression is 23% among respondents who reported the result of their most recent HIV test was negative and 16% among respondents who reported they had never been tested for HIV.

3.5 Global HIV Treatment Targets

UNAIDS has set an ambitious goal of achieving the 90-90-90 HIV treatment targets by 2020, that is, 90% of people living with HIV know they have HIV, 90% of those who know they have HIV are receiving ART, and 90% of those on ART have viral suppression. One of the objectives of the 2015 Mozambique IMASIDA is to measure progress towards these targets.

This report includes two sets of indicators for the global HIV treatment targets.

HIV treatment cascade

Among all PLHIV, the percentage who are aware of their status, are on treatment, and have viral load suppression.

Sample: Women and men age 15-49 who tested positive for HIV according to the IMASIDA laboratory testing.

The global targets for this set of indicators are 90% of PLHIV are aware of their status, 81% receive treatment, and 73% have viral load suppression, corresponding to the percentage of all PLHIV who will know their status, receive treatment, and have viral load suppression if the 90-90-90 targets are achieved.

90-90-90 treatment targets

First 90:	The percentage of PLHIV who are aware of their status.
Second 90:	Among PLHIV who are aware of their status, the percentage who are on ART.
Third 90:	Among PLHIV aware of their status and on ART, the percentage who have viral load suppression.

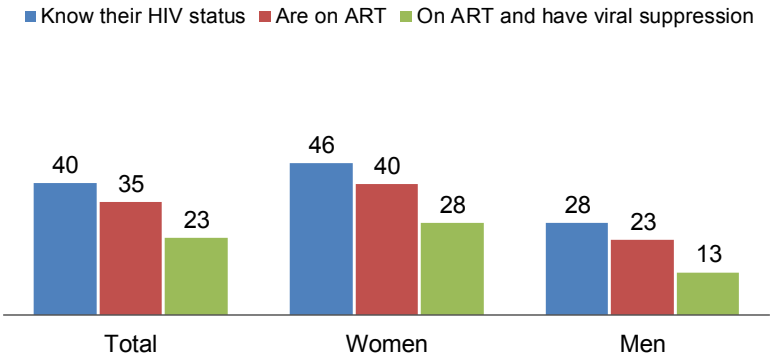
Sample: Women and men age 15-49 who tested positive for HIV according to the IMASIDA laboratory testing.

In this set of indicators, the numerator of the "first 90" becomes the denominator for the "second 90," and the numerator of the "second 90" becomes the denominator for the "third 90." The target for each of these indicators is 90%. A detailed description of the combination of self-reported and biomarker data used to calculate these two sets of indicators can be found in Appendix B.

3.5.1 HIV Treatment Cascade

Figure 3.6 **HIV treatment cascade**

Among HIV positive women and men age 15-49, the pergentage who:



As shown in **Figure 3.6**, 40% of women and men age 15-49 who are living with HIV know their status, 35% are on ART, and 23% have viral load suppression and are on ART. A total of 32% have viral load suppression, including both individuals on ART and those with no evidence of being on ART. The corresponding percentages for women and men age 15-59 are 42%, 36%, 25%, and 33% (**Table 3.6.1**). The percentages in the HIV treatment cascade are higher for women than men. Among women age 15-49 who are living with HIV, 46% know their status, 40% are on ART, 28% have viral load suppression and are on ART, and 37% have viral load suppression regardless of treatment status. Among men, only 28% know their status, 23% are on ART, 13% have viral load suppression and are on ART, and 22% have viral load suppression regardless of treatment status.

Patterns by background characteristics

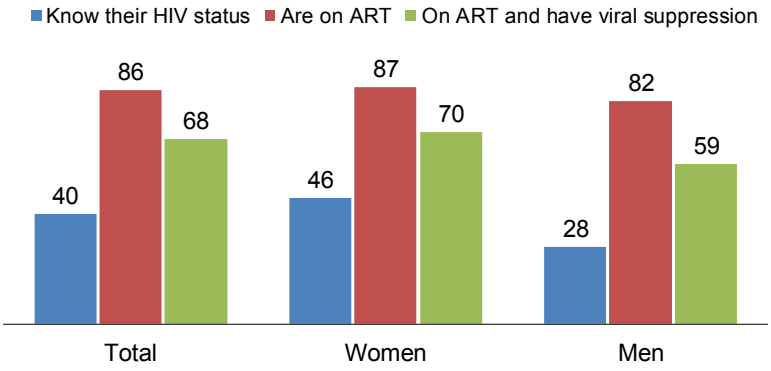
- The HIV treatment cascade indicators all increase with age.
- There is variation in the HIV treatment cascade indicators by province. In general, the treatment cascade indicators are highest in the southern provinces where HIV prevalence is highest: Gaza, Maputo Provincia, and Maputo Cidade. The HIV treatment cascade indicators are especially low in Nampula, where only 11% of women and men age 15-49 who are living with HIV are aware of their status, 8% are on treatment, and 8% have viral load suppression and are on ART. Fifteen percent have viral load suppression regardless of treatment status.

3.5.2 90-90-90 HIV Treatment Targets

Progress towards the UNAIDS 90-90-90 treatment targets is shown in **Figure 3.7**. Forty percent of women and men age 15-49 who are living with HIV are aware of their status; among those aware of their status, 86% are on ART; and among those on ART, 68% have viral load suppression. The corresponding percentages for women and men age 15-59 are 42%, 86%, and 69%. The first 90 is much higher among women than men (46% compared with 28%). However, the second and third 90's are somewhat more similar for women and men—87% of women and 82% of men who know they have HIV are on ART, and 70% of women and 59% of men who are on ART have suppressed viral load.

***Figure 3.7* 90-90-90 HIV treatment targets**

Among HIV positive women and men age 15-49, the percentage who know their HIV status; among those who know their HIV status, the percentage who are on ART; among those on ART, the percentage with viral suppression



Patterns by background characteristics

- The pattern by age differs among the three 90-90-90 indicators. Among women and men, the first 90—knowledge of status—increases with age from 27% among those age 15-24 to 53% among those age 50-59. The second 90—treatment among those who know they have HIV—does not vary much by age, ranging from a low of 82% among women and men age 15-24 to a high of 91% among those age 50-59. The third 90—viral suppression among those on treatment—is highest among women and men age 15-24 (77%) and ranges from 66%-73% in the other age groups (**Table 3.6.2**).
- By geographic zone, the first 90 ranges from 19% in the north to 51% in the south. The second 90 is highest in the north (92%) and lowest in the central zone (83%). The third 90 ranges from 65% in the central zone to 70% in the south zone. Low sample size prevents evaluation of variation in the 90-90-90 indicators by province.

List of Tables

For more information on HIV testing, treatment, and viral load suppression, see the following tables:

Table 3.1 Prior HIV testing according to current HIV status

Percent distribution of women and men age 15-49 who tested HIV positive and who tested HIV negative by HIV testing status prior to the survey, Mozambique 2015

	Women		Men		Total	
HIV testing prior to the survey	HIV positive	HIV negative[1]	HIV positive	HIV negative[1]	HIV positive	HIV negative[1]
Ever tested for HIV and received the result of the most recent test	73.6	58.5	55.8	35.0	67.9	48.2
Tested in the past 12 months and received the result[2]	30.3	30.8	21.7	17.9	27.5	25.2
Tested 12 or more months ago and received the result[2]	42.6	25.4	34.0	16.9	39.8	21.7
Tested and received the result, time since last test missing[2]	0.6	2.2	0.1	0.2	0.5	1.3
Ever tested for HIV and did not receive the result of the most recent test	3.3	3.1	3.6	1.6	3.4	2.4
Not previously tested[3]	23.1	38.4	40.6	63.4	28.8	49.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	895	4,914	427	3,809	1,322	8,723

[1] Includes respondents whose final HIV algorithm results were HIV negative, indeterminate, and inconclusive
[2] Of the most recent HIV test
[3] Includes respondents for whom information is missing on whether or not they were ever tested for HIV

Table 3.2.1 Awareness of HIV status among PLHIV: Women

Percent distribution of HIV positive women age 15-49 by history of prior testing for HIV and self-reported result of the most recent HIV test, according to background characteristics, Mozambique IMASIDA 2015

Background characteristic	Ever tested for HIV			Never tested for HIV[2]	Total	Number of HIV positive women[3]
	Self-report positive	Self-report negative	Other[1]			
Age						
15-24	22.8	47.0	7.3	22.9	100.0	212
15-19	16.4	39.8	6.5	37.3	100.0	71
20-24	26.0	50.6	7.7	15.6	100.0	141
25-29	35.9	44.1	3.5	16.5	100.0	141
30-39	48.2	26.0	4.9	20.9	100.0	302
40-49	43.4	24.3	2.5	29.9	100.0	170
Marital status						
Never married	30.0	45.4	4.1	20.4	100.0	105
Married	31.8	27.6	5.0	35.6	100.0	206
Living together	45.1	38.1	4.0	12.8	100.0	259
Divorced/Separated/ Widowed	40.9	30.9	5.5	22.7	100.0	254
Residence						
Urban	44.1	38.4	4.1	13.4	100.0	382
Rural	33.8	30.5	5.3	30.3	100.0	443
Province						
Niassa	25.5	49.5	0.9	24.1	100.0	28
Cabo Delgado	20.4	26.2	9.2	44.2	100.0	74
Nampula	(9.6)	(41.1)	(0.0)	(49.3)	100.0	51
Zambézia	26.9	35.4	3.2	34.6	100.0	108
Tete	(33.2)	(43.2)	(0.0)	(23.6)	100.0	27
Manica	41.1	34.9	4.3	19.8	100.0	66
Sofala	36.3	30.5	6.7	26.5	100.0	98
Inhambane	46.2	32.0	7.0	14.8	100.0	61
Gaza	56.3	32.2	5.0	6.5	100.0	136
Maputo Provincia	49.9	33.5	6.7	9.9	100.0	92
Maputo Cidade	47.4	36.7	2.4	13.5	100.0	84
Education						
No education	30.1	24.7	2.8	42.5	100.0	193
Primary	41.9	32.0	6.4	19.7	100.0	448
Secondary/Higher	39.4	49.6	2.8	8.1	100.0	183
Wealth quintile						
Lowest	19.6	30.6	5.0	44.9	100.0	108
Second	24.8	28.1	3.4	43.7	100.0	102
Middle	32.5	39.6	7.2	20.7	100.0	131
Fourth	46.0	33.2	3.8	17.0	100.0	230
Highest	48.7	36.2	4.9	10.3	100.0	253
Total 15-49	38.6	34.2	4.8	22.5	100.0	824
50-59	37.9	20.1	2.8	39.2	100.0	83
Total 15-59	38.5	32.9	4.6	24.0	100.0	908

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] Includes respondents who said their test result was indeterminate, who declined to report their HIV test result, and who said they did not receive their test result
[2] Includes respondents for whom information is missing on whether or not they were ever tested for HIV
[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results

Table 3.2.2 Awareness of HIV status among PLHIV: Men

Percent distribution of HIV positive men age 15-49 by history of prior testing for HIV and self-reported result of the most recent HIV test, according to background characteristics, Mozambique IMASIDA 2015

Background characteristic	Ever tested for HIV			Never tested for HIV[2]	Total	Number of HIV positive men[3]
	Self-report positive	Self-report negative	Other[1]			
Age						
15-24	3.9	29.7	0.7	65.7	100.0	57
15-19	*	*	*	*	100.0	15
20-24	(2.8)	(36.9)	(0.0)	(60.3)	100.0	42
25-29	9.9	42.1	3.4	44.6	100.0	79
30-39	26.9	29.9	6.7	36.6	100.0	149
40-49	31.3	32.3	8.1	28.3	100.0	110
Marital status						
Never married	(4.7)	(35.0)	(0.8)	(59.4)	100.0	48
Married	17.0	29.4	4.3	49.2	100.0	119
Living together	27.5	37.0	7.7	27.7	100.0	171
Divorced/Separated/ Widowed	26.1	26.5	5.6	41.7	100.0	58
Residence						
Urban	20.6	39.2	4.7	35.5	100.0	188
Rural	22.1	27.2	6.4	44.2	100.0	207
Province						
Niassa	*	*	*	*	100.0	11
Cabo Delgado	(3.1)	(27.2)	(9.9)	(59.7)	100.0	47
Nampula	(2.4)	(39.3)	(0.0)	(58.2)	100.0	55
Zambézia	(21.4)	(23.9)	(0.0)	(54.7)	100.0	52
Tete	*	*	*	*	100.0	10
Manica	(26.3)	(33.2)	(7.0)	(33.5)	100.0	30
Sofala	(35.1)	(31.7)	(7.4)	(25.7)	100.0	49
Inhambane	*	*	*	*	100.0	14
Gaza	34.8	31.7	9.1	24.4	100.0	47
Maputo Provincia	26.0	40.9	6.4	26.7	100.0	46
Maputo Cidade	(15.7)	(43.0)	(6.1)	(35.3)	100.0	35
Education						
No education	(28.6)	(10.1)	(1.9)	(59.4)	100.0	46
Primary	20.4	30.4	8.3	40.8	100.0	218
Secondary/Higher	20.6	45.1	2.3	32.0	100.0	131
Wealth quintile						
Lowest	(14.6)	(18.2)	(10.5)	(56.7)	100.0	52
Second	(18.6)	(19.1)	(3.7)	(58.6)	100.0	57
Middle	17.2	26.4	4.3	52.2	100.0	65
Fourth	24.6	39.4	5.3	30.6	100.0	102
Highest	25.2	44.0	5.3	25.5	100.0	120
Total 15-49	21.4	33.0	5.6	40.1	100.0	395
50-59	45.5	21.8	9.7	23.0	100.0	53
Total 15-59	24.2	31.7	6.0	38.1	100.0	448

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

[1] Includes respondents who said their test result was indeterminate, who declined to report their HIV test result, and who said they did not receive their test result

[2] Includes respondents for whom information is missing on whether or not they were ever tested for HIV

[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results

Table 3.2.3 Awareness of HIV status among PLHIV: Women and Men

Percent distribution of HIV positive women and men age 15-49 by history of prior testing for HIV and self-reported result of the most recent HIV test, according to background characteristics, Mozambique IMASIDA 2015

Background characteristic	Ever tested for HIV			Never tested for HIV [2]	Total	Number of HIV positive respondents [3]
	Self-report positive	Self-report negative	Other [1]			
Age						
15-24	18.8	43.4	5.9	31.9	100.0	269
15-19	14.8	34.5	5.8	44.9	100.0	86
20-24	20.7	47.5	5.9	25.8	100.0	183
25-29	26.5	43.4	3.5	26.6	100.0	220
30-39	41.2	27.3	5.5	26.1	100.0	451
40-49	38.6	27.4	4.7	29.3	100.0	280
Marital status						
Never married	22.1	42.2	3.1	32.7	100.0	153
Married	26.4	28.3	4.8	40.6	100.0	325
Living together	38.1	37.7	5.5	18.7	100.0	430
Divorced/Separated/ Widowed	38.2	30.1	5.5	26.2	100.0	312
Residence						
Urban	36.3	38.7	4.3	20.7	100.0	570
Rural	30.1	29.5	5.7	34.8	100.0	649
Province						
Niassa	26.2	42.8	4.0	27.0	100.0	39
Cabo Delgado	13.7	26.6	9.5	50.2	100.0	121
Nampula	5.9	40.2	0.0	54.0	100.0	106
Zambézia	25.1	31.6	2.1	41.2	100.0	160
Tete	39.8	38.1	2.0	20.1	100.0	36
Manica	36.5	34.4	5.1	24.1	100.0	97
Sofala	35.9	30.9	7.0	26.2	100.0	147
Inhambane	41.9	31.7	6.1	20.4	100.0	75
Gaza	50.7	32.0	6.1	11.1	100.0	183
Maputo Provincia	41.9	36.0	6.6	15.5	100.0	138
Maputo Cidade	38.1	38.5	3.5	19.9	100.0	119
Education						
No education	29.8	21.9	2.6	45.7	100.0	239
Primary	34.9	31.5	7.0	26.7	100.0	667
Secondary/Higher	31.5	47.7	2.6	18.1	100.0	314
Wealth quintile						
Lowest	18.0	26.6	6.7	48.7	100.0	160
Second	22.6	24.9	3.5	49.0	100.0	159
Middle	27.4	35.3	6.2	31.1	100.0	196
Fourth	39.5	35.1	4.2	21.2	100.0	332
Highest	41.1	38.7	5.0	15.2	100.0	372
Total 15-49	33.0	33.8	5.0	28.2	100.0	1,220
50-59	40.8	20.8	5.5	32.9	100.0	136
Total 15-59	33.8	32.5	5.1	28.7	100.0	1,355

[1] Includes respondents who said their test result was indeterminate, who declined to report their HIV test result, and who said they did not receive their test result

[2] Includes respondents for whom information is missing on whether or not they were ever tested for HIV

[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results

Table 3.3.1 Coverage of ART: Women

Among women age 15-49 who are HIV positive according to their self-report, percentage who report they are currently on ART, who report they were formerly on ART, and percentage who have never been on ART; and among all HIV positive women age 15-49, percentage who are on ART according to their self-report, according to the IMASIDA ARV blood test, and according to either self-report or the blood test, by background characteristics, Mozambique IMASIDA 2015

	Among self-reported HIV positive women[1]						Among all HIV positive women[2]			
							Percentage currently on ART according to:			
Background characteristic	Percent-age currently on ART [3]	Percent-age formerly on ART	Percent-age never on ART	Don't know/ missing	Total	Number of women	Self-report[3]	Blood test[4]	Self-report or blood test[5]	Number of women
Age										
15-24	71.9	10.4	17.6	0.0	100.0	48	16.4	19.6	24.6	212
15-19	*	*	*	*	100.0	12	11.8	15.6	23.1	71
20-24	(72.0)	(7.4)	(20.5)	(0.0)	100.0	37	18.7	21.6	25.3	141
25-29	83.9	4.7	9.9	1.5	100.0	50	30.1	30.8	37.9	141
30-39	82.4	6.5	11.1	0.0	100.0	146	39.7	41.9	49.2	302
40-49	85.0	1.5	13.1	0.5	100.0	74	36.9	41.3	44.7	170
Marital status										
Never married	(73.9)	(11.4)	(14.7)	(0.0)	100.0	31	22.2	30.4	34.0	105
Married	83.3	5.5	11.2	0.0	100.0	66	26.5	27.3	34.3	206
Living together	83.3	5.5	11.1	0.0	100.0	117	37.6	37.0	44.2	259
Divorced/separated/ widowed	80.9	4.2	13.8	1.1	100.0	104	33.1	38.3	42.9	254
Residence										
Urban	81.2	4.2	13.9	0.7	100.0	168	35.8	41.0	46.6	382
Rural	82.1	7.3	10.6	0.0	100.0	150	27.8	28.2	34.3	443
Province										
Niassa	*	*	*	*	100.0	7	24.2	33.5	36.4	28
Cabo Delgado	*	*	*	*	100.0	15	20.4	17.9	25.9	74
Nampula	*	*	*	*	100.0	5	(5.9)	(12.0)	(12.0)	51
Zambézia	(82.0)	(9.7)	(8.2)	(0.0)	100.0	29	22.0	29.8	32.6	108
Tete	*	*	*	*	100.0	9	(31.8)	(18.8)	(34.8)	27
Manica	(77.4)	(5.4)	(17.2)	(0.0)	100.0	27	31.8	33.7	38.4	66
Sofala	(71.5)	(6.5)	(22.0)	(0.0)	100.0	35	25.9	35.6	41.0	98
Inhambane	(66.3)	(11.6)	(22.1)	(0.0)	100.0	28	30.7	36.0	39.1	61
Gaza	83.6	5.9	10.5	0.0	100.0	76	47.0	43.5	53.6	136
Maputo Provincia	87.0	6.3	6.7	0.0	100.0	46	43.4	46.2	50.2	92
Maputo Cidade	83.8	1.9	12.4	1.9	100.0	40	39.7	41.5	49.5	84
Education										
No education	71.2	9.1	18.4	1.3	100.0	58	21.4	21.3	27.7	193
Primary	85.4	4.6	10.0	0.0	100.0	188	35.8	37.4	43.2	448
Secondary/Higher	80.1	5.7	13.7	0.5	100.0	72	31.5	39.7	45.3	183
Wealth quintile										
Lowest	*	*	*	*	100.0	21	15.4	16.0	20.5	108
Second	(71.4)	(0.0)	(28.6)	(0.0)	100.0	25	17.7	25.0	27.6	102
Middle	73.4	14.9	11.7	0.0	100.0	43	23.8	23.1	29.7	131
Fourth	87.8	1.2	10.2	0.7	100.0	106	40.4	41.0	48.3	230
Highest	81.7	6.1	11.9	0.3	100.0	123	39.7	45.1	51.2	253
Total 15-49	81.6	5.7	12.4	0.4	100.0	318	31.5	34.1	40.0	824
50-59	(92.6)	(0.0)	(7.4)	(0.0)	100.0	32	35.1	46.7	50.5	83
Total 15-59	82.6	5.2	11.9	0.3	100.0	350	31.8	35.3	41.0	908

