LESOTHO POPULATION-BASED HIV IMPACT ASSESSMENT

LePHIA 2016-2017

FINAL REPORT

SEPTEMBER 2019

LePHIA LESOTHO POPULATION-BASED HIV IMPACT ASSESSMENT | A DROP THAT COUNTS

BOPHELO

BOS Bureau of Statistics

CDC Centers for Disease Control and Prevention

ICAP Empowering Health Columbia University Mailman School of Public Health

LESOTHO POPULATION-BASED HIV IMPACT ASSESSMENT (LEPHIA) 2016-2017

LEPHIA 2016-2017 COLLABORATING INSTITUTIONS

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Lesotho Bureau of Statistics
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GLOSSARY OF TERMS

90-90-90: An ambitious treatment target to help end the AIDS epidemic. By 2020, 90% of all people living with HIV will know their HIV status; 90% of all people who know their HIV-positive status will receive sustained antiretroviral therapy (ART); and 90% of all people receiving ART will have viral load (VL) suppression (VLS).

Acquired Immunodeficiency Syndrome (AIDS): AIDS is a disease that can develop after HIV infection causes severe damage to the immune system, leaving the body vulnerable to life-threatening conditions, such as infections and cancers.

Adolescents: In this report, individuals aged 10-14 years of age are referred to as young adolescents and young people aged 15-19 years are referred to as older adolescents. Note: older adolescents are often categorized as part of the adult population for reporting purposes.

Adults: Unless otherwise noted, in this survey, adults are defined as the population of individuals aged 15-59 years.

Antiretroviral Therapy (ART): Treatment with antiretroviral (ARV) drugs that inhibit the ability of HIV to multiply in the body, leading to improved health and survival among people living with HIV.

CD4+ T-Cells: CD4+ T-cells (CD4) are white blood cells that are an essential part of the human immune system. These cells are often referred to as T-helper cells. HIV attacks and kills CD4 cells, leaving the body vulnerable to a wide range of infections. The CD4 count is used to determine the degree of weakness of the immune system from HIV infection.

Children: Unless otherwise noted, in this survey, the population of individuals 0-14 years of age are defined as children.

De Facto Household Resident: A person who slept in the household the night prior to the survey.

Enumeration Area (EA): A limited geographic area defined by the national statistical authority and the primary sampling unit for the Population-based HIV Impact Assessment (PHIA) surveys.

Head of Household: The person who is recognized within the household as being the head and is aged 18 years and older or is considered an emancipated minor (a young person aged 15-17 years who is married, the parent of a child, or has left home and is self-sufficient, as defined by law in Lesotho).

Human Immunodeficiency Virus (HIV): HIV is the virus that causes AIDS. The virus is passed from person to person through blood, semen, vaginal fluids, and breast milk. HIV attacks CD4 cells in the body, leaving the HIV-positive person vulnerable to illnesses that a healthy immune system would have eliminated.

HIV Incidence: A measure of the frequency with which new cases of HIV occur in a population over a period of time. The denominator is the population at risk; the numerator is the number of new cases that occur during a given time period.

HIV Prevalence: The proportion of living persons in a population who are HIV positive at a specific point in time. The denominator is the total population; the numerator is the number of HIV-positive persons.

HIV Viral Load (VL): The concentration of HIV ribonucleic acid (HIV RNA) in the blood, usually expressed as copies per milliliter (mL).

HIV Viral Load Suppression (VLS): An HIV VL of less than 1,000 copies per mL.

Household: A person or group of persons related or unrelated to each other who live in the same compound (fenced or unfenced), who normally live and eat together, making a common provision for food or other essentials for living, and have one person whom they identify as head of that household.

Informed consent: Informed consent is a legal condition whereby a person can give consent based upon a clear understanding of the facts, implications, and future consequences of an action. In order to give informed consent, the individual concerned must have adequate reasoning faculties and be in possession of all relevant facts at the time he or she gives consent.

Male circumcision: Male circumcision is the removal of the entire foreskin (prepuce) from the penis. Medically supervised adult male circumcision is scientifically proven to reduce a man's risk of acquiring HIV infection through heterosexual intercourse.

Prevention of mother-to-child transmission (PMTCT): Activities to prevent an HIV-positive woman passing HIV to her baby during pregnancy, labor and delivery, or breastfeeding. The World Health Organization recommends effective PMTCT to include a four-fold approach: (1) primary prevention of HIV infection among women of childbearing age; (2) preventing unintended pregnancies among women living with HIV; (3) preventing HIV transmission from women living with HIV to their infants; and (4) providing appropriate treatment, care, and support to mothers living with HIV, their children, and families.

Severe immunosuppression: When the body's ability to mount an immune response to fight infections or disease is dramatically reduced, primarily due to HIV, as measured by a CD4 count less than 200 cells per microliter (µL).

Tuberculosis (TB): Tuberculosis is a contagious bacterial disease that can spread through the air when a person with pulmonary TB coughs or sneezes. TB is the leading cause of death among people living with HIV in Africa.

Young adults: Unless otherwise noted, in this report, young adults are defined as individuals aged 20-24 years.

Young people: In this report, young people are defined as the population aged 15-24 years, including both older adolescents and young adults.

List of Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral Therapy
ARV	Antiretroviral
BOS	Bureau of Statistics
CDC	U.S. Centers for Disease Control and Prevention
CD4	CD4+ T-Cell
CI	Confidence Interval
DBS	Dried Blood Spot
DNA	Deoxyribonucleic Acid
DSD	Differentiated Service Delivery
EA	Enumeration Area
EIA	Enzyme Immunoassay
EID	Early Infant Diagnosis
GBV	Gender-Based Violence
HBTC	Home-Based HIV Testing and Counseling
HIV	Human Immunodeficiency Virus
IPV	Intimate Partner Violence
IQR	Interquartile Range
LAg	Limiting Antigen
mL	Milliliters
µL	Microliters
LePHIA	Lesotho Population-based HIV Impact Assessment
MDRI	Mean Duration of Recent Infection
MOH	Ministry of Health
MTCT	Mother-to-Child Transmission
NNRTI	Nonnucleoside Reverse Transcriptase Inhibitors
NRL	National Reference Laboratory
NRTI	Nucleoside Reverse Transcriptase Inhibitors
ODn	Normalized Optical Density
PCR	Polymerase Chain Reaction
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PFR	Proportion False Recent
PHIA	Population-based HIV Impact Assessment
PMTCT	Prevention of Mother-to-Child Transmission of HIV
POC	Point of Care
PrEP	Pre-Exposure Prophylaxis

QA	Quality Assurance
QC	Quality Control
RNA	Ribonucleic Acid
RR	Response Rate
SMS	Short Message Service
T	Time Cutoff
TB	Tuberculosis
TNA	Total Nucleic Acid
UNAIDS	Joint United Nations Programme on HIV / AIDS
VL	Viral Load
VLS	Viral Load Suppression
VMMC	Voluntary Medical Male Circumcision
WHO	World Health Organization

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FOREWORD

We are pleased to present the results from the Lesotho Population-based HIV Impact Assessment (LePHIA) 2016-2017, the first national survey to provide comprehensive information on important HIV/AIDS indicators at national and regional levels and measure progress toward the UNAIDS 90-90-90 targets. This survey included a nationally representative sample of almost 9,000 households throughout Lesotho. It described demographic characteristics of respondents, reproductive history, prevention of mother-to-child transmission (PMTCT), male circumcision, HIV/AIDS knowledge and attitudes, HIV testing and awareness of HIV status, care and treatment, tuberculosis (TB), gender norms, and gender-based violence (GBV). LePHIA also collected information about HIV testing and treatment in children. Through blood tests, we measured the national HIV incidence in adults and viral load suppression (VLS) and HIV prevalence in adults and children.