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
ART = Antiretroviral treatment
[1] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and reported the result of their most recent HIV test was positive
[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results
[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, reported the result of their most recent HIV test was positive, and reported they were on ART
[4] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and were using ART according to the ARV blood test
[5] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are defined as using ART according to either their self-report or the ARV blood test

Table 3.3.2 Coverage of ART: Men

Among men age 15-49 who are HIV positive according to their self-report, percentage who report they are currently on ART, who report they were formerly on ART, and percentage who have never been on ART; and among all HIV positive men age 15-49, percentage who are on ART according to their self-report, according to the IMASIDA ARV blood test, and according to either self-report or the blood test, by background characteristics, Mozambique IMASIDA 2015

	Among self-reported HIV positive men[1]						Among all HIV positive men[2]			
							Percentage currently on ART according to:			
Background characteristic	Percent-age currently on ART[3]	Percent-age formerly on ART	Percent-age never on ART	Don't know/ missing	Total	Number of men	Self-report[3]	Blood test[4]	Self-report or blood test[5]	Number of men
Age										
15-24	*	*	*	*	100.0	2	2.6	8.8	10.6	57
15-19	*	*	*	*	100.0	1	*	*	*	15
20-24	*	*	*	*	100.0	1	(1.1)	(4.4)	(4.4)	42
25-29	*	*	*	*	100.0	8	6.5	8.2	9.2	79
30-39	(62.3)	(8.4)	(29.3)	(0.0)	100.0	40	16.7	18.4	26.0	149
40-49	(79.6)	(3.1)	(17.4)	(0.0)	100.0	35	24.9	30.4	35.1	110
Marital status										
Never married	*	*	*	*	100.0	2	(2.1)	(10.4)	(12.5)	48
Married	*	*	*	*	100.0	20	11.8	15.3	20.0	119
Living together	73.5	1.8	24.6	0.0	100.0	47	20.3	22.5	28.3	171
Divorced/separated/ widowed	*	*	*	*	100.0	15	16.4	18.8	21.9	58
Residence										
Urban	(76.7)	(1.8)	(21.6)	(0.0)	100.0	39	15.8	20.2	26.2	188
Rural	(64.0)	(9.6)	(26.4)	(0.0)	100.0	46	14.2	16.6	20.0	207
Province										
Niassa	*	*	*	*	100.0	3	*	*	*	11
Cabo Delgado	*	*	*	*	100.0	1	(1.5)	(12.1)	(13.6)	47
Nampula	*	*	*	*	100.0	1	(0.0)	(3.3)	(3.3)	55
Zambézia	*	*	*	*	100.0	11	(16.6)	(12.5)	(24.6)	52
Tete	*	*	*	*	100.0	6	*	*	*	10
Manica	*	*	*	*	100.0	8	(17.6)	(19.8)	(19.8)	30
Sofala	*	*	*	*	100.0	17	(18.0)	(27.0)	(32.1)	49
Inhambane	*	*	*	*	100.0	3	*	*	*	14
Gaza	*	*	*	*	100.0	16	27.0	30.1	34.0	47
Maputo Provincia	*	*	*	*	100.0	12	22.0	26.2	34.3	46
Maputo Cidade	*	*	*	*	100.0	5	(15.7)	(19.3)	(25.2)	35
Education										
No education	*	*	*	*	100.0	13	(21.8)	(8.5)	(24.0)	46
Primary	74.9	1.9	23.1	0.0	100.0	45	15.3	20.7	25.0	218
Secondary/Higher	(58.2)	(15.7)	(26.1)	(0.0)	100.0	27	12.0	17.8	19.3	131
Wealth quintile										
Lowest	*	*	*	*	100.0	8	(14.6)	(7.8)	(14.6)	52
Second	*	*	*	*	100.0	11	(1.8)	(6.1)	(6.1)	57
Middle	*	*	*	*	100.0	11	13.2	21.3	24.9	65
Fourth	(76.7)	(4.2)	(19.1)	(0.0)	100.0	25	18.9	19.2	26.6	102
Highest	(75.0)	(2.3)	(22.7)	(0.0)	100.0	30	18.9	26.2	30.4	120
Total 15-49	69.8	6.0	24.2	0.0	100.0	85	15.0	18.3	23.0	395
50-59	(75.0)	(2.9)	(22.1)	(0.0)	100.0	24	34.1	37.4	43.3	53
Total 15-59	71.0	5.3	23.7	0.0	100.0	109	17.2	20.6	25.4	448

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
ART = Antiretroviral treatment
[1] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and reported the result of their most recent HIV test was positive
[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results
[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, reported the result of their most recent HIV test was positive, and reported they were on ART
[4] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and were using ART according to the ARV blood test
[5] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are defined as using ART according to either their self-report or the ARV blood test

Table 3.3.3 Coverage of ART: Women and Men

Among women and men age 15-49 who are HIV positive according to their-self report, percentage who report they are currently on ART, who report they were formerly on ART, and percentage who have never been on ART; and among all HIV positive women and men age 15-49, percentage who are on ART according to their self-report, according to the IMASIDA ARV blood test, and according to either self-report or the blood test, by background characteristics, Mozambique IMASIDA 2015

	Among self-reported HIV positive respondents[1]						Among all HIV positive respondents[2]			
							Percentage currently on ART according to:			
Background characteristic	Percent-age currently on ART[3]	Percent-age formerly on ART	Percent-age never on ART	Don't know/ missing	Total	Number of respond-ents	Self-report[3]	Blood test[4]	Self-report or blood test[5]	Number of respond-ents
Age										
15-24	71.7	10.0	18.3	0.0	100.0	51	13.5	17.3	21.6	269
15-19	*	*	*	*	100.0	13	10.9	16.6	24.0	86
20-24	71.0	7.2	21.8	0.0	100.0	38	14.7	17.7	20.5	183
25-29	81.4	5.3	12.0	1.3	100.0	58	21.6	22.6	27.6	220
30-39	78.1	6.9	15.0	0.0	100.0	186	32.1	34.1	41.5	451
40-49	83.2	2.0	14.4	0.3	100.0	108	32.1	37.0	40.9	280
Marital status										
Never married	(72.0)	(10.6)	(17.4)	(0.0)	100.0	34	15.9	24.1	27.2	153
Married	79.9	9.2	10.9	0.0	100.0	86	21.1	22.9	29.1	325
Living together	80.5	4.5	15.0	0.0	100.0	164	30.7	31.2	37.9	430
Divorced/Separated/ Widowed	78.7	3.7	16.7	1.0	100.0	119	30.0	34.7	39.0	312
Residence										
Urban	80.3	3.8	15.4	0.6	100.0	207	29.2	34.1	39.9	570
Rural	77.9	7.8	14.3	0.0	100.0	195	23.4	24.5	29.8	649
Province										
Niassa	*	*	*	*	100.0	10	25.3	31.1	34.1	39
Cabo Delgado	*	*	*	*	100.0	17	13.1	15.7	21.1	121
Nampula	*	*	*	*	100.0	6	2.9	7.5	7.5	106
Zambézia	(80.9)	(13.2)	(5.9)	(0.0)	100.0	40	20.3	24.1	30.0	160
Tete	(72.2)	(0.0)	(25.2)	(2.6)	100.0	14	28.8	19.2	31.7	36
Manica	(75.1)	(4.1)	(20.8)	(0.0)	100.0	35	27.4	29.3	32.6	97
Sofala	64.9	7.7	27.4	0.0	100.0	53	23.3	32.7	38.0	147
Inhambane	(66.9)	(10.5)	(22.6)	(0.0)	100.0	31	28.0	31.6	34.9	75
Gaza	82.6	4.8	12.6	0.0	100.0	93	41.9	40.1	48.5	183
Maputo Provincia	86.5	6.5	7.0	0.0	100.0	58	36.3	39.5	44.9	138
Maputo Cidade	85.7	1.7	10.9	1.7	100.0	45	32.6	35.0	42.4	119
Education										
No education	72.1	7.4	19.4	1.1	100.0	71	21.5	18.9	27.0	239
Primary	83.4	4.1	12.5	0.0	100.0	232	29.1	31.9	37.2	667
Secondary/Higher	74.1	8.4	17.1	0.4	100.0	99	23.4	30.5	34.4	314
Wealth quintile										
Lowest	(84.5)	(10.0)	(5.5)	(0.0)	100.0	29	15.2	13.3	18.6	160
Second	(53.2)	(6.9)	(39.9)	(0.0)	100.0	36	12.0	18.3	20.0	159
Middle	74.1	13.4	12.4	0.0	100.0	54	20.3	22.5	28.1	196
Fourth	85.7	1.8	11.9	0.6	100.0	131	33.8	34.3	41.6	332
Highest	80.3	5.4	14.1	0.2	100.0	153	33.0	39.0	44.5	372
Total 15-49	79.1	5.7	14.8	0.3	100.0	403	26.1	29.0	34.5	1,220
50-59	85.0	1.2	13.8	0.0	100.0	55	34.7	43.1	47.7	136
Total 15-59	79.8	5.2	14.7	0.2	100.0	458	27.0	30.4	35.8	1,355

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
ART = Antiretroviral treatment
[1] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and reported the result of their most recent HIV test was positive
[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results
[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, reported the result of their most recent HIV test was positive, and reported they were on ART
[4] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and were using ART according to the ARV blood test
[5] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are defined as using ART according to either their self-report or the ARV blood test

Table 3.4.1 Viral suppression according to background characteristics: Women

Among women age 15-49 on antiretroviral treatment (ART) according to self-report, according to the IMASIDA ARV blood test, and according to either self-report or the blood test, percentage who are virally suppressed; and percentage of all HIV positive women age 15-49 who are virally suppressed, according to background characteristics, Mozambique IMASIDA 2015

	Among women who use ART as defined by:						Among all HIV positive women[4]	
	Self-report[1]		Blood test[2]		Self-report or blood test[3]			
Background characteristic	Percentage with viral load suppression	Number of women	Percentage with viral load suppression	Number of women	Percentage with viral load suppression	Number of women	Percentage with viral load suppression	Number of women
Age								
15-24	(68.3)	35	(82.8)	42	76.6	52	30.5	212
15-19	*	8	*	11	*	16	25.3	71
20-24	(73.4)	26	(81.6)	31	(77.1)	36	33.1	141
25-29	77.6	42	78.9	43	73.9	53	40.3	141
30-39	68.7	120	71.2	126	67.9	149	40.2	302
40-49	67.4	62	71.7	70	68.4	76	36.1	170
Marital status								
Never married	(72.1)	23	(77.2)	32	(74.7)	36	32.4	105
Married	76.3	55	75.7	56	73.0	71	33.6	206
Living together	62.6	98	69.9	96	65.3	115	38.6	259
Divorced/Separated/ Widowed	73.2	84	76.7	97	72.6	109	39.7	254
Residence								
Urban	74.0	137	81.1	156	76.4	178	44.3	382
Rural	65.1	123	65.7	125	63.3	152	30.5	443
Province								
Niassa	*	7	*	9	*	10	36.0	28
Cabo Delgado	*	15	*	13	*	19	24.3	74
Nampula	*	3	*	6	*	6	(17.8)	51
Zambézia	*	24	*	32	(54.2)	35	27.3	108
Tete	*	8	*	5	*	9	(26.2)	27
Manica	(72.6)	21	(80.3)	22	(74.7)	26	38.4	66
Sofala	(79.6)	25	(75.6)	35	(75.5)	40	37.5	98
Inhambane	(68.0)	19	(68.8)	22	(66.5)	24	33.6	61
Gaza	65.2	64	74.3	59	67.1	73	42.8	136
Maputo Provincia	73.1	40	77.8	43	74.4	46	45.2	92
Maputo Cidade	(85.8)	33	(88.7)	35	85.9	42	57.4	84
Education								
No education	64.0	41	59.9	41	61.6	54	24.2	193
Primary	70.6	160	74.1	168	70.5	194	38.4	448
Secondary/Higher	71.4	58	82.6	73	75.8	83	46.6	183
Wealth quintile								
Lowest	*	17	*	17	*	22	17.2	108
Second	*	18	(61.8)	25	(65.4)	28	28.9	102
Middle	(63.0)	31	(69.3)	30	(66.1)	39	27.7	131
Fourth	69.1	93	75.2	95	69.5	111	41.7	230
Highest	77.1	100	83.1	114	79.3	129	48.9	253
Total 15-49	69.8	260	74.2	281	70.4	330	36.9	824
50-59	(75.0)	29	76.4	39	74.0	42	44.6	83
Total 15-59	70.3	289	74.5	320	70.8	372	37.6	908

Notes: Viral load measured according to survey biomarker. Viral suppression is defined as a viral load of <1,000 copies/ml. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
ART = Antiretroviral treatment
[1] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, reported the result of their most recent HIV test was positive, and reported they were on ART
[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and were using ART according to the ARV blood test
[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are defined as using ART according to either their self-report or the ARV blood test
[4] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results

Table 3.4.2 Viral suppression according to background characteristics: Men

Among men age 15-49 on antiretroviral treatment (ART) according to self-report, according to the IMASIDA ARV blood test, and according to either self-report or the blood test, percentage who are virally suppressed; and percentage of all HIV positive men age 15-49 who are virally suppressed, according to background characteristics, Mozambique IMASIDA 2015

	Among men who use ART as defined by:						Among all HIV positive men[4]	
	Self-report[1]		Blood test[2]		Self-report or blood test[3]			
Background characteristic	Percentage with viral load suppression	Number of men	Percentage with viral load suppression	Number of men	Percentage with viral load suppression	Number of men	Percentage with viral load suppression	Number of men
Age								
15-24	*	1	*	5	*	6	24.7	57
15-19	*	1	*	3	*	4	*	15
20-24	*	0	*	2	*	2	(17.3)	42
25-29	*	5	*	6	*	7	15.0	79
30-39	(36.2)	25	(69.8)	27	(49.4)	39	21.3	149
40-49	(61.4)	28	(66.7)	34	(65.6)	39	28.0	110
Marital status								
Never married	*	1	*	5	*	6	(27.5)	48
Married	*	14	*	18	(69.3)	24	19.8	119
Living together	(50.1)	35	(56.3)	38	51.0	48	23.5	171
Divorced/Separated/Widowed	*	9	*	11	*	13	20.1	58
Residence								
Urban	(47.7)	30	(72.2)	38	59.7	49	27.2	188
Rural	(51.7)	29	(65.8)	34	(57.1)	41	18.0	207
Province								
Niassa	*	3	*	3	*	3	*	11
Cabo Delgado	*	1	*	6	*	6	(25.1)	47
Nampula	*	0	*	2	*	2	(12.3)	55
Zambézia	*	9	*	7	*	13	(14.7)	52
Tete	*	2	*	2	*	2	*	10
Manica	*	5	*	6	*	6	(29.2)	30
Sofala	*	9	*	13	*	16	(34.5)	49
Inhambane	*	2	*	2	*	2	*	14
Gaza	*	13	*	14	*	16	27.9	47
Maputo Provincia	*	10	*	12	*	16	19.4	46
Maputo Cidade	*	5	*	7	*	9	(27.2)	35
Education								
No education	*	10	*	4	*	11	(8.7)	46
Primary	(41.6)	33	63.2	45	54.4	55	22.9	218
Secondary/Higher	*	16	(83.7)	23	(84.9)	25	26.4	131
Wealth quintile								
Lowest	*	8	*	4	*	8	(5.2)	52
Second	*	1	*	3	*	3	(16.3)	57
Middle	*	9	*	14	*	16	31.4	65
Fourth	*	19	*	20	(58.9)	27	19.1	102
Highest	(61.6)	23	(70.7)	31	(64.9)	36	30.6	120
Total 15-49	49.7	59	69.2	72	58.5	91	22.4	395
50-59	*	18	*	20	(72.3)	23	38.9	53
Total 15-59	54.0	77	72.3	92	61.3	114	24.3	448

Notes: Viral load measured according to survey biomarker. Viral suppression is defined as a viral load of <1,000 copies/ml. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

ART = Antiretroviral treatment

[1] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, reported the result of their most recent HIV test was positive, and reported they were on ART

[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and were using ART according to the ARV blood test

[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are defined as using ART according to either their self-report or the ARV blood test

[4] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results

Table 3.4.3 Viral suppression according to background characteristics: Women and Men

Among women and men age 15-49 on antiretroviral treatment (ART) according to self-report, according to the IMASIDA ARV blood test, and according to either self-report or the blood test, percentage who are virally suppressed; and percentage of all HIV positive women and men age 15-49 who are virally suppressed, according to background characteristics, Mozambique IMASIDA 2015

	Among respondents who use ART as defined by:						Among all HIV positive respondents[4]	
	Self-report[1]		Blood test[2]		Self-report or blood test[3]			
Background characteristic	Percentage with viral load suppression	Number of respondents	Percentage with viral load suppression	Number of respondents	Percentage with viral load suppression	Number of respondents	Percentage with viral load suppression	Number of respondents
Age								
15-24	(65.5)	36	83.7	47	76.5	58	29.3	269
15-19	*	9	*	14	*	21	28.8	86
20-24	(72.2)	27	(81.2)	32	(77.0)	38	29.5	183
25-29	76.4	47	76.7	50	71.6	61	31.2	220
30-39	63.1	145	71.0	154	64.1	187	34.0	451
40-49	65.5	90	70.1	104	67.4	115	32.9	280
Marital status								
Never married	(69.1)	24	(80.3)	37	(75.9)	42	30.8	153
Married	71.5	69	79.4	74	72.1	94	28.5	325
Living together	59.3	132	66.0	134	61.0	163	32.6	430
Divorced/Separated/ Widowed	70.7	94	75.5	108	70.8	122	36.1	312
Residence								
Urban	69.3	166	79.3	194	72.8	227	38.7	570
Rural	62.5	152	65.7	159	61.9	193	26.5	649
Province								
Niassa	*	10	*	12	(56.9)	13	29.7	39
Cabo Delgado	*	16	*	19	*	26	24.6	121
Nampula	*	3	*	8	*	8	15.0	106
Zambézia	(40.8)	32	(59.7)	39	(49.5)	48	23.1	160
Tete	*	10	*	7	(60.0)	12	22.1	36
Manica	(70.9)	26	(77.7)	28	(73.4)	31	35.5	97
Sofala	(81.7)	34	74.3	48	75.4	56	36.5	147
Inhambane	(67.0)	21	(67.1)	24	(65.8)	26	31.0	75
Gaza	64.7	77	73.1	73	65.9	89	39.0	183
Maputo Provincia	65.3	50	72.8	55	66.2	62	36.6	138
Maputo Cidade	(80.9)	39	89.0	41	83.0	50	48.5	119
Education								
No education	55.5	51	59.2	45	54.2	64	21.3	239
Primary	65.6	194	71.8	213	67.0	248	33.3	667
Secondary/Higher	74.5	73	82.8	96	77.9	108	38.1	314
Wealth quintile								
Lowest	(34.1)	24	*	21	(34.5)	30	13.3	160
Second	*	19	(66.4)	29	(69.2)	32	24.4	159
Middle	(58.0)	40	62.8	44	60.9	55	28.9	196
Fourth	65.0	112	75.8	114	67.5	138	34.8	332
Highest	74.3	123	80.4	145	76.1	166	43.0	372
Total 15-49	66.0	319	73.2	354	67.8	421	32.2	1,220
50-59	72.5	47	78.9	59	73.4	65	42.4	136
Total 15-59	66.9	366	74.0	412	68.6	486	33.2	1,355