This survey has come at the right time, as the global HIV prevention and treatment community is focusing on epidemic control. These data allow us to better monitor HIV programs, understand which sub-populations are still unaware of their HIV status, and measure progress toward population VLS at a sub-national level. Both the biological and behavioral data from LePHIA allow program planners to target the right populations with tailored interventions—and allow policy makers to appropriately improve service delivery models.

LePHIA was led by the Government of Lesotho through the Ministry of Health (MOH), and conducted with funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and technical assistance through the U.S. Centers for Disease Control and Prevention (CDC). The survey was implemented from November 2016 to May 2017 by ICAP at Columbia University in collaboration with local partners, including the Lesotho Bureau of Statistics (BOS).

We would like to acknowledge the efforts of national and international organizations in the planning and implementation of the survey and in writing this report, in particular, the LePHIA Technical Working Group and Steering Committee. We are especially grateful to our field staff and the respondents, who graciously provided their time and data for the benefit of the nation.

Hon. Nkaku Kabi

Minister of Health

EXECUTIVE SUMMARY

The Lesotho Population-based HIV Impact Assessment (LePHIA) 2016-2017 was a nationally representative, cross-sectional, population-based survey of households across Lesotho. LePHIA focused on measuring key biological endpoints to provide direct estimates of HIV infection risk and burden, and of the effectiveness and population-level impact of the HIV-related prevention, care, and treatment interventions implemented in the country. Its primary objectives were to estimate the national-level annual HIV incidence among adults (the population aged 15-59 years), and the district-level prevalence of HIV viral load (VL) suppression (VLS) (defined as HIV ribonucleic acid [RNA] < 1000 copies per milliliter [mL]) among HIV-positive adults. In addition, LePHIA measured national and district-level adult HIV prevalence, CD4 counts, antiretroviral (ARV) drugs in blood, transmitted HIV drug resistance, pediatric HIV prevalence, and progress toward the 90-90-90 targets defined by UNAIDS. LePHIA is the first national survey to conduct these measurements in Lesotho. The survey also collected information on behaviors associated with HIV infection, such as external migration and gender-based violence (GBV).

The survey used a two-stage, stratified cluster sample design, in which census enumeration areas (EA) (clusters) were selected in the first stage and households in the second stage. Data collection was conducted between the end of November 2016 and May 2017. The survey involved interviewing 8,824 households. In the households surveyed, 14,028 adults and 4,870 children (the population aged 0-14 years) were eligible to participate in the survey. Altogether, 92% (12,887) of eligible adults were interviewed, and 91% (11,682) of interviewed adults and 81% (3,966) of eligible children provided blood for biomarker assessment to determine their HIV status. LePHIA provided home-based HIV testing and counseling (HBTC) with return of results, and point-of-care (POC) CD4 counts for those who were HIV positive. HIV VL results and early infant diagnosis (EID) results were returned to participants through the health facilities of their choice. LePHIA provides weighted estimates. Analysis weights accounted for sample selection probabilities and were adjusted for nonresponse and noncoverage. The key findings of LePHIA were:

- Annual HIV incidence among adults in Lesotho was 1.10%; 1.22% among women, and 1.00% among men, using the algorithm including ARV detection (see section 5.3). This corresponded to almost 10,000 new cases of HIV annually among adults in the country in 2017. Annual incidence was highest in men aged 35-49 years (2.65%) and among older adolescent girls and young women (aged 15-24 years) at 1.49%."
- HIV prevalence among adults in Lesotho was 25.6%: 30.4% among women and 20.8% among men. This corresponded to approximately 306,000 adults living with HIV in the country. The burden of HIV infection varied across the country.
- The vast majority (86.9%) of the adults reported that they had ever been tested for HIV and received their results (91.3% of women and 82.7% of men). However, only 56.1% of adults reported having been tested and receiving their results in the 12 months preceding the survey (61.7% of women and 50.5% of men).
- In Lesotho, 67.6% of HIV-positive adults had VLS, 63.4% among men and 70.5% among women. The percentage of HIV-positive adults with VLS ranged from 58.8% in Mokhotlong to 71.7% in Berea. Above 35 years of age, the proportion with VLS was significantly higher. The prevalence of VLS was

51.0% among young people (the population aged 15-24 years, including older adolescents aged 15-19 years and young adults aged 20-24 years), and 62.7% among children.

- Based on self-report and ARV detection data, it was estimated that 81.0% of adults living with HIV knew their HIV status (76.6% of HIV-positive men and 84.0% of HIV-positive women), 91.8% of whom were receiving antiretroviral therapy (ART) (91.6% of men and 92.0% of women), and that 87.7% of those on ART had achieved VLS (87.7% of men and women). It therefore appears that once men become aware of their status, they can achieve the same progress towards ART coverage and VLS as women.
- Among women aged 15-49 years who delivered in the 12 months preceding the survey, 95.6% reported knowing their HIV status while pregnant, while 98.5% of HIV-positive women reported receiving ARVs during their pregnancy. However, among infants born in the previous 17 months to HIV-positive mothers, 2.8% were confirmed to be HIV positive as part of the virological testing performed in LePHIA. Other infants were still at risk of HIV as they were still breastfeeding.
- Among young people, annual HIV incidence was estimated at 0.78% (95% confidence interval (CI) 0.31- 1.25%), and was high in older adolescent girls and young women (1.49%). HIV prevalence in older adolescents was 4.2% (2.8% in boys and 5.7% in girls) and 10.4% in young adults aged 20-24 years: 4.0% in young men and 16.7% in young women). Based on self-report and detection of ARVs in blood, 67.6% of young people living with HIV had been previously diagnosed with HIV (71.3% of older adolescent boys and young men and 66.4% of older adolescent girls and young women), and among those who had been previously diagnosed, 90.6% were on ART. Among those on treatment, only 77.2% achieved VLS.
- The estimated HIV prevalence among children was 2.1%. Based on parents' report and ARV detection data, it was estimated that 81.1% of children living with HIV were previously diagnosed, 98.2% of those were on ART, but only 73.9% of those on ART had VLS.
- HIV prevalence in women who reported engaging in paid sexual intercourse in the 12 months preceding the survey was 46.2%, and in men who reported paying for sex, it was 24.1%. Of those engaging in paid sexual intercourse, 51.4% of women and 36.3% of men reported not using a condom at last paid sexual intercourse.
- Amongst married or cohabitating adults, 27.1% of men had an extra-marital partner in the past 12 months compared to 11.9% of women. One third reported not using a condom with their last non-marital partner.
- Among men, 36.0% reported having undergone medical circumcision, 31.6% non-medical or traditional circumcision, and 30.7% were uncircumcised.
- A history of sexual violence was associated with a significantly higher prevalence of HIV in women (39.3% vs 31.0% in women who did not report a history of being forced to have sex).
- One in five people living with HIV (20.6%) reported having been diagnosed with tuberculosis (TB) during their lifetime. In all adults, TB was more common in men than in women.
- Nearly one-quarter of all respondents reported having lived outside of Lesotho: 30.9% of men and 17.8% of women. HIV prevalence was significantly higher in those who reported ever having lived outside Lesotho than in those who did not.
- Despite living in a country where over one in three households (37.6%) had at least one HIV-positive member, only 28.3% of young people correctly responded to all questions in a set that assessed knowledge of HIV transmission and prevention (26.0% of older adolescent boys and young men and 30.7% of older adolescent girls and young women). Furthermore, of those adults who had ever heard of HIV, 17.4% reported discriminatory attitudes towards people living with HIV, with the highest level seen among older adolescents.