Notes: Viral load measured according to survey biomarker. Viral suppression is defined as a viral load of <1,000 copies/ml. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

ART = Antiretroviral treatment

[1] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, reported the result of their most recent HIV test was positive, and reported they were on ART

[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and were using ART according to the ARV blood test

[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are defined as using ART according to either their self-report or the ARV blood test

[4] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results

Table 3.5 Viral suppression according to self-reported HIV diagnosis and treatment status

Percentage of HIV positive women and men age 15-49 and age 15-59 who are virally suppressed, according to self-reported HIV diagnosis and treatment status, Mozambique IMASIDA 2015

	Women		Men		Total	
Self-reported HIV diagnosis and treatment status	Percentage with viral load suppression[1]	Number HIV positive[2]	Percentage with viral load suppression[1]	Number HIV positive[2]	Percentage with viral load suppression[1]	Number HIV positive[2]
			AGE 15-49			
Ever tested for HIV and self-report positive						
On ART	69.8	260	49.7	59	66.0	319
On ART, Less than 6 months	(59.9)	36	*	11	53.4	48
On ART, 6 months or longer	70.6	216	54.0	45	67.7	261
On ART, DK months	*	8	*	2	*	10
Not on ART	18.3	57	(18.4)	26	18.3	83
Formerly on ART	*	18	*	5	(21.4)	23
Never on ART	(20.4)	39	*	20	17.2	60
Ever tested for HIV and self-report negative	25.8	282	15.2	130	22.5	412
Ever tested for HIV, other result[3]	(34.3)	39	*	22	32.5	61
Not previously tested[4]	13.5	186	17.8	158	15.5	344
Total	36.9	824	22.4	395	32.2	1,220
			AGE 15-59			
Ever tested for HIV and self-report positive						
On ART	70.3	289	54.0	77	66.9	366
On ART, Less than 6 months	64.1	41	*	12	57.7	53
On ART, 6 months or longer	70.7	239	57.3	62	67.9	301
On ART, DK months	*	9	*	3	*	12
Not on ART	18.7	60	(23.8)	32	20.5	91
Formerly on ART	*	18	*	6	(23.6)	24
Never on ART	20.9	42	(16.8)	26	19.3	67
Ever tested for HIV and self-report negative	26.5	298	16.8	142	23.4	440
Ever tested for HIV, other result[3]	(32.4)	42	(23.8)	27	29.0	69
Not previously tested[4]	15.3	218	17.4	170	16.2	389
Total	37.6	908	24.3	448	33.2	1,355

Notes: HIV serostatus and viral load measured according to survey biomarker. ART use measured according to self-report. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Totals for the 15-49 and 15-59 year age groups include one case lacking data about self-reported ART use and is not presented separately.

ART = Antiretroviral treatment

[1] Viral suppression is defined as a viral load of <1,000 copies/ml

[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results

[3] Includes respondents who said their test result was indeterminate, who declined to report their HIV test result, and who said they did not receive their test result

[4] Includes respondents for whom information is missing on whether or not they were ever tested for HIV

Table 3.6.1 HIV treatment cascade

Percentage of HIV positive respondents age 15-49 who know they have HIV, percentage who are on antiretroviral treatment (ART), percentage who are on ART and have suppressed viral load, and percentage who have suppressed viral load regardless of ART use, according to sex and background characteristics, Mozambique IMASIDA 2015

Background characteristic	Percentage aware of HIV status[1]	Percentage on ART[2]	Percentage with viral load suppression and on ART[3]	Percentage with viral load suppression[4]	Number of HIV positive respondents[5]
			WOMEN		
Age					
15-24	30.4	24.6	18.8	30.5	212
25-34	49.6	42.4	28.6	37.9	279
35-49	53.3	47.9	33.7	40.1	334
Province					
Niassa	37.7	36.4	21.9	36.0	28
Cabo Delgado	25.9	25.9	14.7	24.3	74
Nampula	(15.6)	(12.0)	(12.0)	(17.8)	51
Zambézia	37.4	32.6	17.7	27.3	108
Tete	(34.8)	(34.8)	(22.1)	(26.2)	27
Manica	45.9	38.4	28.7	38.4	66
Sofala	48.8	41.0	31.0	37.5	98
Inhambane	52.8	39.1	26.0	33.6	61
Gaza	62.8	53.6	36.0	42.8	136
Maputo Provincia	56.0	50.2	37.4	45.2	92
Maputo Cidade	55.1	49.5	42.5	57.4	84
Zone					
North	24.6	23.2	15.1	24.3	153
Central	42.8	36.9	24.9	33.0	298
South	57.7	49.5	36.2	45.1	373
Total 15-49	46.2	40.0	28.2	36.9	824
50-59	53.3	50.5	37.4	44.6	83
Total 15-59	46.8	41.0	29.0	37.6	908
			MEN		
Age					
15-24	11.9	10.6	8.0	24.7	57
25-34	17.6	15.1	8.9	19.6	153
35-49	41.7	33.3	18.9	24.0	185
Province					
Niassa	*	*	*	*	11
Cabo Delgado	(15.2)	(13.6)	(9.7)	(25.1)	47
Nampula	(5.8)	(3.3)	(3.3)	(12.3)	55
Zambézia	(24.6)	(24.6)	(9.1)	(14.7)	52
Tete	*	*	*	*	10
Manica	(28.5)	(19.8)	(13.4)	(29.2)	30
Sofala	(45.2)	(32.1)	(24.2)	(34.5)	49
Inhambane	*	*	*	*	14
Gaza	40.4	34.0	20.5	27.9	47
Maputo Provincia	38.3	34.3	14.5	19.4	46
Maputo Cidade	(25.2)	(25.2)	(17.5)	(27.2)	35
Zone					
North	11.8	9.9	6.9	17.7	112
Central	34.9	26.1	15.3	24.4	141
South	34.3	30.2	16.8	24.1	142
Total 15-49	28.1	23.0	13.4	22.4	395
50-59	51.4	43.3	31.3	38.9	53
Total 15-59	30.8	25.4	15.5	24.3	448

(Continued…)

Table 3.6.1—*Continued*

Background characteristic	Percentage aware of HIV status[1]	Percentage on ART[2]	Percentage with viral load suppression and on ART[3]	Percentage with viral load suppression[4]	Number of HIV positive respondents[5]
			TOTAL		
Age					
15-24	26.5	21.6	16.5	29.3	269
25-34	38.3	32.7	21.6	31.4	432
35-49	49.2	42.7	28.4	34.3	519
Province					
Niassa	35.1	34.1	19.4	29.7	39
Cabo Delgado	21.7	21.1	12.8	24.6	121
Nampula	10.5	7.5	7.5	15.0	106
Zambézia	33.2	30.0	14.8	23.1	160
Tete	41.0	31.7	19.0	22.1	36
Manica	40.4	32.6	23.9	35.5	97
Sofala	47.6	38.0	28.7	36.5	147
Inhambane	47.2	34.9	23.0	31.0	75
Gaza	57.0	48.5	32.0	39.0	183
Maputo Provincia	50.1	44.9	29.7	36.6	138
Maputo Cidade	46.3	42.4	35.2	48.5	119
Zone					
North	19.2	17.6	11.6	21.5	265
Central	40.2	33.4	21.8	30.2	439
South	51.3	44.2	30.8	39.4	515
Total 15-49	40.3	34.5	23.4	32.2	1,220
50-59	52.6	47.7	35.0	42.4	136
Total 15-59	41.5	35.8	24.6	33.2	1,355

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
ART = Antiretroviral treatment
[1] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who either reported the result of their most recent HIV test was positive or are on ART according to the ARV blood test
[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are defined as using ART according to either their self-report or the ARV blood test
[3] Viral suppression is defined as a viral load of <1,000 copies/ml according to the IMASIDA viral load test. Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, who are defined as using ART according to either their self-report or the ARV blood test, and who have viral suppression. This percentage excludes people with viral suppression who did not report they were using ART and did not have ARVs detected according to the IMASIDA blood test.
[4] Viral suppression is defined as a viral load of <1,000 copies/ml according to the IMASIDA viral load test. This column includes all respondents with suppressed viral load, without regard to treatment status
[5] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results

Table 3.6.2 90-90-90 treatments targets

Among HIV positive respondents age 15-49, percentage who know they have HIV; among respondents who know they have HIV, percentage who are on ART; among respondents who are on ART, percentage who have suppressed viral load, according to sex and background characteristics, Mozambique IMASIDA 2015

Background characteristic	Among HIV positive respondents[1]		Among HIV positive respondents who are aware of their status[2]		Among respondents on ART[3]	
	Percentage aware of HIV status[2]	Number	Percentage on ART[3]	Number	Percentage with viral load suppression[4]	Number
			WOMEN			
Age						
15-24	30.4	212	80.7	65	76.6	52
25-34	49.6	279	85.4	138	67.5	118
35-49	53.3	334	89.8	178	70.4	160
Province						
Niassa	37.7	28	*	11	*	10
Cabo Delgado	25.9	74	*	19	*	19
Nampula	(15.6)	51	*	8	*	6
Zambézia	37.4	108	(87.1)	40	(54.2)	35
Tete	(34.8)	27	*	9	*	9
Manica	45.9	66	(83.8)	30	(74.7)	26
Sofala	48.8	98	84.1	48	(75.5)	40
Inhambane	52.8	61	(74.1)	32	(66.5)	24
Gaza	62.8	136	85.3	85	67.1	73
Maputo Provincia	56.0	92	89.6	52	74.4	46
Maputo Cidade	55.1	84	89.9	46	85.9	42
Zone						
North	24.6	153	(94.2)	38	(65.2)	35
Central	42.8	298	86.1	128	67.5	110
South	57.7	373	85.7	215	73.1	184
Total 15-49	46.2	824	86.7	381	70.4	330
50-59	53.3	83	94.7	44	74.0	42
Total 15-59	46.8	908	87.5	425	70.8	372
			MEN			
Age						
15-24	11.9	57	*	7	*	6
25-34	17.6	153	(85.6)	27	(58.7)	23
35-49	41.7	185	79.8	77	56.8	62
Province						
Niassa	*	11	*	3	*	3
Cabo Delgado	(15.2)	47	*	7	*	6
Nampula	(5.8)	55	*	3	*	2
Zambézia	(24.6)	52	*	13	*	13
Tete	*	10	*	6	*	2
Manica	(28.5)	30	*	9	*	6
Sofala	(45.2)	49	*	22	*	16
Inhambane	*	14	*	3	*	2
Gaza	40.4	47	*	19	*	16
Maputo Provincia	38.3	46	*	18	*	16
Maputo Cidade	(25.2)	35	*	9	*	9
Zone						
North	11.8	112	*	13	*	11
Central	34.9	141	(74.7)	49	(58.8)	37
South	34.3	142	88.2	49	55.5	43
Total 15-49	28.1	395	81.8	111	58.5	91
50-59	51.4	53	(84.3)	27	(72.3)	23
Total 15-59	30.8	448	82.3	138	61.3	114

(Continued…)

Table 3.6.2—*Continued*

Background characteristic	Among HIV positive respondents[1]		Among HIV positive respondents who are aware of their status[2]		Among respondents on ART[3]	
	Percentage aware of HIV status[2]	Number	Percentage on ART[3]	Number	Percentage with viral load suppression[4]	Number
			TOTAL			
Age						
15-24	26.5	269	81.5	71	76.5	58
25-34	38.3	432	85.4	165	66.1	141
35-49	49.2	519	86.8	255	66.6	221
Province						
Niassa	35.1	39	(97.3)	14	(56.9)	13
Cabo Delgado	21.7	121	*	26	*	26
Nampula	10.5	106	*	11	*	8
Zambézia	33.2	160	(90.2)	53	(49.5)	48
Tete	41.0	36	(77.3)	15	(60.0)	12
Manica	40.4	97	80.6	39	(73.4)	31
Sofala	47.6	147	79.9	70	75.4	56
Inhambane	47.2	75	(74.0)	35	(65.8)	26
Gaza	57.0	183	85.1	104	65.9	89
Maputo Provincia	50.1	138	89.6	69	66.2	62
Maputo Cidade	46.3	119	91.5	55	83.0	50
Zone						
North	19.2	265	91.6	51	66.2	47
Central	40.2	439	83.0	177	65.3	147
South	51.3	515	86.1	264	69.8	227
Total 15-49	40.3	1,220	85.6	492	67.8	421
50-59	52.6	136	90.8	71	73.4	65
Total 15-59	41.5	1,355	86.2	563	68.6	486

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
ART = Antiretroviral treatment
[1] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, and have valid ARV blood test results
[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who either reported the result of their most recent HIV test was positive or are on ART according to the ARV blood test
[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are defined as using ART according to either their self-report or the ARV blood test
[4] Viral suppression is defined as a viral load of <1,000 copies/ml according to the IMASIDA viral load test. Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, who are defined as using ART according to either their self-report or the ARV blood test, and who have viral suppression. This percentage excludes people with viral suppression who did not report they were using ART and did not have ARVs detected according to the IMASIDA blood test.

PMTCT COVERAGE AND PREVALENCE OF HIV AMONG CHILDREN

4

Key Findings

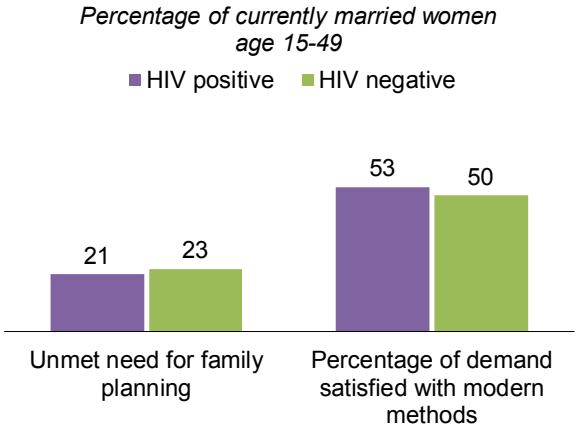
- ***Unmet need by HIV status:*** Unmet need for family planning is 21% among currently married women who are living with HIV, compared with 23% among currently married women who are HIV negative.
- ***HIV testing during antenatal care:*** The percentage of women who were tested for HIV during antenatal care and received the result has increased from 44% in the 2009 INSIDA to 67% in the 2015 IMASIDA.
- ***Coverage of PMTCT services:*** 44% percent of women living with HIV who are currently pregnant or breastfeeding are taking ART.
- ***Pediatric HIV:*** 2% of children age 6-23 months are living with HIV. HIV prevalence is 13.1% among children whose mothers were HIV positive at the time of the survey.
- ***Coverage of HIV testing among children:*** 11% of children born in the two years preceding the survey have ever been tested for HIV. Among HIV-exposed children, 56% have been tested for HIV.

Programs for the prevention of mother-to-child transmission (PMTCT) are organized around a four-pronged approach consisting of (1) primary prevention of HIV among women of reproductive age, (2) prevention of unintended pregnancies among women living with HIV, (3) HIV testing and antiretroviral treatment for pregnant women who are living with HIV, and (4) ongoing treatment and support for women and children living with HIV and their families (UNAIDS, 2011). This chapter reports on the coverage of PMTCT services in Mozambique related to prongs two and three, on HIV prevalence among children 6-23 months, and on coverage of HIV testing services among children.

4.1 PREVENTION OF UNINTENDED PREGNANCY AMONG WOMEN LIVING WITH HIV

Table 4.1 and **Figure 4.1** show indicators of unmet need for family planning and the percentage of demand satisfied among currently married women who participated in the IMASIDA HIV test. Overall, 23% of currently married women had unmet need for family planning. Unmet need does not vary much by HIV status, with HIV positive women having slightly lower unmet need compared with those who are HIV negative (21% versus 23%). The percentage of demand for family planning satisfied by modern methods is also slightly higher among married women living with HIV than among women who are HIV negative (53% versus 50%).

Figure 4.1 **Unmet need and percentage of demand satisfied by modern methods according to HIV status**



On the other hand, the percentage of currently married women who are using a method of family planning (met need) is slightly higher among HIV negative women than HIV positive women, as is total demand (unmet need plus met need) (**Table 4.1**).

Women living with HIV are more likely than women who are HIV negative to want to use family planning to limit their number of births, while women who are HIV negative are more likely than women who are living with HIV to want to use family planning to space their births.

The associations between HIV status and indicators of unmet need and demand for family planning are similar when looking at all women. By contrast, among unmarried sexually active women, the percentage of demand satisfied by modern methods is slightly higher among HIV negative women than HIV positive women.

4.2 HIV TESTING AND AWARENESS OF HIV STATUS DURING PREGNANCY

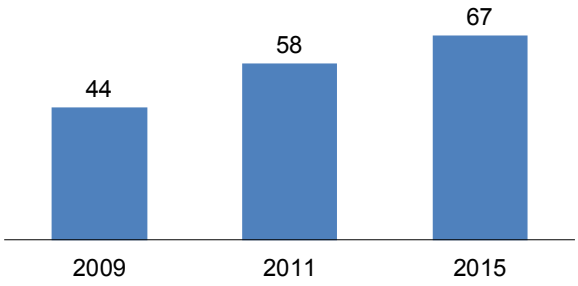
4.2.1 HIV Testing Among Pregnant Women

HIV testing for pregnant women is a fundamental tool for reducing mother-to-child transmission of HIV and promoting maternal survival. **Table 4.2** shows that only half (54%) of women age 15-49 who had a live birth in the two years preceding the survey received counseling on HIV during an antenatal care (ANC) visit. Fewer than half of women (45%) were counseled, tested and received the result of the HIV test during ANC (**Table 4.2**). This percentage increases with level of education and wealth.

Trends: The percentage of women age 15-49 who had a live birth in the two years preceding the survey who were tested for HIV during antenatal care (ANC) and received the test result has increased from 44% in 2009 to 58% in 2011 and to 67% in 2015 (**Figure 4.2**).

Figure 4.2 **Trends in HIV testing during antenatal care**

Percentage of women age 15-49 who were tested for HIV during ANC and received the test result



4.2.2 Awareness of Positive HIV Status during Pregnancy

Section 4.2.1 describes findings on coverage of HIV testing during pregnancy among all women. This section presents results on coverage of HIV testing during pregnancy and awareness of status among pregnant women who are living with HIV. The 2015 Mozambique IMASIDA asked questions about HIV testing during ANC and knowledge of status during pregnancy among all women who gave birth in the two years preceding the survey. In assessing the coverage of HIV testing during pregnancy among women who are living with HIV, it is important to note that the IMASIDA does not include a verified measure of each woman's HIV status at the time of the birth. **Table 4.3** shows coverage of testing and knowledge of HIV status among women who had a birth in the past two years and who are currently HIV positive, according to the IMASIDA HIV test. With this short reference period of two years, it is likely that the vast majority of women who had HIV at the time of the survey were also HIV positive when they gave birth. However, it is important to keep in mind as a limitation the possibility that some of them acquired HIV recently, and were HIV negative when they gave birth.

Awareness of positive HIV status during pregnancy

Percentage of women living with HIV with a live birth in the two years preceding the survey who:

- Reported they were tested for HIV during ANC for the pregnancy resulting in their most recent live birth and that the test result was positive, or
- Reported they already knew they were HIV positive in response to a question about why they did not receive an HIV test during ANC.

Sample: Women age 15-49 who were HIV positive at the time of the survey according to the IMASIDA blood test and who had a live birth in the two years preceding the survey.

Overall, 71% of women who are currently living with HIV and who had a live birth in the two years preceding the survey were aware of their HIV status during the pregnancy that resulted in their most recent live birth. Sixty-five percent were tested for HIV during ANC or labor and received the test result, and an additional 6% of women reported they did not receive an HIV test during ANC because they already knew they were living with HIV.

Patterns by background characteristics

- Among women who are currently living with HIV, those age 15-29 are more likely than those age 30-49 to have been aware of their HIV status during the pregnancy resulting in their recent birth (74% compared with 67%).
- Urban women who are currently living with HIV are much more likely than those in rural areas to have been aware of their HIV status during the pregnancy resulting in their recent birth (85%

compared with 61%). Most of this difference is due to higher coverage of HIV testing during ANC among women in urban areas (80%) than among those in rural areas (55%).

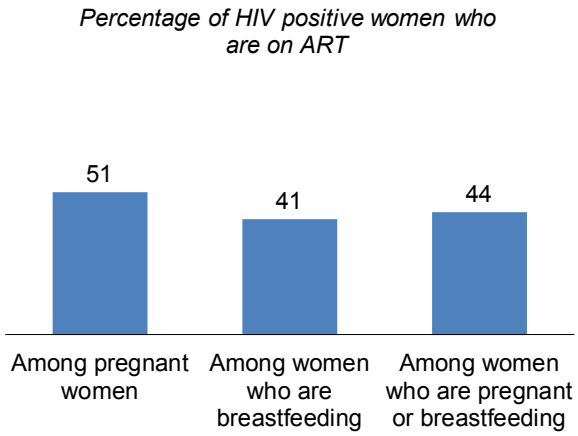
4.3 ART Use During Pregnancy and Breastfeeding

4.3.1 ART Use among Women Who Are Currently Pregnant or Breastfeeding

Use of ART during pregnancy and breastfeeding by women who are living with HIV is a key intervention to prevent transmission of HIV from a mother to her baby. In the 2015 Mozambique IMASIDA, women were asked to report if they were currently pregnant. For each surviving child born in the two years preceding the survey, women were asked if they were currently breastfeeding that child. If a woman reported that she had ever been tested for HIV, and received the result, and that the result was positive, she was asked if she was currently taking antiretroviral medications.

Table 4.4 and **Figure 4.3** show ART use among women who are currently living with HIV according to the IMASDIA HIV test, and are currently pregnant or breastfeeding. The estimates of ART use shown in **Table 4.4** and **Figure 4.3** use the same definition of ART use applied in the estimates of the 90-90-90 indicators in Chapter 3 (self-reported ART use or ARV biomarker detected). Among women living with HIV who are currently pregnant, 51% are on ART, and among those who are currently breastfeeding, 41% are on ART. Forty-four percent of women living with HIV who are either pregnant or breastfeeding are on ART.

***Figure 4.3* ART use during pregnancy and breastfeeding**



Patterns by background characteristics

- Among women living with HIV who are either pregnant or breastfeeding, ART use is slightly higher among women age 30-49 than among those 15-29 (46% versus 42%).
- ART use is also higher among breastfeeding women who gave birth less than 12 months ago (50%) compared with women who gave birth 12-23 months ago (28%).
- Among women living with HIV who are either pregnant or breastfeeding, ART use is higher among those in urban areas (56%) than among those in rural areas (37%).

4.3.2 ART Use by Mothers of HIV-exposed Children

HIV-exposure status of children

HIV-exposed: Children whose mothers reported that they were tested for HIV during pregnancy or labor and that the test result was positive, or whose mothers said they were not tested for HIV during the pregnancy because they already knew they had HIV.

HIV-unexposed: Children whose mothers reported they had ever been tested for HIV and that the result of their most recent HIV test was negative, or whose mothers reported that they were HIV positive at the time of the survey but reported they were tested during ANC or labor for the index birth and the test result was negative.

HIV-exposure status unknown: Children whose exposure status is ambiguous or unknown based on the mothers' self-reported information.

Sample: Children born in the two years preceding the survey whose mothers were interviewed. Includes surviving and deceased children.

Another way to look at coverage of PMTCT services is to look retrospectively at ART use among the mothers of HIV-exposed children born in the two years preceding the survey. In the 2015 Mozambique IMASIDA, exposure status of a child is defined by self-report of the mother and is subject to reporting bias. Women who reported they knew they had HIV at the time of the birth of the child were asked if they took medicine to protect their baby from HIV during pregnancy and during breastfeeding. The mothers of 96% of HIV-exposed children took ART during pregnancy. Ninety-four percent of HIV-exposed children were ever breastfed, and, among them, 87% of their mothers took ART during breastfeeding (**Table 4.5**).

4.4 HIV Prevalence Among Children

The 2015 Mozambique IMASIDA included an HIV test for children age 6-23 months. The testing methods used are described in Appendix B.

4.4.1 Participation in the IMASIDA HIV test for children age 6-23 months

Response rate for the IMASIDA HIV test
Percentage of children who were tested for HIV as part of the IMASIDA survey.

Sample: Children age 6-23 months listed in the household questionnaire.

As shown in **Table 4.6**, 83% of eligible children participated in the IMASIDA HIV test. Participation was somewhat lower among children age 6-11 months compared with children age 12-23 months. Participation was also below average in urban areas and the highest wealth quintile. By province, participation ranges from 67% in Zambézia to 93% in Gaza.

4.4.2 HIV Prevalence among Children Age 6-23 Months

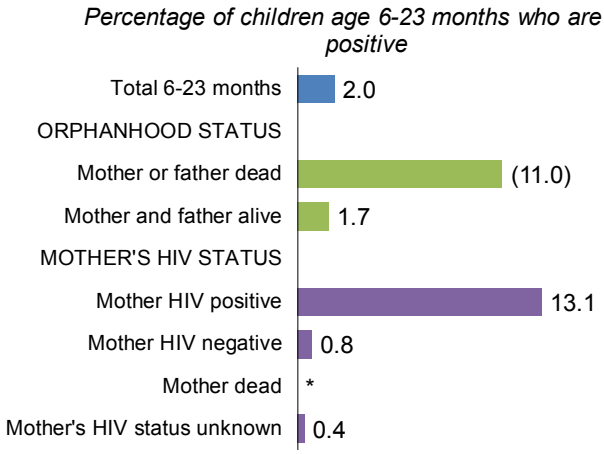
HIV prevalence
Percentage of children with positive results on the IMASIDA HIV test.
Sample: Children age 6-23 months tested for HIV as part of the survey.

Two percent of children age 6-23 months are living with HIV, including 1.7% of boys and 2.3% of girls. By age group, HIV prevalence is highest among children age 12-17 months (2.6%) and lowest among those 18-23 months (1.1%) (**Table 4.7**).

Patterns by orphanhood and mother's HIV status

- HIV prevalence is higher among children with at least one parent who is deceased than among those with both parents alive (11.0% versus 1.7%) (**Table 4.8** and **Figure 4.4**)
- HIV prevalence is 13.1% among children whose mothers were HIV positive at the time of the survey.

Figure 4.4 **HIV prevalence of children according to orphanhood and mother's HIV status**



Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

4.5 Coverage of HIV Testing Services Among Children

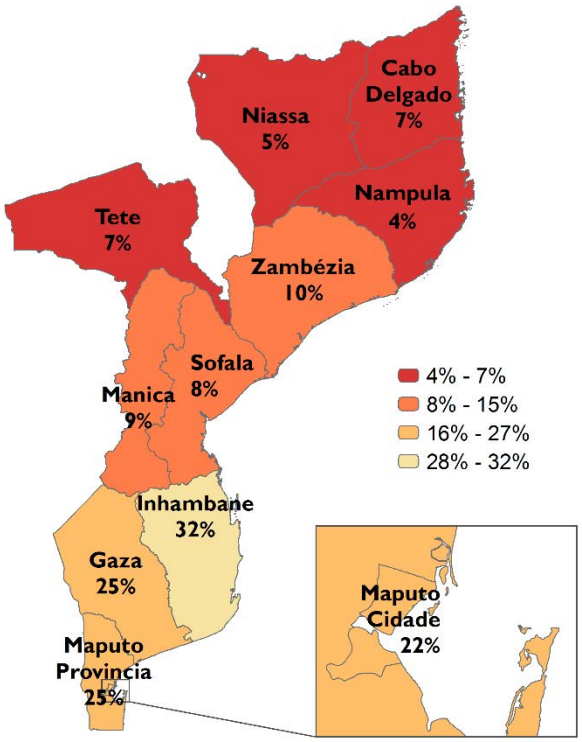
The 2015 Mozambique IMASIDA asked all women who had a birth in the two years preceding the survey about coverage of HIV testing services for their children. **Table 4.9** includes information on the percentage of children born in the two years preceding the survey who have received HIV testing services, and received the result of the HIV test. This table excludes children whose mothers were not interviewed. Eleven percent of children born in the two years preceding the survey have ever been tested for HIV and received the test result.

Patterns by background characteristics

- Three in ten children (29%) whose mothers are currently living with HIV have ever been tested for HIV and received the result, compared with 8% of children whose mothers are HIV negative.
- Over half (56%) of children who are HIV-exposed according to their mothers' reports have ever been tested for HIV and received the result, compared with 12% of children who were not exposed to HIV.
- The percentage of children who have been tested for HIV increases with age from 6% among those age 0-5 months to 14% among those age 18-23 months.
- Coverage of HIV testing among children born in the two years preceding the survey is 25% or greater in Inhambane (32%), Gaza (25%), and Maputo Provincia (25%), and is 5% or lower in Nampula (4%) and Niassa (5%) (**Figure 4.5**).

***Figure 4.5* Coverage of HIV testing services**

Percentage of children born in the two years preceding the survey who have ever been tested for HIV and received the result



List of Tables

For more information on HIV prevalence, see the following tables:

- **Table 4.1** **Need and demand for family planning among currently married women, all women, and unmarried sexually active women by HIV status**
- **Table 4.2** **Pregnant women counseled and tested for HIV**
- **Table 4.3** **Awareness of HIV status during pregnancy among women who are currently HIV positive**
- **Table 4.4** **ART use during pregnancy and breastfeeding**
- **Table 4.5** **ART use by mothers of HIV-exposed children**
- **Table 4.6** **Participation in the IMASIDA HIV test among children**
- **Table 4.7** **Prevalence of HIV among children**
- **Table 4.8** **HIV prevalence among children by orphanhood and serological status of the mother**
- **Table 4.9** **Coverage of HIV testing services in children**

Table 4.1 Need and demand for family planning among currently married women, all women, and unmarried sexually active women by HIV status

Among currently married women age 15-49, all women age 15-49, and unmarried sexually active women age 15-49, who were tested for HIV in the 2015 Mozambique IMASIDA, the percentage with unmet need for family planning, percentage with met need for family planning, total demand for family planning, and percentage of the demand for family planning that is satisfied, according to current HIV status, Mozambique IMASIDA 2015

	Unmet need for family planning			Met need for family planning (currently using)			Total demand for family planning[2]					
HIV status[1]	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total	Percentage of demand satisfied[3]	Percentage of demand satisfied by modern methods[4]	Number of women
CURRENTLY MARRIED WOMEN												
HIV positive	11.4	9.7	21.1	12.0	13.4	25.5	23.5	23.1	46.6	54.7	53.3	499
HIV negative[5]	17.0	6.2	23.2	16.7	10.6	27.3	33.7	16.9	50.5	54.0	50.1	3,329
Total[6]	16.3	6.7	22.9	16.1	11.0	27.1	32.3	17.7	50.0	54.1	50.5	3,828
ALL WOMEN												
HIV positive	9.7	7.8	17.5	15.1	12.8	27.9	24.8	20.6	45.4	61.4	59.0	895
HIV negative[5]	14.3	4.8	19.1	17.7	9.4	27.1	32.1	14.2	46.3	58.6	54.8	4,914
Total[6]	13.6	5.3	18.9	17.3	9.9	27.2	30.9	15.2	46.1	59.1	55.4	5,809
UNMARRIED SEXUALLY ACTIVE WOMEN[7]												
HIV positive	16.9	12.0	28.9	25.9	16.2	42.1	42.8	28.2	71.0	59.3	58.0	132
HIV negative[5]	25.3	5.7	31.1	41.0	10.8	51.7	66.3	16.5	82.8	62.5	62.5	368
Total[6]	23.1	7.4	30.5	37.0	12.2	49.2	60.1	19.6	79.7	61.7	61.4	500

Notes: Numbers in this table correspond to the revised definition of unmet need described in Bradley et al., 2012.
[1] According to the IMASIDA HIV test
[2] Total demand is the sum of unmet need and met need
[3] Percentage of demand satisfied is met need divided by total demand
[4] Modern methods include female sterilization, male sterilization, IUD, implants, injectables, pill, male condom, female condom, and lactational amenorrhea method (LAM)
[5] Includes respondents classified as negative, indeterminate, and inconclusive according to the IMASIDA HIV test
[6] Excludes women who did not participate in the IMASIDA HIV test
[7] Women who have had sexual intercourse within 30 days before the survey

Table 4.2 Pregnant women counseled and tested for HIV

Among all women age 15-49 who gave birth in the two years preceding the survey, the percentage who received counseling on HIV during antenatal care, percentage who received an HIV test during antenatal care for their most recent birth by whether they received their results and post-test counseling, and percentage who received an HIV test during ANC or labor for their most recent birth by whether they received their test results, according to background characteristics, Mozambique IMASIDA 2015

Background characteristic	Percentage who received counseling on HIV during antenatal care[1]	Percentage who were tested for HIV during antenatal care and who:			Percentage who received counseling on HIV and an HIV test during ANC, and the results	Percentage who had an HIV test during ANC or labor and who:[2]		Number of women who gave birth in the past two years[3]
		Received results and received post-test counseling	Received results and did not receive post-test counseling	Did not receive results		Received results	Did not receive results	
Age								
15-24	50.6	39.9	30.1	4.7	43.0	70.4	4.9	1,090
15-19	51.0	38.6	30.1	6.7	41.8	68.9	6.7	453
20-24	50.3	40.9	30.1	3.4	43.8	71.4	3.6	637
25-29	54.5	42.4	24.2	3.5	45.0	68.0	3.0	474
30-39	62.1	42.4	23.8	5.3	48.8	67.1	5.3	546
40-49	50.4	28.2	24.3	5.0	38.5	52.5	5.0	147
Marital status								
Never married	57.8	41.4	38.3	0.4	53.1	80.1	0.4	164
Married or living together	53.0	40.6	26.3	5.2	43.8	67.5	5.2	1,786
Divorced/Separated/ Widowed	59.4	37.8	24.6	3.5	44.3	63.9	3.5	308
Residence								
Urban	68.0	57.5	26.0	2.5	62.2	83.9	2.7	586
Rural	49.4	34.2	27.3	5.4	38.3	62.3	5.2	1,671
Province								
Niassa	56.3	56.4	17.4	2.7	50.7	73.8	2.7	138
Cabo Delgado	40.6	19.7	24.4	13.1	27.5	45.4	12.8	221
Nampula	59.6	35.5	26.9	4.5	43.5	62.7	4.2	496
Zambézia	33.2	31.0	20.0	1.1	24.5	52.8	1.1	313
Tete	73.3	40.5	31.0	2.5	58.5	71.6	2.5	210
Manica	32.1	37.1	40.5	0.9	30.4	77.6	1.3	186
Sofala	51.5	38.6	25.7	10.9	45.5	65.1	10.9	228
Inhambane	74.1	64.4	25.8	3.9	68.9	90.1	3.9	124
Gaza	61.6	52.9	33.0	3.8	55.5	86.5	3.9	178
Maputo Provincia	78.8	58.6	28.0	2.3	73.6	88.7	3.0	86
Maputo Cidade	72.8	62.6	27.7	0.9	66.2	90.3	0.9	78
Education								
No education	46.6	31.7	21.0	5.8	35.0	53.5	5.9	631
Primary	54.2	39.0	28.7	5.1	43.6	68.3	5.0	1,248
Secondary/Higher	67.1	59.0	31.1	1.2	63.4	90.7	1.1	378
Wealth quintile								
Lowest	47.2	29.3	24.8	3.3	33.5	55.7	2.8	535
Second	45.8	28.1	29.6	7.1	34.0	58.2	7.2	517
Middle	49.7	36.6	25.9	6.6	40.3	62.7	6.6	453
Fourth	64.0	56.4	28.4	2.8	57.5	85.2	2.8	425
Highest	72.5	61.7	26.0	2.8	68.2	88.3	3.0	326
Total 15-49	54.2	40.3	27.0	4.6	44.5	67.9	4.6	2,257

[1] In this context, "pretest counseling" means that someone talked with the respondent about all three of the following topics: 1) babies getting HIV from their mother, 2) preventing the virus, and 3) getting tested for HIV.
[2] Women are asked whether they received an HIV test during labor only if they were not tested for HIV during ANC.
[3] Denominator for percentages includes women who did not receive antenatal care for their last birth in the past two years.

Table 4.3 Awareness of HIV status during pregnancy among women who are currently HIV positive

Among women who currently have HIV and who had a live birth in the 2 years preceding the survey, percent distribution by factors associated with awareness of HIV status during the pregnancy resulting in their most recent live birth, and percentage aware of HIV status during the pregnancy resulting in their most recent live birth, according to background characteristics, Mozambique IMASIDA 2015

	Testing for HIV during ANC							
	Percentage who had an HIV test during ANC or labor and who received the result	Percentage who had an HIV test during ANC or labor and did not receive the result	Percentage not tested during ANC or labor		Don't know/ Missing	Total	Percentage aware of HIV status during the pregnancy resulting in their most recent live birth	Number of women who currently have HIV and had a live birth in the past 2 years[3]
Background characteristic			Because already aware HIV positive[1]	Other reason[2]				
Age								
15-29	69.8	4.3	3.7	15.5	6.8	100.0	73.5	139
30-49	57.7	5.4	8.9	25.0	3.0	100.0	66.6	88
Residence								
Urban	79.5	2.5	5.9	8.3	3.8	100.0	85.4	92
Rural	55.4	6.2	5.6	26.5	6.3	100.0	61.0	136
Total	65.1	4.7	5.7	19.1	5.3	100.0	70.8	228

ANC = Antenatal care
[1] Based on unprompted self report in response to a question about why they were not tested for HIV during ANC
[2] Leading reasons for not receiving an HIV test included not wanting the test, HIV test being unavailable, certainty they did not have HIV, fear of knowing own HIV status, and fear that others would find out their HIV status. This column includes women who did not receive ANC.
[3] Includes women who are HIV positive at the time of the survey according to the survey blood test. A small percentage of these women could have acquired HIV after their most recent live birth.