LePHIA results indicate that HIV continues to cause a significant burden of disease in the country. Although there has been remarkable progress toward the achievement of the UNAIDS 90-90-90 targets in adults, significant gaps remain. The major challenge remains that of diagnosis, and a critical priority is to identify and link to care those living with HIV, but unaware of their HIV status. An additional challenge among young people and children is to ensure VLS among those receiving ART. It is unclear if the low prevalence of VLS is due to poor adherence or drug resistance.

LePHIA incidence estimates indicated that there were almost 10,000 new cases of HIV infection among adults in 2017. The considerable variation in prevalence of HIV infection and VLS across districts and population groups, and the low frequency of preventative behaviors, such as condom use with high-risk partners and practices such as medical circumcision, indicate that the country requires an intensified, targeted approach to the delivery of a combination of effective, evidence-based, prevention interventions in order to reduce HIV acquisition and transmission. Increasing coverage of diagnosis, while sustaining high levels of treatment and VLS, are key to reducing new HIV infections in Lesotho.

1 INTRODUCTION

1.1 Background

The Population-based HIV Impact Assessment (PHIA) is a multicountry project funded by the United States President's Emergency Plan for AIDS Relief (PEPFAR) to conduct national HIV-focused surveys that describe the status of the HIV epidemic. The surveys measure important national and regional HIV-related parameters, including progress toward the achievement of the Joint United Nations Programme on HIV/AIDS (UNAIDS) 90-90-90 targets,[1] and will guide policy and funding priorities.

LePHIA was led by the Government of Lesotho through the Ministry of Health (MOH) with technical assistance from the United States Centers for Disease Control and Prevention (CDC). The survey was implemented by ICAP at Columbia University in collaboration with the Lesotho Bureau of Statistics (BOS). LePHIA 2016-2017 received ethical approval from the Lesotho National Health Research and Ethics Committee, Westat Institutional Review Board, the CDC Institutional Review Board, and the Columbia University Medical Center Review Board.

1.2 Overview of LePHIA 2016-2017

LePHIA, a household-based national survey, was conducted between November 2016 and May 2017 to measure the status of Lesotho's national HIV response. LePHIA offered HBTC with return of results and collected information about uptake of HIV care and treatment services. This survey was the first in Lesotho to measure national HIV incidence, VLS prevalence, pediatric HIV prevalence, CD4 count distribution, presence of ARVs in blood, and transmitted HIV drug resistance. The survey also collected information on selected behaviors associated with HIV acquisition and transmission, and on TB.

Although HIV facility-based sentinel surveillance and previously conducted population-based studies provided useful knowledge regarding Lesotho's HIV epidemic and HIV-control efforts, other critical information was still lacking to understand the current status of the epidemic and guide future interventions. While population-level outcomes and impact can be inferred and modeled from facility-level data, this requires a series of untested assumptions about trends in the unobserved segments of the population. In addition, the population-based data that were available for HIV focused largely on knowledge, attitudes, and self-reported risk behaviors.

With its focus on measuring key biological endpoints in a nationally representative sample of the population, LePHIA has provided direct estimates of HIV-infection risk and burden, the effectiveness and population-level impact of HIV-related prevention, care, and treatment interventions implemented in the country, and progress toward the achievement of the UNAIDS 90-90-90 targets.

1.3 Specific Objectives

The goal of the survey was to estimate HIV incidence and prevalence in Lesotho, to assess the coverage and impact of HIV services at the population level, and to characterize HIV-related risk behaviors using a nationally representative sample of adults and children.

Primary Objectives

- To estimate national-level annual HIV incidence among adults (the population aged 15-59 years).
- To estimate the subnational (district) prevalence of VLS among HIV-positive adults.

Secondary Objectives

- To estimate the national prevalence of HIV infection among children (defined as those aged 0-14 years).
- To estimate the national and subnational prevalence of HIV infection among adults.
- To determine the distribution of CD4 counts among HIV-positive people aged 0-59 years.
- To estimate the prevalence of detectable ARVs in blood and the frequency of transmitted drug resistance among HIV-positive people.
- To describe the prevalence of reported HIV-related risk behaviors among adults.
- To describe the uptake of HIV-related services among male and female participants aged 0-59 years.

1.4 References

1. Joint United Nations Programme on HIV/AIDS (UNAIDS). *90-90-90: An ambitious treatment target to help end the AIDS epidemic.* Geneva: UNAIDS; 2014. http://www.unaids.org/sites/default/files/media_asset/90-90-90_en_0.pdf. Accessed December 20, 2018.

2 SURVEY DESIGN, METHODS, AND RESPONSE RATES

LePHIA was a nationally representative, cross-sectional, population-based survey of households across Lesotho. Its target population corresponded to children (those aged 0-14 years) and adults (those aged 15-59 years). The survey population excluded institutionalized children and adults.

2.1 Sample Frame and Design

LePHIA used a two-stage, stratified cluster sample design. The sampling frame was comprised of all households in the country based on preliminary data from the 2016 Population and Housing Census, which includes 5,684 residential EAs, containing an estimated 568,429 households.[1] The first stage selected 418 EAs (clusters) using a probability proportional to size method. The 418 EAs were stratified by ten districts: Butha Buthe, Leribe, Berea, Maseru, Mafeteng, Mohale's Hoek, Quthing, Qacha's Nek, Mokhotlong and Thaba Tseka. During the second stage, a sample of households was randomly selected within each EA, or cluster, using an equal probability method, where the average number of households selected per cluster was 26 and the actual number of households selected per cluster ranged from 15 to 35 (Table 2.1.A). Urban areas were defined by the BOS, and were characterized by either high population density, or of a high level of economic activities or infrastructure. Peri-urban areas were defined as areas with moderate population density, or a lesser extent of economic activities or infrastructure. Rural areas were those with only minimal population density or little infrastructure or economic activities.