Table 4.4 ART use during pregnancy and breastfeeding

Among women age 15-49 who are HIV positive and currently pregnant, among women age 15-49 who are HIV positive and currently breastfeeding, and among women age 15-49 who are HIV positive and either currently pregnant or breastfeeding, the percentage who are currently on antiretroviral treatment (ART), according to background characteristics, Mozambique IMASIDA 2015

	HIV positive and currently pregnant[1]		HIV positive and currently breastfeeding[2]		HIV positive and currently pregnant or breastfeeding[3]	
Background characteristic	Currently on ART[4]	Number of women	Currently on ART[4]	Number of women	Currently on ART[4]	Number of women
Age						
15-29	(43.0)	28	41.2	92	41.6	121
30-49	(59.9)	23	41.0	60	46.2	83
Duration of pregnancy (in months)						
<6	(45.6)	22	na	na	na	na
6+	(54.2)	29	na	na	na	na
Months since birth of the child						
<12	na	na	49.8	92	na	na
12+	na	na	28.0	61	na	na
Residence						
Urban	(49.1)	24	59.5	47	56.1	70
Rural	(51.8)	27	33.0	106	36.8	133
Total	50.6	51	41.1	153	43.5	204

ART = Antiretroviral treatment
Note: Figures in parentheses are based on 25-49 unweighted cases.
na = Not applicable
[1] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are currently pregnant according to self-report
[2] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who had a live birth in the two years preceding the survey and are currently breastfeeding according to self-report
[3] Includes respondents who tested positive for HIV according to the IMASIDA blood test, have valid viral load results, have valid ARV blood test results, and who are currently pregnant or who had a live birth in the two years preceding the survey and are currently breastfeeding according to self-report
[4] Includes respondents who are using ARVs according to either their self-report or to the ARV blood test

Table 4.5 ART use by mothers of HIV-exposed children

Among HIV-exposed children born in the 23 months preceding the survey, the percentage whose mothers took ART during pregnancy and the percentage ever breastfed; and among HIV-exposed children born in the 23 months preceding the survey who were ever breastfed, the percentage whose mothers took ART during breastfeeding, according to background characteristics Mozambique IMASIDA 2015

				Among children ever breastfed	
Background characteristic	Percentage whose mothers took ART during pregnancy[1]	Percentage ever breastfed	Number of children	Percentage whose mothers took ARVs during breastfeeding[2]	Number of children
Residence					
Urban	99.5	89.8	46	92.8	41
Rural	92.4	96.5	57	83.3	55
Total	95.6	93.5	103	87.3	96

Note: HIV-exposed children are those whose mothers were HIV-positive prior to the birth of the child. HIV-exposure status is determined by information reported by the mother on her HIV status during the pregnancy of the index child, and is subject to reporting bias. Children whose mothers seroconverted during breastfeeding are not captured as HIV-exposed because this information is unknown.
ART = antiretroviral treatment
[1] Based on mother's report of ART use during pregnancy
[2] Based on mother's report of ART use during breastfeeding

Table 4.6 Participation in the IMASIDA HIV test among children

Percent distribution of children age 6-23 months eligible for HIV testing by testing status, according to background characteristics (unweighted), Mozambique IMASIDA 2015

Background characteristic	DBS tested[1]	Refused to provide blood	Absent at the time of blood collection	Other/ Missing[2]	Total	Number
Age in months						
6-11	78.9	11.4	2.4	7.3	100.0	535
12-17	84.4	7.5	1.9	6.2	100.0	584
18-23	86.8	6.3	2.0	4.8	100.0	537
Sex						
Female	84.1	8.4	2.2	5.3	100.0	847
Male	82.7	8.4	2.0	6.9	100.0	809
Residence						
Urban	76.4	12.8	3.8	7.0	100.0	585
Rural	87.2	6.0	1.2	5.6	100.0	1,071
Province						
Niassa	79.0	16.0	2.5	2.5	100.0	162
Cabo Delgado	69.5	17.6	1.5	11.5	100.0	131
Nampula	90.7	4.1	1.0	4.1	100.0	193
Zambézia	67.4	14.4	2.1	16.0	100.0	187
Tete	86.7	10.1	1.3	1.9	100.0	158
Manica	86.1	3.2	1.3	9.5	100.0	158
Sofala	91.0	5.4	0.0	3.6	100.0	167
Inhambane	91.6	0.0	2.5	5.9	100.0	119
Gaza	93.0	2.2	3.2	1.6	100.0	186
Maputo Provincia	83.3	6.5	4.6	5.6	100.0	108
Maputo Cidade	73.6	16.1	5.7	4.6	100.0	87
Wealth quintile						
Lowest	83.6	7.4	0.9	8.0	100.0	323
Second	84.6	8.5	1.0	5.9	100.0	305
Middle	86.9	7.0	1.0	5.1	100.0	313
Fourth	85.6	6.8	2.2	5.4	100.0	369
Highest	76.6	12.1	5.2	6.1	100.0	346
Total	83.4	8.4	2.1	6.1	100.0	1,656

[1] Includes all Dried Blood Spot (DBS) specimens tested at the lab and for which there is a final result, i.e., positive, negative, indeterminate or inconclusive
[2] Includes: 1) other results of blood collection (e.g., technical problem in the field), 2) lost specimens, 3) non-corresponding bar codes, 4) lab results such as blood not tested for technical reason or not enough blood to complete the algorithm, and 5) eligible children not being tested due to a discrepancy in data related to the age of the child

Table 4.7 Prevalence of HIV among children

Among children age 6-23 months who were tested, percentage HIV positive, according to sex and age, Mozambique IMASIDA 2015

Background characteristic	Percentage HIV positive	Number
Sex		
Female	2.3	759
Male	1.7	737
Age in months		
6-11	2.3	463
12-17	2.6	543
18-23	1.1	490
Total	2.0	1,496

Table 4.8 HIV prevalence among children by orphanhood and serological status of the mother

Among children age 6-23 months who were tested, percentage HIV positive, according to orphanhood status and HIV serostatus of the mother, Mozambique IMASIDA 2015

Background characteristic	Percentage HIV positive	Number of children
Orphanhood		
Mother or father dead	(11.0)	48
Mother and father alive	1.7	1,444
Missing	*	4
HIV serostatus of the mother[1]		
Mother HIV positive	13.1	150
Mother HIV negative[2]	0.8	1,251
Mother dead	*	5
Missing[3]	0.4	90
Total	2.0	1,496

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

[1] Based on the IMASIDA HIV test

[2] Includes women with negative, indeterminate and inconclusive results on the IMASIDA HIV test

[3] Includes children whose mothers were not tested for HIV because the mother does not live in the household, was absent at the time of blood collection, or refused the IMASIDA HIV test

Table 4.9 Coverage of HIV testing services in children

Among children born in the 2 years preceding the survey, percentage who have ever been tested for HIV and received the result, according to background characteristics, Mozambique IMASIDA 2015

Background characteristic	Percentage ever tested for HIV and received the test result	Number of children
Survival status of the child		
Living	10.9	2,241
Dead	7.1	87
HIV status of the child[1]		
HIV positive	(27.5)	31
HIV negative[2]	12.0	1,413
Unknown[3]	8.3	884
HIV status of the mother[1]		
HIV positive	28.9	251
HIV negative[2]	7.9	1,893
Unknown[4]	15.9	183
HIV exposure status of the child[5]		
HIV-exposed	56.0	103
HIV-unexposed	12.1	1,461
Unknown	2.3	763
Sex		
Female	10.5	1,169
Male	11.1	1,159
Current age of child		
0-5 months	6.4	558
6-11 months	10.0	596
12-17 months	12.6	638
18-23 months	14.1	536
Residence		
Urban	19.6	604
Rural	7.7	1,723
Province		
Niassa	5.3	142
Cabo delgado	6.6	224
Nampula	4.0	506
Zambézia	10.1	331
Tete	6.8	217
Manica	8.9	194
Sofala	7.7	239
Inhambane	31.9	125
Gaza	25.3	182
Maputo Provincia	24.9	87
Maputo Cidade	21.8	81
Mother's education		
No education	7.0	646
Primary	10.3	1,294
Secondary/Higher	18.6	388
Wealth quintile		
Lowest	5.2	548
Second	3.1	535
Middle	11.1	471
Fourth	19.2	436
Highest	20.9	336
Total	10.8	2,327

Note: Table excludes the children of dead mothers and children whose mothers are alive but were not interviewed. Figures in parentheses are based on 25-49 unweighted cases.

[1] Based on the IMASIDA HIV test

[2] Includes those with negative, indeterminate, and inconclusive results on the IMASIDA HIV test

[3] Includes deceased children, children age 0-6 months (who were ineligible for HIV testing in the survey), and children who were eligible for the survey blood test but did not participate due to absence or refusal

[4] Includes children whose mothers were not tested for HIV due to absence or refusal

[5] HIV-exposed children are those whose mothers were HIV-positive prior to the birth of the child. HIV-exposure status is determined by information reported by the mother on her HIV status during the pregnancy of the index child, and is subject to reporting bias. Children whose mothers seroconverted during breastfeeding are not captured as HIV-exposed because this information is unknown.

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ESTIMATES OF SAMPLING ERRORS

Appendix A

The estimates from a sample survey are affected by two types of errors: nonsampling errors and sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the IMASIDA 2015 to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the IMASIDA 2015 is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability among all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

Sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95% of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the IMASIDA 2015 sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulas. Sampling errors are computed by SAS programs developed by ICF. These programs use the Taylor linearization method to estimate variances for survey estimates that are means, proportions, or ratios. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

LINEARIZATION METHOD

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$SE^2(r) = var(r) = \frac{1-f}{x^2}\sum_{h=1}^{H}\left[\frac{m_h}{m_h-1}\left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h}\right)\right]$$

in which

$$z_{hi} = y_{hi} - rx_{hi}\text{, and } z_h = y_h - rx_h$$

where h represents the stratum which varies from 1 to H,
m_h is the total number of clusters selected in the h^{th} stratum,
y_{hi} is the sum of the weighted values of variable y in the i^{th} cluster in the h^{th} stratum,
x_{hi} is the sum of the weighted number of cases in the i^{th} cluster in the h^{th} stratum, and
f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulas. Each replication considers *all but one* cluster in the calculation of the estimates. Pseudo-independent replications are thus created. In the IMASIDA 2015 there were 625 non-empty clusters. Hence, 625 replications were created. The variance of a rate r is calculated as follows:

$$SE^2(r) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)}$$

where r is the estimate computed from the full sample of 625 clusters,
$r_{(i)}$ is the estimate computed from the reduced sample of 624 clusters (i^{th} cluster excluded), and
k is the total number of clusters.

In addition to the standard error, the design effect (DEFT) for each estimate is also calculated. The design effect is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. Relative standard errors and confidence limits for the estimates are also calculated.

Sampling errors for the IMASIDA 2015 are calculated for selected variables considered to be of primary interest. The results are presented in this appendix for the country as a whole, for three zones, and for 11 provinces. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table A.1. Tables A.2 through A.16 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95% confidence limits (R±2SE), for each variable. The DEFT is considered undefined when the standard error considering a simple random sample is zero (when the estimate is close to 0 or 1).

The confidence interval (e.g., as calculated for *children ever born to women age 40-49*) can be interpreted as follows: the overall average number of children ever born to women age 40-49 from the national sample is 5.973 and its standard error is 0.093. Therefore, to obtain the 95% confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e., 5.973±2×0.093. There is a high probability (95%) that the *true* average number of children ever born to all women age 40 to 49 is between 5.786 and 6.160.

For the total sample, the value of the DEFT, averaged over all variables, is 1.745. This means that, due to multi-stage clustering of the sample, the average standard error is increased by a factor of 1.745 over that in an equivalent simple random sample.

Table A.1 List of variables selected for sampling errors, Mozambique IMASIDA 2015

Variable	Estimate	Base population
		WOMEN
HIV prevalence (Women 15-49)	Proportion	All interviewed women with a dried blood sample (DBS) tested in the lab
HIV prevalence (Women 15-59)	Proportion	All interviewed women with a dried blood sample (DBS) tested in the lab
HIV treatment cascade (Women 15-49)		
Aware of positive HIV status	Proportion	HIV positive women, with complete viral load and ARV data
On ART	Proportion	HIV positive women, with complete viral load and ARV data
Virally suppressed and on ART	Proportion	HIV positive women, with complete viral load and ARV data
Virally suppressed, with or without ART	Proportion	HIV positive women, with complete viral load and ARV data
90-90-90 indicators (Women 15-49)		
Aware of positive HIV status	Proportion	HIV positive women, with complete viral load and ARV data
On ART	Proportion	HIV positive women who self-report they are positive or had ARVs detected, with complete viral load and ARV data
Viral suppression	Proportion	HIV positive women who self-report they are on ART or had ARVs detected, with complete viral load and ARV data
HIV treatment cascade (Women 15-59)		
Aware of positive HIV status	Proportion	HIV positive women, with complete viral load and ARV data
On ART treatment	Proportion	HIV positive women, with complete viral load and ARV data
Virally suppressed and on ART	Proportion	HIV positive women, with complete viral load and ARV data
Virally suppressed, with or without ART	Proportion	HIV positive women, with complete viral load and ARV data
90-90-90 indicators (Women 15-59)		
Aware of positive HIV status	Proportion	HIV positive women, with complete viral load and ARV data
On ART	Proportion	HIV positive women who self-report they are positive or had ARVs detected, with complete viral load and ARV data
Viral suppression	Proportion	HIV positive women who self-report they are on ART or had ARVs detected, with complete viral load and ARV data
		CHILDREN
HIV prevalence, children age 6-23 months	Proportion	Children with a dried blood sample (DBS) tested in the lab
		MEN
HIV prevalence (Men 15-49)	Proportion	All interviewed men with a dried blood sample (DBS) tested in the lab
HIV prevalence (Men 15-59)	Proportion	All interviewed men with a dried blood sample (DBS) tested in the lab
HIV treatment cascade (Men 15-49)		
Aware of positive HIV status	Proportion	HIV positive men, with complete viral load and ARV data
On ART	Proportion	HIV positive men, with complete viral load and ARV data
Virally suppressed and on ART	Proportion	HIV positive men, with complete viral load and ARV data
Virally suppressed, with or without ART	Proportion	HIV positive men, with complete viral load and ARV data
90-90-90 indicators (Men 15-49)		
Aware of positive HIV status	Proportion	HIV positive men, with complete viral load and ARV data
On ART	Proportion	HIV positive men who self-report they are positive or had ARVs detected, with complete viral load and ARV data
Viral suppression	Proportion	HIV positive men who self-report they are on ART or had ARVs detected, with complete viral load and ARV data
HIV treatment cascade (Men 15-59)		
Aware of positive HIV status	Proportion	HIV positive men, with complete viral load and ARV data
On ART treatment	Proportion	HIV positive men, with complete viral load and ARV data
Virally suppressed and on ART	Proportion	HIV positive men, with complete viral load and ARV data
Virally suppressed, with or without ART	Proportion	HIV positive men, with complete viral load and ARV data
90-90-90 indicators (Men 15-59)		
Aware of positive HIV status	Proportion	HIV positive men, with complete viral load and ARV data
On ART	Proportion	HIV positive men who self-report they are positive or had ARVs detected, with complete viral load and ARV data
Viral suppression	Proportion	HIV positive men who self-report they are on ART or had ARVs detected, with complete viral load and ARV data
		WOMEN and MEN
HIV prevalence (Women and men 15-49)	Proportion	All interviewed respondents with a dried blood sample (DBS) tested in the lab
HIV prevalence (Women and men 15-59)	Proportion	All interviewed respondents with a dried blood sample (DBS) tested in the lab
HIV treatment cascade (Women and men 15-49)		
Aware of positive HIV status	Proportion	HIV positive respondents, with complete viral load and ARV data
On ART	Proportion	HIV positive respondents, with complete viral load and ARV data
Virally suppressed and on ART	Proportion	HIV positive respondents, with complete viral load and ARV data
Virally suppressed, with or without ART	Proportion	HIV positive respondents, with complete viral load and ARV data
90-90-90 indicators (Women and men 15-49)		
Aware of positive HIV status	Proportion	HIV positive respondents, with complete viral load and ARV data
On ART	Proportion	HIV positive respondents who self-report they are positive or had ARVs detected, with complete viral load and ARV data
Viral suppression	Proportion	HIV positive respondents who self-report they are on ART or had ARVs detected, with complete viral load and ARV data
HIV treatment cascade (Women and men 15-59)		
Aware of positive HIV status	Proportion	HIV positive respondents, with complete viral load and ARV data
On ART treatment	Proportion	HIV positive respondents, with complete viral load and ARV data
Virally suppressed and on ART	Proportion	HIV positive respondents, with complete viral load and ARV data
Virally suppressed, with or without ART	Proportion	HIV positive respondents, with complete viral load and ARV data
90-90-90 indicators (Women and men 15-59)		
Aware of positive HIV status	Proportion	HIV positive respondents, with complete viral load and ARV data
On ART	Proportion	HIV positive respondents who self-report they are positive or had ARVs detected, with complete viral load and ARV data
Viral suppression	Proportion	HIV positive respondents who self-report they are on ART or had ARVs detected, with complete viral load and ARV data

Table A.2 Sampling errors: National sample, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.154	0.007	6122	5809	1.547	0.046	0.140	0.168
HIV prevalence (Women 15-59)	0.151	0.007	6834	6519	1.579	0.045	0.137	0.165
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.462	0.020	995	824	1.259	0.043	0.422	0.502
On ART	0.400	0.019	995	824	1.206	0.047	0.363	0.438
Virally suppressed and on ART	0.282	0.019	995	824	1.322	0.067	0.244	0.319
Virally suppressed, with or without ART	0.369	0.021	995	824	1.354	0.056	0.327	0.41
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.462	0.020	995	824	1.259	0.043	0.422	0.502
On ART	0.867	0.018	486	381	1.163	0.021	0.831	0.903
Viral suppression	0.704	0.026	424	330	1.151	0.036	0.653	0.755
HIV treatment cascade (Women 15-59)								
Aware of positive HIV status	0.468	0.020	1088	908	1.302	0.042	0.429	0.508
On ART treatment	0.410	0.019	1088	908	1.245	0.045	0.373	0.447
Virally suppressed and on ART	0.290	0.018	1088	908	1.310	0.062	0.254	0.326
Virally suppressed, with or without ART	0.376	0.019	1088	908	1.324	0.052	0.337	0.415
90-90-90 indicators (Women 15-59)								
Aware of positive HIV status	0.468	0.020	1088	908	1.302	0.042	0.429	0.508
On ART	0.875	0.016	542	425	1.145	0.019	0.842	0.908
Viral suppression	0.708	0.023	477	372	1.094	0.032	0.662	0.753
CHILDREN								
HIV prevalence, children age 6-23 months	0.02	0.004	1381	1496	1.129	0.212	0.012	0.029
MEN								
HIV prevalence (Men 15-49)	0.101	0.006	3960	4236	1.327	0.063	0.088	0.113
HIV prevalence (Men 15-59)	0.102	0.006	4436	4751	1.376	0.061	0.090	0.115
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.281	0.024	389	395	1.060	0.086	0.232	0.329
On ART	0.230	0.023	389	395	1.063	0.099	0.184	0.275
Virally suppressed and on ART	0.134	0.020	389	395	1.129	0.146	0.095	0.174
Virally suppressed, with or without ART	0.224	0.024	389	395	1.146	0.108	0.175	0.272
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.281	0.024	389	395	1.060	0.086	0.232	0.329
On ART	0.818	0.034	120	111	0.947	0.041	0.751	0.885
Viral suppression	0.585	0.063	100	91	1.274	0.108	0.459	0.712
HIV treatment cascade (Men 15-59)								
Aware of positive HIV status	0.308	0.024	444	448	1.074	0.076	0.261	0.355
On ART treatment	0.254	0.022	444	448	1.051	0.086	0.210	0.297
Virally suppressed and on ART	0.155	0.019	444	448	1.102	0.122	0.118	0.193
Virally suppressed, with or without ART	0.243	0.023	444	448	1.133	0.095	0.197	0.290
90-90-90 indicators (Men 15-59)								
Aware of positive HIV status	0.308	0.024	444	448	1.074	0.076	0.261	0.355
On ART	0.823	0.030	151	138	0.977	0.037	0.762	0.884
Viral suppression	0.613	0.056	126	114	1.290	0.092	0.500	0.726
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.132	0.006	10082	10045	1.798	0.046	0.119	0.144
HIV prevalence (Women and men 15-59)	0.130	0.006	11270	11270	1.877	0.046	0.118	0.142
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.403	0.017	1384	1220	1.258	0.041	0.370	0.436
On ART	0.345	0.016	1384	1220	1.219	0.045	0.314	0.376
Virally suppressed and on ART	0.234	0.015	1384	1220	1.297	0.063	0.204	0.263
Virally suppressed, with or without ART	0.322	0.018	1384	1220	1.393	0.054	0.287	0.357
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.403	0.017	1384	1220	1.258	0.041	0.370	0.436
On ART	0.856	0.017	606	492	1.174	0.020	0.822	0.889
Viral suppression	0.678	0.025	524	421	1.231	0.037	0.628	0.728
HIV treatment cascade (Women and men 15-59)								
Aware of positive HIV status	0.415	0.017	1532	1355	1.325	0.04	0.382	0.449
On ART treatment	0.358	0.016	1532	1355	1.282	0.044	0.327	0.390
Virally suppressed and on ART	0.246	0.014	1532	1355	1.247	0.056	0.218	0.273
Virally suppressed, with or without ART	0.332	0.016	1532	1355	1.323	0.048	0.300	0.364
90-90-90 indicators (Women and men 15-59)								
Aware of positive HIV status	0.415	0.017	1532	1355	1.325	0.040	0.382	0.449
On ART	0.862	0.016	693	563	1.232	0.019	0.830	0.895
Viral suppression	0.686	0.022	603	486	1.145	0.032	0.642	0.729