The sample size was calculated to provide representative national estimates of HIV incidence among older adolescent girls and young women aged 15-24 years and adults aged 15-59 years with a relative standard error less than or equal to 30.0%, as well as representative district estimates of VLS prevalence among HIV-positive adults with 95% confidence intervals (CIs) with ±10% bounds around the point estimates. One-half of the households were randomly selected for inclusion of children, which was designed to provide a representative national estimate of pediatric HIV prevalence with a relative standard error less than or equal to 13.0%. The target sample size was 12,698 for adults and 4,222 for children.

Table 2.1.A Distribution of sampled enumeration areas and households, by district

	Enumeration Areas				Households			
District	Urban	Peri-urban	Rural	Total	Urban	Peri-urban	Rural	Total
Maseru	62	9	31	102	1,624	239	794	2,657
Mafeteng	11	3	27	41	264	76	719	1,059
Mohale's Hoek	11	0	28	39	300	0	731	1,031
Leribe	25	4	36	65	674	112	907	1,693
Berea	20	6	25	51	523	168	637	1,328
Quthing	7	2	17	26	191	63	422	676
Butha Buthe	7	0	20	27	194	0	509	703
Mokhotlong	3	1	17	21	88	28	431	547
Qacha's Nek	5	0	15	20	129	0	392	521
Thaba Tseka	3	2	21	26	85	51	541	677
Total	154	27	237	418	4,072	737	6,083	10,892

Appendix A: Sample Design and Weighting provides a more detailed explanation of the sampling and weighting processes.

2.2 Eligibility Criteria, Recruitment, and Consent Procedures

The eligible survey population included individuals living in the selected households, or visitors who slept in the household the night before the survey who were:

- Women and men aged 18-59 years who were willing and able to provide written consent,
- Adolescents aged 12-17 who were willing and able to provide written assent, and whose parents or guardians were willing and able to provide written permission for their participation, and
- Children aged 0-11 years whose parents or guardians were willing and able to provide written consent for their participation.

An electronic informed consent form was administered using a tablet (Appendix H). At each stage of the consent process, consent was indicated by signing or making a mark on the consent form on the tablet and on a printed copy, which was retained by the participant. A household-designated head provided written consent for household members to participate in the survey, after which individual members were rostered during a household interview. Adults and emancipated minors then provided written consent on the tablet for an interview. After completing the interview, they provided written consent for participation in the biomarker component of the survey, including HBTC, with return of HIV test results and CD4 counts during the household visit. Receipt of HIV test results was a requirement for participation in the biomarker component. If an individual did not want to receive his or her HIV test result, this was considered a refusal and the survey was concluded. Adults were also asked for written consent to store their blood samples in a repository to perform additional tests in the future, and for consent to share their contact information with the MOH or an implementing partner if HIV positive for active linkage to care.

Adolescents aged 12-17 years were asked for assent to the interview and biomarker components after permission was granted by their parents or guardians. Parents provided consent for interview and biomarker testing for children aged 10-11 years, and provided consent for biomarker testing for children below the age of 10 years. In both cases, if a parent or guardian did not want to receive his or her child's HIV test result, this was considered a refusal and the survey was concluded. Adolescents aged 12-17 years were also asked for consent for linkage to care as in adults, and parents provided consent for children aged 0-11 years.

Procedures with illiterate participants, or participants with a sight disability, involved the use of an impartial witness, chosen by the potential participant, who also signed or made a mark on the consent form on the tablet and the printed copy. If no witness could be identified, the potential participant or household (if the head of household was sight disabled or illiterate) was deemed ineligible.

2.3 Survey Implementation

Training of Field and Laboratory Staff

Survey staff received training on both the contents of the data collection instruments and tablet use. The training curriculum included:

- Scientific objectives of the survey
- Survey design and methods

- Completion of survey forms
- Data collection and security
- Staff responsibilities
- Recruitment of participants
- Informed consent procedures, including human participants' protection, privacy, and confidentiality
- Blood collection for children and adults, including venipuncture and finger/heel stick
- HBTC
- CD4 count measurement using the POC Pima™ Analyzer
- Referral of participants to health and social services
- Consent for active linkage to care
- Management and transportation of blood specimens
- Biosafety
- Communication skills
- Protocol deviations, adverse events, and reporting of events

Laboratory staff were trained in specimen management, including sample processing, labeling, and quality assurance (QA). Central laboratory staff were trained in VL measurement, early infant diagnosis, HIV confirmatory testing, and HIV recency testing using a limiting antigen (LAg) avidity enzyme immunoassay (EIA).

Survey Staff

Fieldwork started at the end of November 2016 and was completed in May 2017. Fieldwork was conducted by 24 locally hired field teams composed of a team leader, four nurse interviewers, two additional interviewers, and a driver. A total of 256 field staff including field coordinators, team leaders, nurses, interviewers, community-mobilization coordinators and community mobilizers, and drivers participated in data collection. Survey personnel were selected based on their qualifications and areas of expertise. Each field team was supervised by a team leader, and all teams were overseen by four regional coordinators, who guided and oversaw data collection activities, performed quality checks, and provided technical support (Appendix D).

In addition, seven laboratory technicians processed samples and performed additional procedures for HIV-1 VL, infant virological HIV testing, and quality control (QC) and QA. National and international monitors periodically conducted direct observation of data collection activities in the field and in the laboratories to provide technical support and ensure quality.

Community Sensitization and Mobilization

Community mobilization was conducted prior to data collection to maximize community support and participation in the survey. The mobilization began before fieldwork commenced with a high-level national launch meeting under the leadership of Her Majesty the Queen Masenate Seeiso that included key national and district leaders, mass media, and other stakeholders. Additionally, a high-level advocacy session was held with all the Principal Chiefs of Lesotho. Community mobilization teams visited each EA prior to initiation of data collection and partnered with health surveillance assistants to meet key gatekeepers in the communities (chiefs, local government officials, and religious and community leaders). The mobilization teams held community sensitization meetings; disseminated

written informational materials, such as brochures and posters; and held discussions with selected households and other community residents.

Supervision

Data-collection teams were continuously overseen by field-based supervisors, and periodically monitored by national and international teams, with representation from collaborating institutions. Monitoring teams visited field and laboratory sites at least monthly, and provided direct supervision as well as verification of results by household revisits. Daily monitoring forms for household and individual outcome tracking were also reviewed by monitors for completeness. Field-based supervisors also supported teams by organizing supplies and transport of blood samples, coordinating community-mobilization efforts, providing technical troubleshooting, and checking the quality of household procedures and data collected.

The national and international monitoring teams observed and assessed the quality of survey procedures, including adherence to protocol and standard operating procedures, and identified and responded to challenges with data collection. Regular debriefing sessions were held between field-based supervisors and monitoring teams. Monitoring reports were circulated to collaborating institutions and the LePHIA Technical Working Group to respond to any issues.

Electronic Monitoring System

An electronic dashboard system was established to monitor the progression of the survey. The dashboard summarized data uploaded to the PHIA server daily. The dashboard tracked coverage and completion of EAs, sampled households, household response rates (RRs), eligible household members providing consent to the interview, biomarker components of the survey, blood draws, individual RRs, and overall progress towards the achievement of the target sample.

Questionnaire Data Collection

Questionnaire and field laboratory data were collected on mobile tablet devices using an application programmed in Open Data Kit, an open-source mobile data collection application. The household interview collected information on household residents, assets, and economic support (see Appendix E). The adult interview was administered to participants above 15 years of age and included modules on demographic characteristics, sexual and reproductive health, marriage, migration, male circumcision, sexual activity, HIV/AIDS knowledge and attitudes, HIV testing and treatment history, TB, and gender norms (see Appendix F). Participants who reported awareness of their HIV-positive status were asked questions about their HIV care experience. Parents also answered questions about their children's (ages 0-14 years) health and participation in HIV services as a part of the adult interview. In each household, one female participant among those aged 13-59 years was also randomly selected to answer questions about her experiences with violence. Participants of any age who reported having experienced violence and minors who reported having experienced sexual exploitation were provided with referrals to social services. Female participants were interviewed by staff that were women, and male participants by staff that were men, whenever possible. The questionnaire was administered in the two languages most commonly used in Lesotho. The English and Sesotho versions of the questionnaires were reviewed and tested thoroughly for acceptability, feasibility, and flow of questions.

2.4 Field-Based Biomarker Testing

Blood Collection

Blood was collected by qualified survey staff from consenting participants: 14 mL of venous blood from adults above 15 years of age, and 6 mL of venous blood from children aged 2-14 years, and 1 mL of capillary blood from children aged 0-23 months (using finger-stick for children aged 6-23 months and heel-stick for infants below 6 months of age). Finger-stick capillary blood collection was also performed on children aged 2 years and older who refused or failed venous draw.

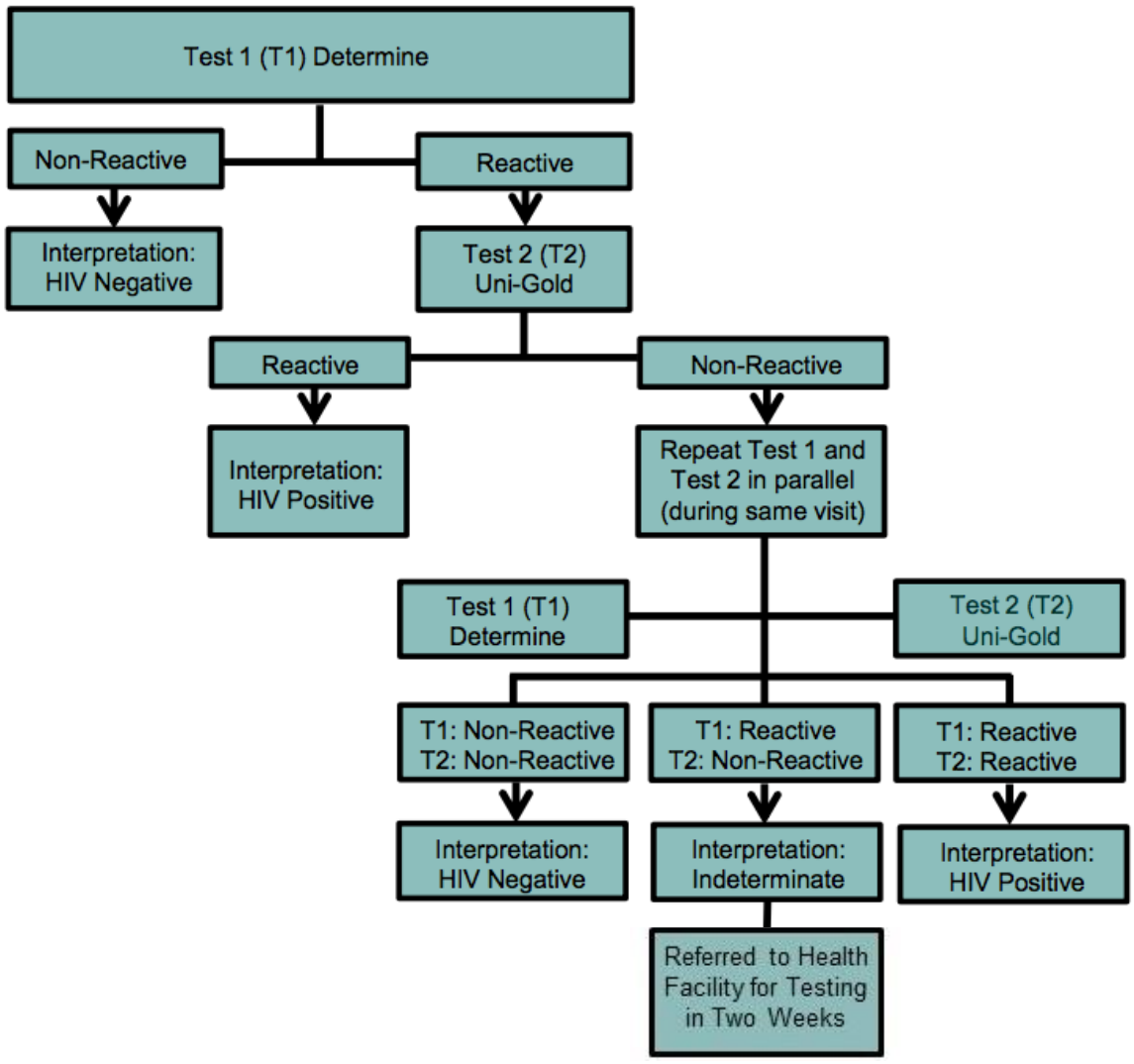
Blood samples were labeled with a unique pre-printed bar-coded participant identification number and stored in temperature-controlled cooler boxes. At the end of each day, samples were transported to a satellite laboratory for processing into plasma aliquots and dried blood spots (DBS), and were frozen within 24 hours of blood collection.

HIV Home-Based Testing and Counseling

HIV HBTC was conducted in each household in accordance with national guidelines (Figure 2.4.A).[2] As per these guidelines, the survey used a sequential rapid-testing algorithm in the field: Determine™ HIV-1/2 (Abbott Molecular Inc., Des Plaines, Illinois, United States) as a screening test, and Uni-Gold™ (Trinity Biotech, plc., Wicklow, Ireland) as a confirmatory test. Individuals with a non-reactive result on the screening test were reported as HIV negative. Individuals with a reactive screening test underwent confirmatory testing. Those with reactive results on both the screening and confirmatory tests were classified as HIV positive. Individuals with a reactive screening test result, followed by a non-reactive confirmatory test result, were retested in parallel. If the results were repeatedly discordant, the individual was classified as indeterminate.