Table A.3 Sampling errors: North, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.087	0.011	1596	2054	1.590	0.129	0.064	0.109
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.246	0.041	137	153	1.098	0.165	0.165	0.327
On ART	0.232	0.040	137	153	1.096	0.171	0.152	0.311
Virally suppressed and on ART	0.151	0.034	137	153	1.099	0.224	0.083	0.219
Virally suppressed, with or without ART	0.243	0.046	137	153	1.238	0.188	0.152	0.334
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.246	0.041	137	153	1.098	0.165	0.165	0.327
On ART	0.942	0.011	42	38	0.314	0.012	0.919	0.964
Viral suppression	0.652	0.083	40	35	1.088	0.128	0.485	0.818
MEN								
HIV prevalence (Men 15-49)	0.076	0.010	1212	1633	1.367	0.137	0.055	0.096
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.118	0.035	83	112	0.979	0.296	0.048	0.188
On ART	0.099	0.033	83	112	1.000	0.332	0.033	0.166
Virally suppressed and on ART	0.069	0.032	83	112	1.156	0.47	0.004	0.134
Virally suppressed, with or without ART	0.177	0.046	83	112	1.088	0.259	0.085	0.269
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.118	0.035	83	112	0.979	0.296	0.048	0.188
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.082	0.010	2808	3687	1.893	0.120	0.062	0.101
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.192	0.030	220	265	1.137	0.158	0.131	0.252
On ART	0.176	0.029	220	265	1.118	0.164	0.118	0.233
Virally suppressed and on ART	0.116	0.023	220	265	1.080	0.201	0.069	0.163
Virally suppressed, with or without ART	0.215	0.032	220	265	1.169	0.151	0.15	0.280
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.192	0.030	220	265	1.137	0.158	0.131	0.252
On ART	0.916	0.021	55	51	0.558	0.023	0.874	0.958
Viral suppression	0.662	0.069	51	47	1.034	0.105	0.523	0.800

Table A.4 Sampling errors: Central, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.149	0.012	2194	2099	1.581	0.081	0.125	0.174
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.428	0.034	332	298	1.238	0.079	0.360	0.495
On ART	0.369	0.030	332	298	1.137	0.082	0.308	0.429
Virally suppressed and on ART	0.249	0.030	332	298	1.265	0.121	0.188	0.309
Virally suppressed, with or without ART	0.330	0.034	332	298	1.295	0.102	0.263	0.397
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.428	0.034	332	298	1.238	0.079	0.360	0.495
On ART	0.861	0.029	147	128	1.011	0.034	0.803	0.919
Viral suppression	0.675	0.048	127	110	1.140	0.071	0.580	0.770
MEN								
HIV prevalence (Men 15-49)	0.103	0.010	1393	1455	1.244	0.098	0.083	0.124
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.349	0.047	140	141	1.162	0.135	0.255	0.443
On ART	0.261	0.042	140	141	1.138	0.163	0.176	0.345
Virally suppressed and on ART	0.153	0.034	140	141	1.118	0.223	0.085	0.222
Virally suppressed, with or without ART	0.244	0.040	140	141	1.109	0.166	0.163	0.325
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.349	0.047	140	141	1.162	0.135	0.255	0.443
On ART	0.747	0.050	47	49	0.780	0.067	0.648	0.847
Viral suppression	0.588	0.112	36	37	1.336	0.191	0.363	0.813
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.131	0.010	3587	3555	1.846	0.080	0.110	0.151
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.402	0.027	472	439	1.211	0.068	0.348	0.457
On ART	0.334	0.025	472	439	1.154	0.075	0.284	0.384
Virally suppressed and on ART	0.218	0.024	472	439	1.250	0.109	0.170	0.266
Virally suppressed, with or without ART	0.302	0.029	472	439	1.365	0.096	0.245	0.360
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.402	0.027	472	439	1.211	0.068	0.348	0.457
On ART	0.830	0.029	194	177	1.072	0.035	0.772	0.888
Viral suppression	0.653	0.047	163	147	1.255	0.072	0.559	0.747

Table A.5 Sampling errors: South, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.244	0.012	2332	1656	1.394	0.051	0.219	0.269
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.577	0.026	526	373	1.218	0.046	0.525	0.630
On ART	0.495	0.027	526	373	1.235	0.055	0.441	0.549
Virally suppressed and on ART	0.362	0.029	526	373	1.360	0.079	0.304	0.419
Virally suppressed, with or without ART	0.451	0.029	526	373	1.354	0.065	0.393	0.510
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.577	0.026	526	373	1.218	0.046	0.525	0.630
On ART	0.857	0.026	297	215	1.297	0.031	0.804	0.910
Viral suppression	0.731	0.032	257	184	1.139	0.043	0.668	0.794
MEN								
HIV prevalence (Men 15-49)	0.133	0.013	1355	1148	1.362	0.094	0.108	0.158
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.343	0.037	166	142	1.002	0.108	0.269	0.417
On ART	0.302	0.038	166	142	1.062	0.126	0.226	0.378
Virally suppressed and on ART	0.168	0.035	166	142	1.186	0.206	0.099	0.237
Virally suppressed, with or without ART	0.241	0.041	166	142	1.234	0.171	0.159	0.324
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.343	0.037	166	142	1.002	0.108	0.269	0.417
On ART	0.882	0.045	60	49	1.069	0.051	0.792	0.972
Viral suppression	0.555	0.081	53	43	1.172	0.146	0.392	0.717
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.198	0.010	3687	2804	1.584	0.052	0.178	0.219
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.513	0.023	692	515	1.234	0.046	0.466	0.560
On ART	0.442	0.023	692	515	1.239	0.053	0.395	0.488
Virally suppressed and on ART	0.308	0.024	692	515	1.346	0.077	0.261	0.355
Virally suppressed, with or without ART	0.394	0.027	692	515	1.437	0.068	0.340	0.447
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.513	0.023	692	515	1.234	0.046	0.466	0.560
On ART	0.861	0.024	357	264	1.298	0.028	0.814	0.909
Viral suppression	0.698	0.032	310	227	1.219	0.046	0.634	0.761

Table A.6 Sampling errors: Niassa, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.103	0.019	502	304	1.368	0.181	0.066	0.140
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.377	0.078	53	28	1.151	0.206	0.222	0.532
On ART	0.364	0.075	53	28	1.114	0.205	0.215	0.513
Virally suppressed and on ART	0.219	0.065	53	28	1.130	0.297	0.089	0.348
Virally suppressed, with or without ART	0.360	0.105	53	28	1.554	0.291	0.150	0.570
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.377	0.078	53	28	1.151	0.206	0.222	0.532
MEN								
HIV prevalence (Men 15-49)	0.045	0.012	324	236	1.041	0.266	0.021	0.069
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.078	0.014	826	539	1.477	0.177	0.050	0.105
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.351	0.071	72	39	1.250	0.203	0.209	0.493
On ART	0.341	0.069	72	39	1.230	0.204	0.202	0.480
Virally suppressed and on ART	0.194	0.055	72	39	1.173	0.284	0.084	0.305
Virally suppressed, with or without ART	0.297	0.081	72	39	1.478	0.272	0.135	0.459
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.351	0.071	72	39	1.250	0.203	0.209	0.493
On ART	0.973	0.026	28	14	0.834	0.027	0.921	1.025
Viral suppression	0.569	0.102	27	13	1.051	0.180	0.365	0.774

Table A.7 Sampling errors: Cabo Delgado, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.157	0.036	421	537	2.043	0.232	0.085	0.230
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.259	0.056	54	74	0.933	0.217	0.147	0.371
On ART	0.259	0.056	54	74	0.933	0.217	0.147	0.371
Virally suppressed and on ART	0.147	0.045	54	74	0.935	0.309	0.056	0.238
Virally suppressed, with or without ART	0.243	0.060	54	74	1.013	0.246	0.123	0.362
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.259	0.056	54	74	0.933	0.217	0.147	0.371
MEN								
HIV prevalence (Men 15-49)	0.114	0.028	357	448	1.685	0.250	0.057	0.171
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.152	0.061	36	47	1.011	0.405	0.029	0.274
On ART	0.136	0.059	36	47	1.021	0.435	0.018	0.255
Virally suppressed and on ART	0.097	0.064	36	47	1.260	0.655	0.000	0.224
Virally suppressed, with or without ART	0.251	0.077	36	47	1.046	0.306	0.098	0.405
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.152	0.061	36	47	1.011	0.405	0.029	0.274
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.138	0.031	778	985	2.508	0.226	0.075	0.200
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.217	0.042	90	121	0.951	0.191	0.134	0.300
On ART	0.211	0.042	90	121	0.981	0.201	0.126	0.296
Virally suppressed and on ART	0.128	0.033	90	121	0.944	0.261	0.061	0.195
Virally suppressed, with or without ART	0.246	0.045	90	121	0.985	0.183	0.156	0.336
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.217	0.042	90	121	0.951	0.191	0.134	0.300

Table A.8 Sampling errors: Nampula, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.051	0.009	673	1213	1.047	0.174	0.033	0.069
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.156	0.078	30	51	1.150	0.501	0.000	0.311
On ART	0.120	0.070	30	51	1.153	0.584	0.000	0.259
Virally suppressed and on ART	0.120	0.070	30	51	1.153	0.584	0.000	0.259
Virally suppressed, with or without ART	0.178	0.092	30	51	1.274	0.514	0.000	0.361
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.156	0.078	30	51	1.150	0.501	0.000	0.311
MEN								
HIV prevalence (Men 15-49)	0.065	0.012	531	949	1.105	0.182	0.041	0.089
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.058	0.039	28	55	0.865	0.671	0.000	0.135
On ART	0.033	0.033	28	55	0.960	0.997	0.000	0.099
Virally suppressed and on ART	0.033	0.033	28	55	0.960	0.997	0.000	0.099
Virally suppressed, with or without ART	0.123	0.060	28	55	0.947	0.486	0.004	0.243
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.058	0.039	28	55	0.865	0.671	0.000	0.135
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.057	0.009	1204	2162	1.298	0.152	0.040	0.075
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.105	0.049	58	106	1.199	0.466	0.007	0.202
On ART	0.075	0.038	58	106	1.095	0.512	0.000	0.151
Virally suppressed and on ART	0.075	0.038	58	106	1.095	0.512	0.000	0.151
Virally suppressed, with or without ART	0.150	0.049	58	106	1.045	0.330	0.051	0.248
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.105	0.049	58	106	1.199	0.466	0.007	0.202

Table A.9 Sampling errors: Zambézia, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.168	0.026	536	680	1.599	0.154	0.117	0.220
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.374	0.068	83	108	1.275	0.183	0.237	0.511
On ART	0.326	0.061	83	108	1.167	0.186	0.205	0.447
Virally suppressed and on ART	0.177	0.060	83	108	1.415	0.339	0.057	0.297
Virally suppressed, with or without ART	0.273	0.073	83	108	1.471	0.267	0.127	0.418
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.374	0.068	83	108	1.275	0.183	0.237	0.511
On ART	0.871	0.051	32	40	0.858	0.059	0.768	0.974
Viral suppression	0.542	0.110	27	35	1.117	0.202	0.322	0.761
MEN								
HIV prevalence (Men 15-49)	0.125	0.022	362	459	1.247	0.174	0.082	0.169
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.246	0.085	41	52	1.235	0.344	0.077	0.416
On ART	0.246	0.085	41	52	1.235	0.344	0.077	0.416
Virally suppressed and on ART	0.091	0.050	41	52	1.099	0.551	0.000	0.191
Virally suppressed, with or without ART	0.147	0.060	41	52	1.073	0.410	0.026	0.267
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.246	0.085	41	52	1.235	0.344	0.077	0.416
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.151	0.023	898	1138	1.913	0.152	0.105	0.197
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.332	0.056	124	160	1.316	0.169	0.220	0.444
On ART	0.300	0.051	124	160	1.238	0.171	0.197	0.402
Virally suppressed and on ART	0.148	0.045	124	160	1.405	0.305	0.058	0.239
Virally suppressed, with or without ART	0.231	0.057	124	160	1.479	0.244	0.118	0.344
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.332	0.056	124	160	1.316	0.169	0.220	0.444
On ART	0.902	0.039	41	53	0.833	0.043	0.824	0.980
Viral suppression	0.495	0.097	36	48	1.143	0.196	0.301	0.689

Table A.10 Sampling errors: Tete, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.064	0.009	512	431	0.851	0.143	0.046	0.083
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.348	0.075	45	27	1.039	0.215	0.199	0.497
On ART	0.348	0.075	45	27	1.039	0.215	0.199	0.497
Virally suppressed and on ART	0.221	0.079	45	27	1.252	0.357	0.063	0.378
Virally suppressed, with or without ART	0.262	0.075	45	27	1.122	0.285	0.113	0.411
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.348	0.075	45	27	1.039	0.215	0.199	0.497
MEN								
HIV prevalence (Men 15-49)	0.033	0.011	316	293	1.061	0.325	0.012	0.054
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.052	0.009	828	724	1.199	0.179	0.033	0.070
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.410	0.092	63	36	1.454	0.223	0.227	0.594
On ART	0.317	0.053	63	36	0.899	0.167	0.211	0.423
Virally suppressed and on ART	0.190	0.050	63	36	0.994	0.260	0.091	0.290
Virally suppressed, with or without ART	0.221	0.045	63	36	0.847	0.202	0.132	0.310
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.410	0.092	63	36	1.454	0.223	0.227	0.594
On ART	0.773	0.135	27	15	1.598	0.175	0.502	1.044
Viral suppression	0.600	0.137	25	12	1.351	0.229	0.325	0.875

Table A.11 Sampling errors: Manica, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.156	0.019	556	445	1.245	0.123	0.118	0.194
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.459	0.036	87	66	0.678	0.079	0.386	0.531
On ART	0.384	0.038	87	66	0.732	0.100	0.308	0.461
Virally suppressed and on ART	0.287	0.040	87	66	0.819	0.139	0.207	0.367
Virally suppressed, with or without ART	0.384	0.036	87	66	0.696	0.095	0.311	0.456
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.459	0.036	87	66	0.678	0.079	0.386	0.531
On ART	0.838	0.054	41	30	0.936	0.065	0.729	0.947
Viral suppression	0.747	0.081	35	26	1.086	0.109	0.584	0.909
MEN								
HIV prevalence (Men 15-49)	0.103	0.022	361	302	1.388	0.216	0.058	0.147
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.285	0.088	36	30	1.148	0.309	0.109	0.461
On ART	0.198	0.064	36	30	0.950	0.323	0.070	0.325
Virally suppressed and on ART	0.134	0.070	36	30	1.202	0.520	0.000	0.273
Virally suppressed, with or without ART	0.292	0.081	36	30	1.049	0.276	0.131	0.453
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.285	0.088	36	30	1.148	0.309	0.109	0.461
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.135	0.018	917	748	1.616	0.136	0.098	0.171
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.404	0.033	123	97	0.741	0.081	0.339	0.470
On ART	0.326	0.031	123	97	0.727	0.094	0.264	0.388
Virally suppressed and on ART	0.239	0.023	123	97	0.604	0.097	0.193	0.286
Virally suppressed, with or without ART	0.355	0.030	123	97	0.705	0.086	0.294	0.416
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.404	0.033	123	97	0.741	0.081	0.339	0.470
On ART	0.806	0.042	51	39	0.749	0.052	0.723	0.890
Viral suppression	0.734	0.063	42	31	0.907	0.085	0.609	0.859

Table A.12 Sampling errors: Sofala, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.188	0.029	590	543	1.771	0.152	0.131	0.245
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.488	0.059	117	98	1.264	0.121	0.370	0.605
On ART	0.410	0.053	117	98	1.154	0.129	0.305	0.516
Virally suppressed and on ART	0.310	0.047	117	98	1.096	0.152	0.215	0.404
Virally suppressed, with or without ART	0.375	0.045	117	98	1.005	0.120	0.285	0.466
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.488	0.059	117	98	1.264	0.121	0.370	0.605
On ART	0.841	0.053	55	48	1.055	0.062	0.736	0.946
Viral suppression	0.755	0.067	46	40	1.042	0.089	0.621	0.888
MEN								
HIV prevalence (Men 15-49)	0.130	0.021	354	401	1.199	0.165	0.087	0.173
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.452	0.068	45	49	0.905	0.150	0.317	0.588
On ART	0.321	0.071	45	49	1.009	0.221	0.179	0.463
Virally suppressed and on ART	0.242	0.069	45	49	1.067	0.285	0.104	0.379
Virally suppressed, with or without ART	0.345	0.080	45	49	1.107	0.230	0.186	0.504
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.452	0.068	45	49	0.905	0.150	0.317	0.588
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.163	0.024	944	945	1.956	0.144	0.116	0.211
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.476	0.044	162	147	1.109	0.092	0.389	0.563
On ART	0.380	0.045	162	147	1.184	0.119	0.290	0.471
Virally suppressed and on ART	0.287	0.042	162	147	1.188	0.148	0.202	0.372
Virally suppressed, with or without ART	0.365	0.048	162	147	1.269	0.132	0.269	0.462
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.476	0.044	162	147	1.109	0.092	0.389	0.563
On ART	0.799	0.051	75	70	1.086	0.063	0.698	0.900
Viral suppression	0.754	0.070	60	56	1.241	0.093	0.615	0.894