HIV-seropositive participants were referred to HIV care and treatment services at a health facility of their choice, and were consented for contact for active linkage to care. For children below 12 years of age, results were returned to a parent or guardian. Participants with indeterminate results were advised to attend a facility in two weeks for repeat testing, as per national guidelines.

Figure 2.4.A Household-based HIV testing algorithm, ages 18 months and older, LePHIA 2016-2017



For children less than the age of 18 months, only the screening test (Determine) was performed in the field. If the test was reactive, HIV total nucleic acid (TNA) polymerase chain reaction (PCR) for virologic testing of HIV infection was performed in the reference laboratory, as described below (Section 2.5).

For participants who reported awareness of their HIV-positive status, but tested HIV negative at the time of the survey, additional laboratory-based testing was conducted using HIV DNA PCR for confirmation of the status. In conjunction with the MOH, survey staff revisited these participants and health providers to provide counseling and guidance on next steps to confirm these results, particularly for those on ART.

On a weekly basis, QC was performed by field staff performing HIV testing using a panel of positive and negative dried tube specimens. In addition, QA proficiency testing was conducted twice in the course of the survey, using a panel of masked HIV-positive and negative dried tube specimens. Proficiency in the correct performance and interpretation of the HIV testing algorithm was assessed for each tester.

CD4+ T-Cell Count Measurement

All participants who tested HIV positive during HBTC, and a random sample of 2.0% of those who tested HIV negative, received a CD4 count measurement in the field by qualified survey staff. The measurement was performed using the Pima™ CD4 Analyzer (Abbott Molecular Inc., Chicago, Illinois, United States, formerly Alere).

2.5 Laboratory-Based Biomarker Testing

Satellite and Central Laboratories

Three satellite laboratories for the survey were established in existing health facility laboratories, and two mobile laboratories were utilized during implementation. The Lesotho National Reference Laboratory was used for more specialized tests. At each satellite and mobile laboratory, trained technicians performed processing of whole blood specimens into plasma aliquots and DBS cards for storage at -20°C, testing for QA, and HIV confirmatory testing. For QA of the HIV rapid testing conducted in the field, the first 50 samples tested by each field tester, and subsequently all indeterminate, and a random sample of 5.0% of specimens that tested HIV negative during HBTC, were retested in the laboratory using the national HIV rapid-testing algorithm. All specimens that tested HIV positive during HBTC, and those that had confirmed positive or indeterminate rapid test results during QA, underwent confirmatory testing using the Geenius HIV 1/2 Supplemental Assay (Bio-Rad, Hercules, California, United States). A positive Geenius result defined HIV-positive status. Central laboratory procedures included HIV VL testing; HIV DNA PCR for infant virologic testing and for confirmation of status of those who reported awareness of their HIV-positive status, but tested negative in HBTC; HIV recency testing; and long-term storage of samples at -80°C.

The survey conducted household revisits for investigation of discrepancies between the results of testing in the field and in the laboratory. The specimens collected during the revisit underwent comprehensive retesting in the laboratory. For each case, an analysis of the nature of the discrepancy, and potential sources of error, was performed to confirm the definitive HIV status for analytical purposes.

Viral Load Testing

The HIV-1 VL (HIV RNA copies per mL) of confirmed HIV-positive participants was measured using the Roche platform (Roche Diagnostics, Indianapolis, Indiana, United States), the COBAS AmpliPrep (which carries out automated extraction, purification, and preparation of HIV-1 RNA), and the TaqMan analyzer (which amplifies and quantifies the HIV-1 RNA load). For plasma, the 1.0 mL protocol was used, while DBS samples were referred to the National Institute for Communicable Disease in South Africa for VL measurement, using the Abbott Real Time HIV-1 assay (Abbott Molecular Inc., Chicago, Illinois, United States).

VL results were returned within six to 12 weeks to the health facility chosen by each HIV-positive participant. Participants were provided with a referral form during HBTC for subsequent retrieval of their results. Survey staff also contacted each participant via Short Message Service (SMS), informing them that their VL results were available at the chosen facility and further advising them to seek care and treatment.

Infant HIV Virologic Testing

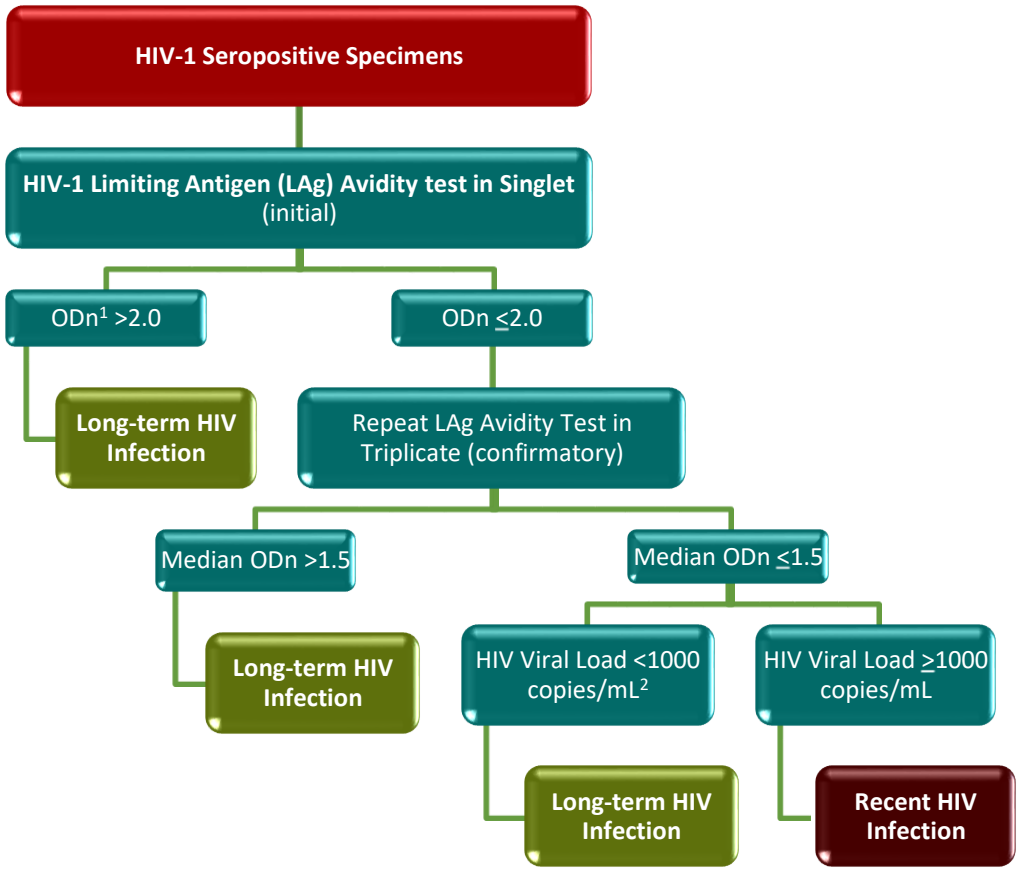
For infants below 18 months of age who had a reactive test for HIV during HBTC, virologic testing was conducted via HIV TNA PCR using the COBAS AmpliPrep/COBAS TaqMan HIV-1 Qualitative Test (Roche Molecular Systems, Branchburg, NJ, USA). Positive virological results were returned directly to the child's parents either by phone call or home visit and negative results to the health facility selected by the child's parent or guardian within eight weeks. Survey staff also contacted the parent or guardian via SMS to inform them that the child's results were available at the facility.

HIV Recent Infection Testing Algorithm

To distinguish recent from long-term HIV infections, in order to estimate incidence, the survey used two different laboratory-based testing algorithms. Each algorithm employed a combination of assays: 1) HIV-1 LAg-Avidity EIA (Sedia Biosciences Corporation, Portland, Oregon, United States) and VL (Figure 2.5.A) and 2) HIV-1 LAg Avidity EIA, VL, and ARV detection (Figure 2.5.B), as described in Appendix B.

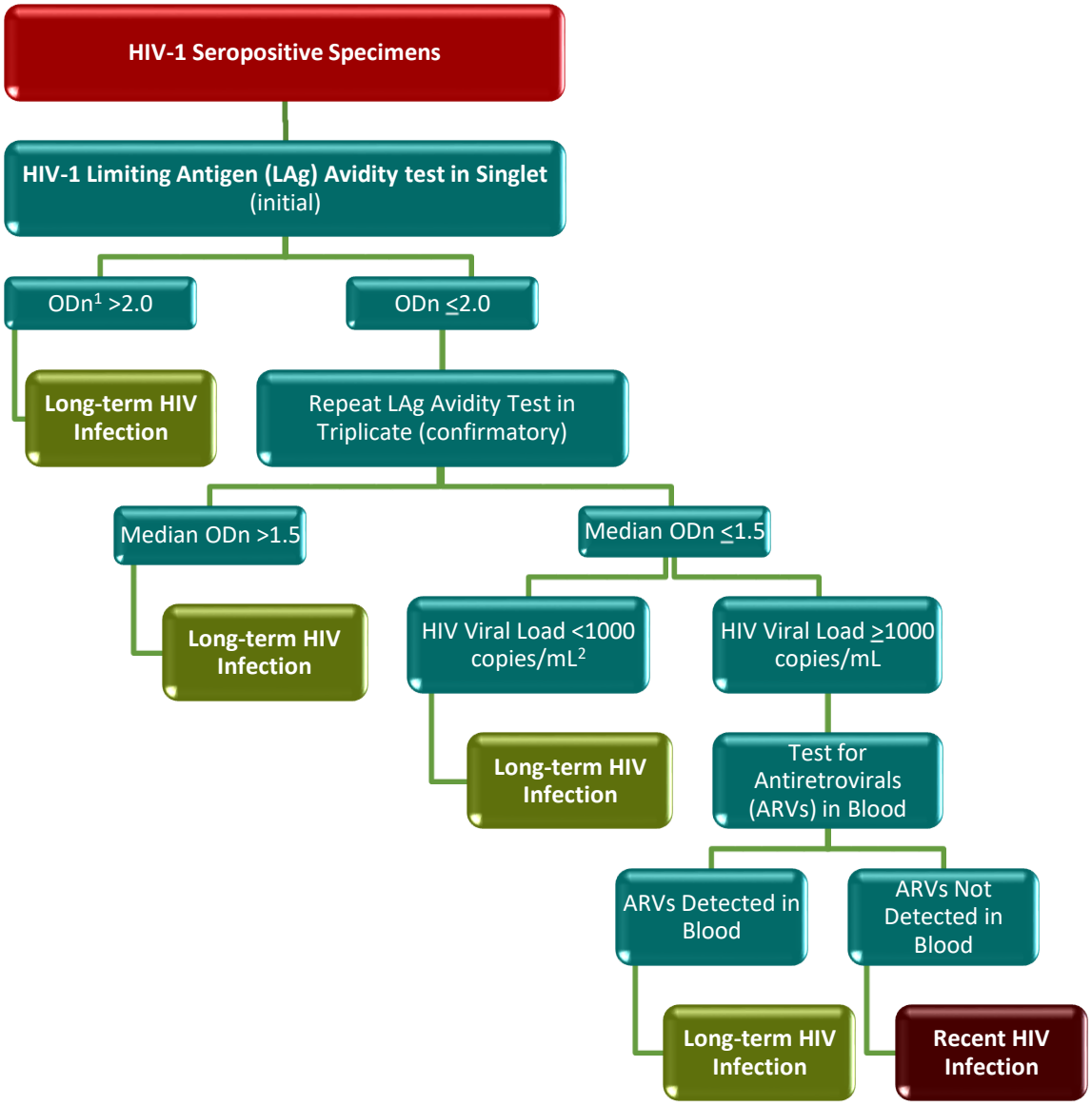
Specimens with median normalized optical density (OD_n) ≤ 1.5 were classified as potential recent infections and their VL results were assessed. Specimens with VL < 1,000 copies/mL were classified as long-term infections, while those with VL ≥ 1,000 copies/mL were classified as recent infections (Figure 2.5.A). In the ARV-adjusted algorithm, specimens with VL ≥ 1,000 copies/mL and with detectable ARVs were classified as long-term infections. Specimens with VL ≥ 1,000 copies/mL and without detectable ARVs were classified as recent infections.

Figure 2.5.A HIV-1 recent infection testing algorithm (LAg/VL algorithm), ages 18 months and older, LePHIA 2016-2017



[1]ODn: normalized optical density; [2]mL: milliliter

Figure 2.5.B HIV-1 recent infection testing algorithm (LAg/VL/ARV algorithm), ages 18 months and older, LePHIA 2016-2017



[1]ODn: normalized optical density; [2]mL: milliliter

Detection of Antiretroviral Drug Resistance

HIV resistance to ARVs was assessed for all those HIV-positive participants aged 18 months and older classified as recent HIV infections and a small subset of confirmed long-term infections. In addition, all infants below 18 months of age with confirmed infection were evaluated to determine vertical transmission of ARV-resistant HIV. Mutations in the HIV protease and reverse transcriptase genes that confer ARV drug resistance (according to the Stanford drug resistance database) were detected simultaneously by use of the CDC broadly sensitive in-house genotyping drug resistance assay.

Specimens were sent to CDC in the United States where testing was performed at the International Laboratory Branch, a World Health Organization (WHO) designated Specialized Drug Resistance Laboratory for drug resistance testing.