Table A.13 Sampling errors: Inhambane, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.177	0.026	538	397	1.598	0.149	0.125	0.230
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.528	0.102	82	61	1.806	0.192	0.325	0.731
On ART	0.391	0.077	82	61	1.420	0.198	0.236	0.546
Virally suppressed and on ART	0.260	0.054	82	61	1.111	0.209	0.152	0.369
Virally suppressed, with or without ART	0.336	0.061	82	61	1.151	0.180	0.215	0.457
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.528	0.102	82	61	1.806	0.192	0.325	0.731
On ART	0.741	0.091	41	32	1.298	0.122	0.559	0.922
Viral suppression	0.665	0.063	32	24	0.749	0.095	0.539	0.791
MEN								
HIV prevalence (Men 15-49)	0.076	0.024	288	224	1.546	0.318	0.028	0.125
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.141	0.022	826	621	1.835	0.158	0.096	0.185
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.472	0.096	102	75	1.900	0.202	0.281	0.664
On ART	0.349	0.070	102	75	1.457	0.199	0.210	0.488
Virally suppressed and on ART	0.230	0.048	102	75	1.155	0.211	0.133	0.327
Virally suppressed, with or without ART	0.310	0.056	102	75	1.218	0.181	0.198	0.422
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.472	0.096	102	75	1.900	0.202	0.281	0.664
On ART	0.740	0.081	45	35	1.216	0.109	0.578	0.901
Viral suppression	0.658	0.050	35	26	0.618	0.076	0.559	0.758

Table A.14 Sampling errors: Gaza, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.282	0.023	729	521	1.399	0.083	0.235	0.328
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.628	0.040	192	136	1.146	0.064	0.548	0.708
On ART	0.536	0.046	192	136	1.264	0.085	0.444	0.627
Virally suppressed and on ART	0.360	0.054	192	136	1.539	0.149	0.252	0.467
Virally suppressed, with or without ART	0.428	0.049	192	136	1.379	0.116	0.329	0.527
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.628	0.040	192	136	1.146	0.064	0.548	0.708
On ART	0.853	0.036	121	85	1.113	0.042	0.781	0.925
Viral suppression	0.671	0.060	104	73	1.289	0.089	0.551	0.791
MEN								
HIV prevalence (Men 15-49)	0.176	0.021	347	285	1.005	0.117	0.135	0.217
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.404	0.071	56	47	1.075	0.176	0.262	0.547
On ART	0.340	0.079	56	47	1.237	0.234	0.181	0.499
Virally suppressed and on ART	0.205	0.070	56	47	1.284	0.343	0.065	0.346
Virally suppressed, with or without ART	0.279	0.088	56	47	1.439	0.315	0.103	0.455
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.404	0.071	56	47	1.075	0.176	0.262	0.547
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.244	0.017	1076	807	1.334	0.072	0.209	0.279
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.570	0.040	248	183	1.270	0.070	0.490	0.650
On ART	0.485	0.044	248	183	1.370	0.090	0.398	0.573
Virally suppressed and on ART	0.320	0.051	248	183	1.697	0.158	0.219	0.421
Virally suppressed, with or without ART	0.390	0.052	248	183	1.660	0.133	0.286	0.493
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.570	0.040	248	183	1.270	0.070	0.490	0.650
On ART	0.851	0.035	144	104	1.175	0.041	0.781	0.921
Viral suppression	0.659	0.067	124	89	1.555	0.101	0.525	0.793

Table A.15 Sampling errors: Maputo Província, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.296	0.025	522	336	1.273	0.086	0.245	0.347
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.560	0.051	146	92	1.242	0.092	0.458	0.663
On ART	0.502	0.059	146	92	1.414	0.117	0.384	0.620
Virally suppressed and on ART	0.374	0.063	146	92	1.568	0.169	0.247	0.500
Virally suppressed, with or without ART	0.452	0.069	146	92	1.665	0.153	0.313	0.590
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.560	0.051	146	92	1.242	0.092	0.458	0.663
On ART	0.896	0.043	77	52	1.224	0.048	0.810	0.982
Viral suppression	0.744	0.062	69	46	1.165	0.083	0.621	0.868
MEN								
HIV prevalence (Men 15-49)	0.158	0.029	392	317	1.585	0.185	0.100	0.217
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.383	0.063	59	46	0.980	0.163	0.258	0.508
On ART	0.343	0.060	59	46	0.957	0.174	0.224	0.462
Virally suppressed and on ART	0.145	0.060	59	46	1.292	0.415	0.025	0.265
Virally suppressed, with or without ART	0.194	0.054	59	46	1.032	0.276	0.087	0.301
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.383	0.063	59	46	0.980	0.163	0.258	0.508
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.229	0.023	914	653	1.667	0.101	0.183	0.275
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.501	0.037	205	138	1.055	0.074	0.427	0.575
On ART	0.449	0.041	205	138	1.185	0.092	0.366	0.532
Virally suppressed and on ART	0.297	0.036	205	138	1.129	0.122	0.225	0.370
Virally suppressed, with or without ART	0.366	0.050	205	138	1.474	0.136	0.266	0.465
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.501	0.037	205	138	1.055	0.074	0.427	0.575
On ART	0.896	0.039	101	69	1.284	0.044	0.817	0.975
Viral suppression	0.662	0.044	90	62	0.879	0.066	0.574	0.750

Table A.16 Sampling errors: Maputo Cidade, Mozambique IMASIDA 2015

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
WOMEN								
HIV prevalence (Women 15-49)	0.217	0.021	543	401	1.200	0.098	0.174	0.259
HIV treatment cascade (Women 15-49)								
Aware of positive HIV status	0.551	0.031	106	84	0.635	0.056	0.489	0.612
On ART	0.495	0.032	106	84	0.652	0.064	0.432	0.559
Virally suppressed and on ART	0.425	0.041	106	84	0.847	0.096	0.344	0.507
Virally suppressed, with or without ART	0.574	0.041	106	84	0.852	0.072	0.492	0.656
90-90-90 indicators (Women 15-49)								
Aware of positive HIV status	0.551	0.031	106	84	0.635	0.056	0.489	0.612
On ART	0.899	0.042	58	46	1.051	0.047	0.815	0.983
Viral suppression	0.859	0.049	52	42	1.000	0.057	0.761	0.956
MEN								
HIV prevalence (Men 15-49)	0.110	0.020	328	322	1.150	0.181	0.070	0.150
HIV treatment cascade (Men 15-49)								
Aware of positive HIV status	0.252	0.072	31	35	0.905	0.284	0.109	0.395
On ART	0.252	0.072	31	35	0.905	0.284	0.109	0.395
Virally suppressed and on ART	0.175	0.058	31	35	0.841	0.332	0.059	0.291
Virally suppressed, with or without ART	0.272	0.087	31	35	1.066	0.320	0.098	0.445
90-90-90 indicators (Men 15-49)								
Aware of positive HIV status	0.252	0.072	31	35	0.905	0.284	0.109	0.395
WOMEN and MEN								
HIV prevalence (Women and men 15-49)	0.169	0.018	871	723	1.415	0.106	0.133	0.205
HIV treatment cascade (Women and men 15-49)								
Aware of positive HIV status	0.463	0.027	137	119	0.628	0.058	0.410	0.517
On ART	0.424	0.034	137	119	0.795	0.079	0.357	0.491
Virally suppressed and on ART	0.352	0.040	137	119	0.983	0.114	0.271	0.432
Virally suppressed, with or without ART	0.485	0.048	137	119	1.108	0.098	0.390	0.580
90-90-90 indicators (Women and men 15-49)								
Aware of positive HIV status	0.463	0.027	137	119	0.628	0.058	0.410	0.517
On ART	0.915	0.036	67	55	1.054	0.039	0.843	0.988
Viral suppression	0.830	0.053	61	50	1.095	0.064	0.724	0.936

METHODS FOR MEASURING HIV BIOMARKERS AND 90-90-90 INDICATORS *Appendix* B

B.1 TESTING METHODOLOGY FOR HIV-RELATED BIOMARKERS

B.1.1 HIV Serology

HIV prevalence testing in the 2015 Mozambique IMASIDA was performed to generate national and provincial estimates of HIV prevalence. Youth and adults age 15-59 and children age 6-23 months were eligible for HIV testing.

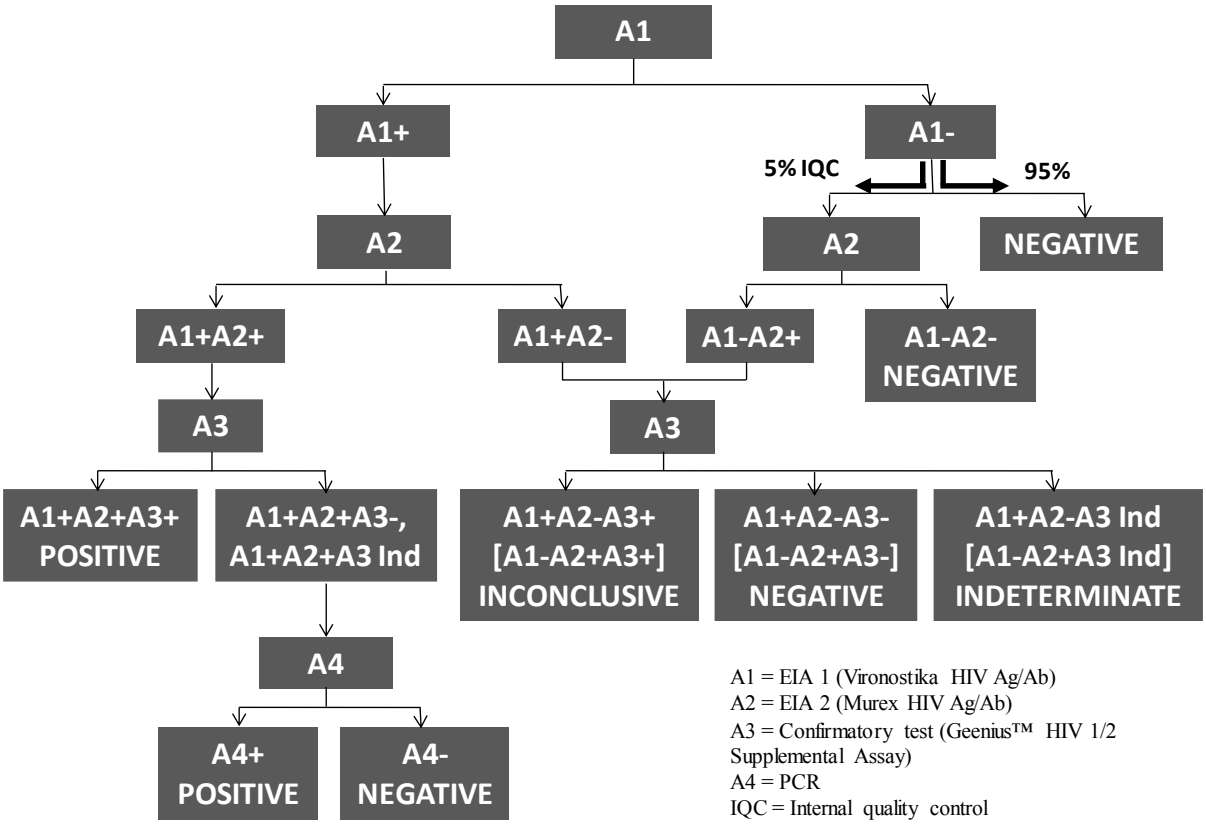
HIV prevalence was determined using two enzyme-linked immunoassays (EIA), a supplemental HIV assay, and polymerase chain reaction (PCR). Two different algorithms were used depending on the age of the participant, one algorithm for youth/adults age 15-59 and children age 18-23 months, and another for children aged 6-17 months. Tests were performed and interpreted according to the manufacturer's instructions, and optimized for use with DBS specimens.

Youth/adults age 15-59 and children age 18-23 months

For all eligible individuals age 15-59 years and children age 18-23 months HIV serology testing was based on an algorithm consisting of up to four assays: two EIAs, a confirmatory test, and PCR (**Figure B.1**). Initially, all of the specimens were screened using Vironostika HIV Ag/Ab (Biomerieux, France). Non-reactive specimens on this test were considered HIV negative. All reactive specimens on this test, and 5% of specimens that were non-reactive on Vironostika, were retested using Murex HIV Ag/Ab Combination (DiaSorin, UK). Specimens that were non-reactive on both assays (Vironostika and Murex) were classified as HIV negative.

Regardless of the result on Murex, all specimens that were reactive on Vironostika were retested with a confirmatory test (Geenius™ HIV 1/2 Confirmatory Rapid Test, Bio-Rad, France). When the first two tests were discordant, results of the third test were used to classify the specimen as follows: specimens that were non-reactive on the third test were considered HIV negative, specimens that were reactive on the third test were considered inconclusive, and specimens that were indeterminate on the third test were considered HIV indeterminate. For the purpose of prevalence estimation, inconclusive and indeterminate specimens were treated as negatives. Specimens that were reactive on all three tests were considered HIV positive. Specimens that were reactive on the first two tests but non-reactive or indeterminate on the third were further tested using PCR (Ampliprep Cobas Taqman HIV-1, Germany). Specimens with a negative PCR result were considered HIV negative for purposes of estimating HIV prevalence. Specimens with a positive PCR result were considered to be HIV positive. Testing occurred at the *Laboratório de Imunologia de INS* (Immunology Laboratory at INS) in Maputo.

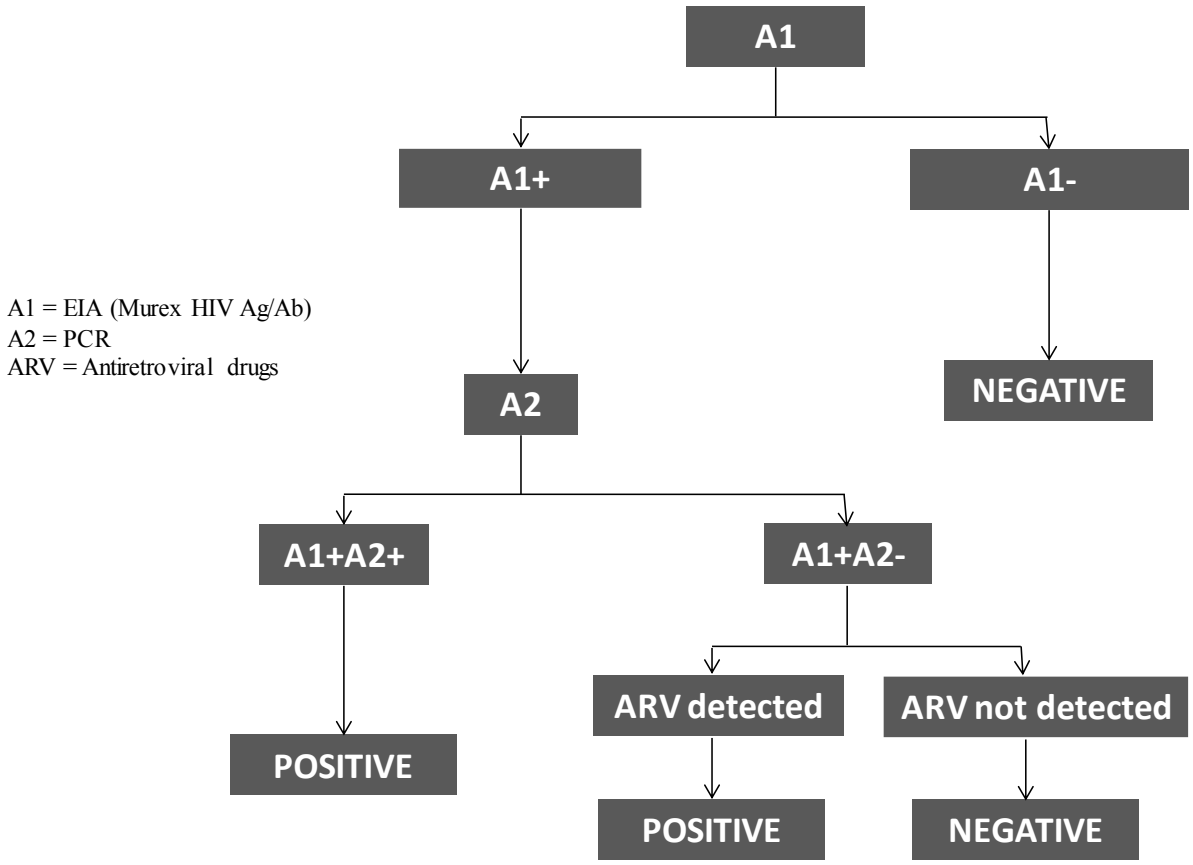
Figure B.1 **HIV testing algorithm for participants age 15-59 years and children age 18-23 months**



Children age 6-17 months

For children age 6-17 months, HIV testing was done following an algorithm including an EIA (Murex HIV Ag/Ab Combination) and a PCR test. Initially, specimens were screened with Murex Ag/Ab Combination. Reactive specimens were retested with HIV PCR. Those that were reactive on the PCR test were considered HIV positive. For those whose PCR results were non-reactive, antiretroviral (ARV) biomarker results were taken into consideration in assigning final HIV status—children who had ARVs detected in their blood were classified as HIV positive, and those who did not have ARVs detected were classified as HIV negative (**Figure B.2**).

Figure B.2 **HIV testing algorithm for children age 6-17 months**



B.1.2 HIV Viral Load

The 2015 IMASIDA measured HIV-1 viral load to obtain a population-based estimate of viral load suppression among adults. Viral load measurement was carried out on the DBS specimens of youth/adults age 15-59 who were classified as HIV positive according to the laboratory HIV serology algorithm. Dried blood spot viral load was measured using Abbott sample preparation system (m2000sp). The tubes were incubated at room temperature for 2 hours with intermittent mixing. HIV RNA was extracted manually from the lysate according to the standard HIV-1 RNA 1.0 ml extraction protocol using Abbott RNA sample preparation system. The viral load was measured from the extracted RNA using m2000 DBS HIV-1 RNA open-mode protocol (Abbott Molecular, Germany).

B.1.3 Antiretroviral Biomarker Testing

Antiretroviral biomarker testing was conducted by The Bioanalytical Service Division (BASD) in Bloemfontein using electrospray ionization mass spectrometry (Sciex, API4000) in May-June 2018. The DBS collected during the IMASIDA fieldwork were used as the biological matrix for the detection of Zidovudine (AZT), Lamivudine (3TC) and Nevirapine (NVP). AZT, 3TC and NVP were selected because they represent the first line ART regime, and at the time of the survey over 90% of HIV patients on treatment or receiving prophylaxis are under this regime.

To accurately mimic the biological matrix and determine the accuracy and precision of the instrument against DBS, calibration standards (STD) and quality control (QC) samples of nominal known concentration were spiked into normal human anticoagulated whole blood and aliquoted onto Whatman Protein Saver™ 903™ cards. STD, QC samples and the survey DBS specimens were bagged and stored at -70°C until analysis. Analytes were isolated from the biological matrix using a liquid-liquid extraction method and analyzed in batches. Each sample (5 µL) was loaded into the column (Agilent, G1316A) using

an autosampler (Agilent, G1377A). Each batch consisted of ten STD levels, over the range of 9.766 – 5,000 ng/ml, with six levels of QC samples extending over this range. QC and study samples were back-calculated as unknowns against the standard to determine concentration. Each STD, QC and study sample was measured in duplicate per batch. Each batch was also run with ten system suitability samples, five at the start and five at the end of the run, to monitor instrument performance. Five parameters were used to accept a run.

Fifteen runs were performed and accepted for the analysis of survey specimens. Respondents were considered to have evidence of ARVs in their blood if at least one of the three drugs was detected. For the tabulations conducted in this report, the laboratory data including the concentrations measured for each analyte were collapsed in a single dichotomous variable with values of ARVs detected and ARVs not detected.

B.1.4 HIV Incidence

In the 2015 IMASIDA, HIV incidence was measured via a recent infection testing algorithm (RITA) including the Maxim HIV-1 Limiting Antigen (LAg) Avidity EIA (Maxim Biotech, Inc., Rockville, MD, USA), viral load, and ARV biomarker results. The HIV-1 LAg Avidity EIA is based on the functional avidity or binding strength of antibodies. Antibody avidity increases with time since HIV infection, and is a robust parameter to distinguish recent from long-term infections. Viral load and ARV blood test results were included in the algorithm to minimize the number of specimens with "false recent" results on the LAg avidity assay. Individuals with "false recent" infections may include those on antiretroviral therapy, long-term nonprogressors, those in the late stages of HIV disease, and those with other health issues or complicating factors.

Specimens with an HIV-1 viral load of <1,000 copies/ml were considered long-term infections without being subjected to the LAg Avidity EIA. All confirmed HIV seropositive specimens with an HIV-1 viral load of ≥1,000 copies/ml were subjected to the LAg Avidity assay. The LAg Avidity EIA provides a measure of antibody avidity as a normalized optical density (ODn). Specimens with an ODn >2.0 during initial testing were classified as long-term infections. Specimens with an ODn ≤2.0 during initial testing were confirmed by further testing of the sample on the LAg Avidity EIA in triplicate, where the median value of the three results was considered the final ODn for the specimen. All specimens with median ODn >1.5 were classified as long-term infections. For specimens with a median LAg ODn ≤1.5, the ARV biomarker results were reviewed. If ARVs were detected, the specimen was classified as long-term. If ARVs were not detected, the specimen was classified as recent (**Figure B.3.1**).

An HIV incidence estimate was included in the 2015 IMASIDA final report published in February 2018, prior to completion of the ARV biomarker testing (MISAU, INE and ICF, 2018). The RITA used for that estimate included viral load and LAg avidity testing only (**Figure B.3.2**). The incidence estimates from the viral load plus LAg algorithm are retained in this report for reference; however, the official incidence estimate is that derived from the algorithm including viral load, LAg, and ARVs.

Figure B.3.1 **HIV incidence testing algorithm – viral load, LAg, and ARV**

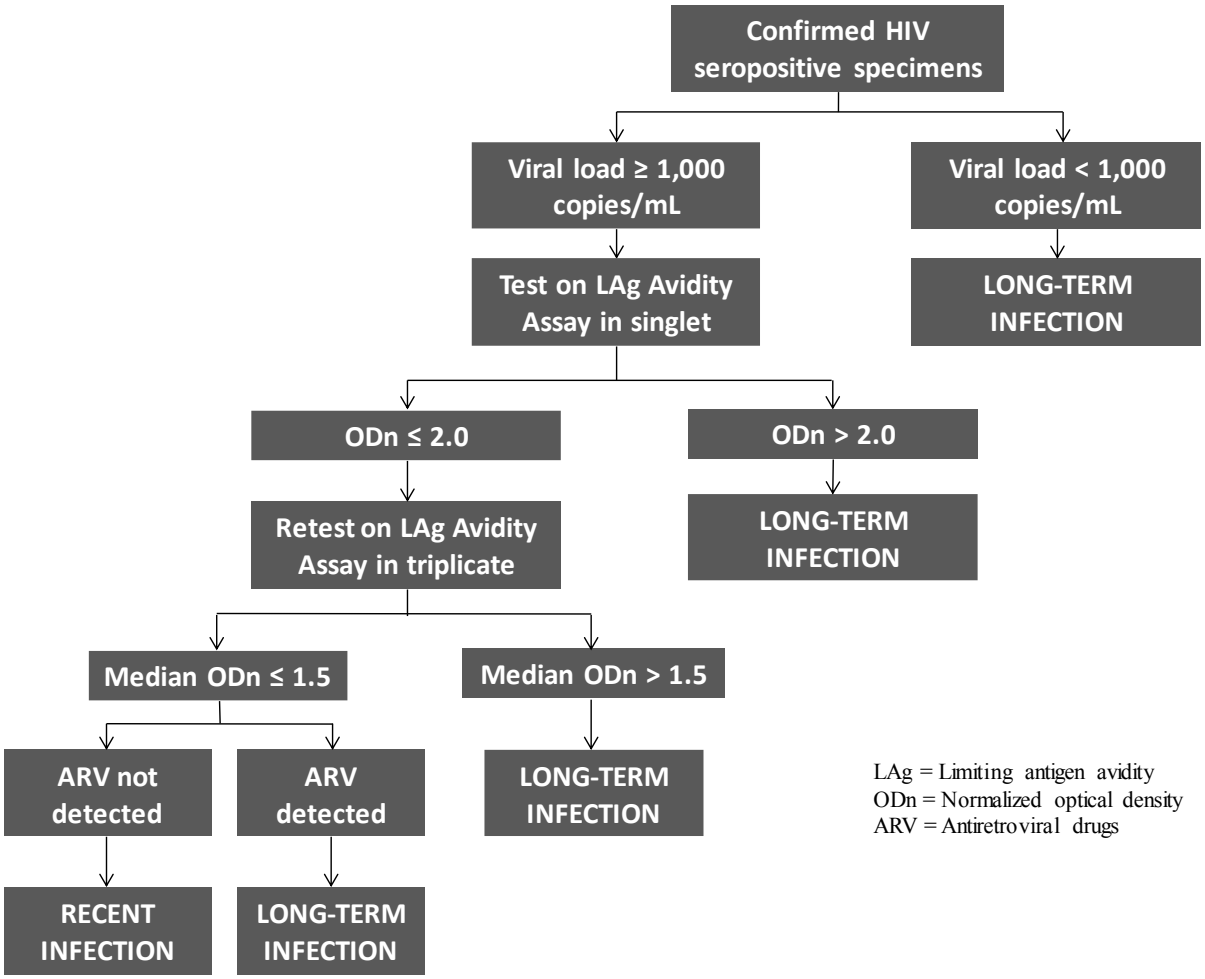
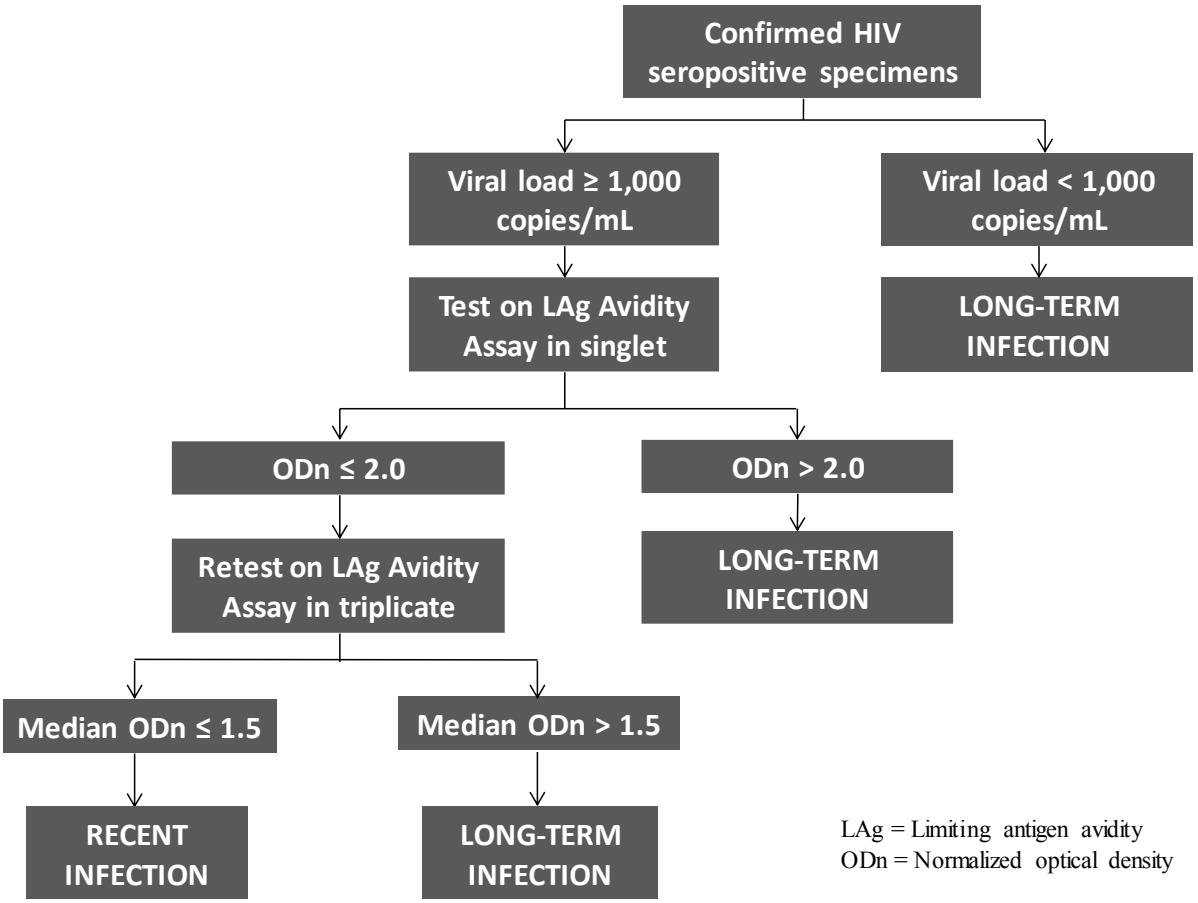


Figure B.3.2 **HIV incidence testing algorithm – viral load and LAg**



The annualized HIV incidence estimate was computed using the "inctools" R package developed by SACEMA (https://github.com/SACEMA/inctools). The proportion false recent (PFR) was assumed to be 0.001%, with a relative standard error (RSE) of 25.5%, 95% CI (0.0005%, 0.0015%). The mean duration of recent infection (MDRI) was assumed to be 130 days, with an RSE of 4.71%, 95% CI (118, 142). The time cutoff (T) was set at 365 days. The bootstrap option was used in calculation of the standard error, with a bootstrap count of 10,000. Inputs from the 2015 Mozambique IMASIDA data include point estimates for HIV prevalence and the proportion of specimens tested on the RITA with a final recent classification, and their standard errors.

Table B.1 summarizes these inputs for the incidence rates shown in this report.

Table B.1 Inputs into the "inctools" package from the 2015 Mozambique IMASIDA data, according to HIV incidence algorithm

	HIV prevalence		Proportion recent	
Incidence group	Point estimate	RSE	Point estimate	RSE
VIRAL LOAD, LAg, AND ARV				
Women and men 15-49 years	0.132	0.046	0.012	0.259
Women 15-49 years	0.154	0.046	0.012	0.283
Men 15-49 years	0.101	0.063	0.012	0.531
Women and men 15-59 years	0.130	0.046	0.011	0.259
Women 15-59 years	0.151	0.045	0.011	0.284
Men 15-59 years	0.102	0.061	0.010	0.533
VIRAL LOAD AND LAg				
Women and men 15-49 years	0.132	0.046	0.014	0.242
Women 15-49 years	0.154	0.046	0.014	0.276
Men 15-49 years	0.101	0.063	0.013	0.482
Women and men 15-59 years	0.130	0.046	0.013	0.238
Women 15-59 years	0.151	0.045	0.013	0.277
Men 15-59 years	0.102	0.061	0.013	0.454

ARV = Antiretroviral biomarker
LAg = Limiting antigen
RSE = Relative standard error

Comparing the IMASIDA HIV incidence estimates with and without ARV biomarker data

The HIV incidence estimate including the ARV data in the RITA is slightly lower than the estimate based on viral load plus LAg only, though the difference is not statistically significant—5.1 new infections per 1,000 person-years versus 6.0 among women and men age 15-49. Usually, the explanation for such a difference is that the LAg plus viral load algorithm failed to detect all false recent specimens, and the addition of the ARV test detected these false recent specimens and correctly reclassified them from "recent" to "long-term," thus producing a lower incidence estimate. However, this scenario is not the reason for the difference between the two incidence estimates in the IMASIDA data.

None of the 21 specimens that had been classified as recent under the viral load plus LAg algorithm had ARVs detected. However, three of these cases could not undergo ARV testing because the blood samples had been exhausted. These specimens did not have results for all of the tests in the RITA necessary to reach a final classification and thus were considered as "not tested for recency." The difference between the two incidence estimates is attributable entirely to the treatment of these missing cases.

In order to understand the potential impact of the missing ARV data on the incidence estimate, we calculated maximum and minimum possible incidence estimates for the 2015 IMASIDA, by first assuming all missing cases were recent and then assuming all missing cases were long-term. The results are presented in **Table B.2**. The simulation assuming that all cases missing ARV results are recent infections results in an incidence estimate is 6.0 per 1,000 PY. This assumption produces a result equivalent to the HIV incidence estimate based on the viral load plus LAg algorithm because, in that algorithm, the cases missing ARV data were all classified as recent. The simulation assuming that all cases missing ARV data are long-term infections produces an estimate of 5.1 per 1,000 PY. Notably, this result is equivalent to the final incidence estimate published in this report, in which the cases not tested for ARVs are not considered long-term infections, but rather are considered not tested for recency. In the case of the IMASIDA data, these two methods happen to produce equivalent HIV incidence estimates because once the cases missing ARV data are removed from the count of recent cases, the proportion recent is the same to several decimal places whether those cases are removed or retained in the count of specimens tested for recency.

Table B.2 Sensitivity simulation for HIV incidence estimate

Annualized HIV incidence rate per 1,000 person-years of exposure and 95% confidence interval, among women and men aged 15-49 years, according to two possible scenarios for the final recency classification of the cases missing ARV data, Mozambique IMASIDA 2015

	Women and men age 15-49	
Assumption re: cases missing ARV data	Incidence rate (per 1,000 PY)	95% confidence interval
All missing are recent infections	6.0	(3.1 – 9.0)
All missing are long-term infections	5.1	(2.5 – 7.9)

PY = Person-years of exposure

This exercise produced two key findings. (1) The missing data introduces notable relative uncertainty in the HIV incidence estimate relying on viral load, LAg, and ARV, with possible point estimates ranging from 5.1 to 6.0 new infections per 1,000 PY. (2) In the case of this dataset, applying the standard treatment recommended for cases missing final recency classification is, in effect, the same as assuming that the missing cases are all long-term infections.

We examined other serological and self-reported data available for the 3 cases classified as recent according to LAg and viral load results but missing ARV biomarker data to explore the likelihood that these three cases are in fact long-term infections. Two of the three cases were self-reported HIV negative individuals with serological data consistent with recent infection—specifically, they appear to be individuals who are antibody-negative but PCR-reactive, and have extremely high viral loads. The third case is an individual who reported having been diagnosed with HIV more than two years prior to the survey, and who self-reported ARV use but did not have suppressed viral load. It appears unlikely that all three of these individuals are truly long-term infections. Therefore, it is possible that the HIV estimate derived from the viral load, LAg, and ARV algorithm could be slightly underestimated.

B.1.5 Home-based Testing for HIV and CD4 T-cell Counts

Respondents to the 2015 Mozambique IMASIDA, except those who self-reported positive HIV status during the interview, were offered home-based testing and counselling for HIV using the national HIV testing services algorithm. Those testing positive for HIV according to the rapid testing algorithm were offered point of care CD4 T-cell count testing. Methods for these tests are described in Chapter 1 of the 2015 IMASIDA final report (MISAU, INE and ICF, 2018).

B.2 90-90-90 INDICATORS

UNAIDS has defined an HIV treatment cascade consisting of three steps: being aware of positive HIV status, taking antiretroviral therapy (ART), and having viral load suppression (viral load <1,000 copies/ml). There are various ways to use the self-reported and biomarker data available from the 2015 IMASIDA to estimate ART use for these indicators. Three methods are presented in **Table B.3**. Method 2 was used in the 2015 IMASIDA final report before the ARV biomarker results were available (MISAU, INE and ICF, 2018); Method 3 reflects the final definition used in this report.

Table B.3 Numerators for the HIV treatment cascade and 90-90-90 indicators according to various definitions for ART use

	Method 1	Method 2	Method 3
Indicator	Self-report	Self-report or viral suppression	Self-report or ARV biomarker detected
Knowledge of HIV status	Self-report HIV positive	Self-report HIV positive or viral load <1,000 c/ml	Self-report HIV positive or ARV biomarker detected
Treatment coverage	Self-report of ART use	Self-report of ART use or viral load <1,000 c/ml	Self-report of ART use or ARV biomarker detected
Viral suppression	Self-report ARV use and viral load <1,000 c/ml	Viral load <1,000 c/ml	Self-report ART use or ARV biomarker detected, and viral load <1,000 c/ml

As shown in **Table B.4**, 17% of people living with HIV reported they have HIV, reported they are taking ART, and have suppressed viral load. However, viral suppression among PLHIV regardless of knowledge of status and ART use is 32% (**Table 3.5**). Cohort studies of people living with HIV indicate that, in absence of treatment, only a very low percentage are expected to have viral load suppression, perhaps 1-7% (Madec et al., 2005; Okulicz et al., 2009; Okulicz and Lambotte, 2011). A possible explanation of the high levels of viral load suppression observed among respondents who were not captured as ART users according to their self-report may be underreporting of positive HIV status and ART use during the interview. Low validity of self-reported HIV status among people living with HIV is not unique to this survey and has been documented elsewhere (Fishel et al., 2014; Kim et al., 2016). Before the ARV biomarker testing for the 2015 IMASIDA had been completed, Method 2 was developed with the assumption that the vast majority of viral suppression among respondents who were not identified as using ART according to self-report was attributable to undisclosed ART use. However, once the ARV biomarker data became available, they revealed that only 43% of PLHIV with viral suppression and no self-reported ART use had ARVs detected in their blood (data not shown). Undisclosed ART use, therefore, did explain some of the viral suppression among respondents who did not report ART use, but not all of it. A revised set of 90-90-90 estimates was then generated based on yet another definition of ART use. In Method 3, ART use is defined as either an affirmative self-report of ART use or a positive biomarker result for ARVs. The results under Method 3 in **Tables B.4** and **B.5** reflect the final estimates for the treatment cascade and 90-90-90 indicators for the 2015 IMASIDA shown in **Figures 3.6** and **3.7** and **Tables 3.6.1** and **3.6.2** of the present report.

Table B.4 HIV treatment cascade indicators

Numerators, denominators, and percentages for the HIV treatment cascade indicators for women and men age 15-49, according to various methods of calculation, Mozambique IMASIDA 2015

	Method 1			Method 2			Method 3		
Indicator	Numerator	Denominator	Percentage	Numerator	Denominator	Percentage	Numerator	Denominator	Percentage
Knolwedge of HIV status	409	1,231	33.3	575	1,231	46.7	492	1,220	40.3
Treatment	323	1,231	26.2	489	1,231	39.7	421	1,220	34.5
Viral suppression	211	1,231	17.1	393	1,231	31.9	285	1,220	23.4

Table B.5 90-90-90 HIV treatment targets

Numerators, denominators, and percentages for the 90-90-90 HIV treatment targets for women and men age 15-49, according to various methods of calculation, Mozambique IMASIDA 2015

	Method 1			Method 2			Method 3		
Indicator	Numerator	Denominator	Percentage	Numerator	Denominator	Percentage	Numerator	Denominator	Percentage
First 90	409	1,231	33.3	575	1,231	46.7	492	1,220	40.3
Second 90	323	409	78.9	489	575	85.0	421	492	85.6
Third 90	211	323	65.3	376	489	77.0	285	421	67.8