Detection of Antiretrovirals

Qualitative screening, for detectable concentrations of ARVs, was conducted on DBS specimens from all HIV-positive adults and children by means of high-resolution liquid chromatography coupled with tandem mass spectrometry. The method used for ARV detection was a modified version of the methodology described by Koal et al.[3] This qualitative assay was highly specific, as it separates the parent compound from the fragments, and highly sensitive, with a limit of detection of 0.02 µg/mL for each drug, and a signal-to-noise ratio of at least 5:1 for all drugs. As detection of all ARVs in use at the time of the survey was cost-prohibitive, three ARVs were selected as markers for the most commonly prescribed first- and second-line regimens: efavirenz, nevirapine, and lopinavir. These ARVs were also selected based on their relatively long half-lives, allowing for a longer period of detection following intake.

Detection of ARVs is considered indicative of participant use of a given drug at the time of blood collection. Results below the limit of detection among individuals who self-reported ART use indicate that there was no recent exposure to the regimen and that adherence to a prescribed regimen was sub-optimal, but cannot be interpreted as "not on ART." In addition, given the limited number of ARVs selected for detection, their absence could not rule out the use of other ART regimes that do not include them.

ARV detection was performed by the Division of Clinical Pharmacology of the Department of Medicine at the University of Cape Town in South Africa.

2.6 Data Processing and Analysis

All field data were collected on tablets, transmitted to a central server using a secure virtual private network, and stored in a secure PostgreSQL database. Data cleaning was conducted using SAS 9.4 (SAS Institute Inc. Cary, North Carolina, United States). Laboratory data were cleaned and merged with the final questionnaire database using unique specimen bar codes and study identification numbers.

All results presented in the report are based on weighted estimates unless otherwise noted. Analysis weights account for sample selection probabilities and are adjusted for nonresponse and noncoverage. Nonresponse adjusted weights were calculated for households, individual interviews, and individual blood draws in a hierarchical form. Adjustment for nonresponse for initial individual and blood-level weights was based on the development of weighting adjustment cells defined by a combination of variables that are potential predictors of response and HIV status. The nonresponse adjustment cells were constructed using the Chi-square Automatic Interaction Detector algorithm. The cells were defined based on data from the household interview for the adjustment of individual-level weights, and from both the household and individual interviews for the adjustment of blood sample-level weights. Post-stratification adjustments were implemented to compensate for noncoverage in the sampling process. This final adjustment calibrated the nonresponse-adjusted individual and blood weights to make the sum of each set of weights conform to national population totals by sex and five-year age groups.

Descriptive analyses of RRs, respondent characteristics, HIV prevalence, CD4 count distribution, HIV testing, self-reported HIV status, self-reported ART, VLS, prevention of mother-to-child transmission of HIV (PMTCT) indicators, and sexual behavior were conducted using SAS 9.4.

Incidence estimates were based on the number of HIV infections identified as recent with the HIV-1 LAg Avidity plus VL algorithm, and obtained using the formula recommended by the WHO Incidence Working Group and Consortium for Evaluation and Performance of Incidence Assays, and with assay performance

characteristics of a mean duration of recent infection (MDRI)=130 days (95% CI: 118, 142), a time cutoff (T) = 1.0 year and proportion false recent (PFR) = 0.00.

2.7 Response Rates

Household RRs were calculated using the American Association for Public Opinion Research Response Rate 4 method as the number of complete and incomplete household interviews among all eligible households and those estimated to be eligible among those with unknown eligibility (households not located, not attempted, or unreachable).[4] Vacant and destroyed households, not residential units, and household units with no eligible respondents were considered not eligible and excluded from the calculation.

Individual interview RR were calculated as the number of individuals who were interviewed divided by the number of individuals eligible to participate in the survey. Blood draw RR for adults were calculated as the number of individuals who provided blood divided by the number of individuals who were interviewed. Blood draw RR for children were calculated as the number of individuals who provided blood divided by the number of individuals eligible to participate in the survey.

Of the 10,892 selected households, 9,403 and 8,824 were occupied and interviewed, respectively. The overall household RR (unweighted) was 93.2% (91.2% and 91.4% in urban and peri-urban areas, respectively, and 94.9% in rural areas). After adjusting for differential sampling probabilities and nonresponse, the overall weighted household RR was 93.0% (Table 2.7.A).

A total of 14,028 adults (6,135 men and 7,893 women) were eligible to participate in the survey. A total of 12,887 adults participated in the individual interview: interview RR (weighted) were 86.8% for men and 95.1% for women. Among those adults who were interviewed, 88.2% of men and 91.3% of women also had their blood drawn (weighted, Table 2.7.B).

In LePHIA, children in half of the selected households were eligible for blood draw. Of the 3,118 eligible children aged 0-9 years, 77.6% of boys and 78.7% of girls had their blood drawn (weighted). Of the 1,752 eligible young adolescents aged 10-14 years, 88.1% of young adolescent boys and 89.7% of young adolescent girls completed interviews and of those, 94.1% of young adolescent boys and 94.8% of young adolescent girls had their blood drawn (weighted, Table 2.7.B).

Table 2.7.A Household response rates

Number of households selected, occupied, and interviewed and household response rates (unweighted and weighted), by residence, LePHIA 2016-2017

Result	Residence			Total
	Urban	Peri-urban	Rural	
Household interviews				
Households selected	4,072	737	6,083	10,892
Households occupied	3,646	638	5,119	9,403
Households interviewed	3,344	589	4,891	8,824
Household response rate[1] (unweighted)	91.2	91.4	94.9	93.2
Household response rate[1] (weighted)	91.1	90.6	94.8	93.0

[1]Household response rate was calculated using the American Association for Public Opinion Research (AAPOR) Response Rate 4 (RR4) method: https://www.aapor.org/AAPOR_Main/media/publications/Standard-Definitions20169theditionfinal.pdf.

Table 2.7.B Interview and blood draw response rates

Number of eligible individuals and response rates for individual interviews[1] and blood draws[2] (unweighted and weighted), by residence and sex, LePHIA 2016-2017

	Residence							
	Urban		Peri-urban		Rural		Total	
Result	Male	Female	Male	Female	Male	Female	Male	Female
Eligible individuals, ages 0-9 years								
Number of eligible individuals	465	452	84	104	1,028	985	1,577	1,541
Blood draw response rate (unweighted)	71.4	68.8	76.2	76.9	82.4	85.7	78.8	80.1
Blood draw response rate (weighted)	69.6	67.1	76.7	77.3	81.8	84.9	77.6	78.7
Eligible individuals, ages 10-14 years								
Number of eligible individuals	232	250	70	57	602	541	904	848
Interview response rate (unweighted)	90.9	88.8	87.1	89.5	88.0	91.1	88.7	90.3
Interview response rate (weighted)	90.4	87.9	87.1	88.9	87.2	90.8	88.1	89.7
Blood draw response rate (unweighted)	91.0	91.9	90.2	98.0	96.8	96.1	94.8	95.0
Blood draw response rate (weighted)	90.1	91.8	90.2	98.2	96.4	95.9	94.1	94.8
Eligible individuals, ages 15-24 years								
Number of eligible individuals	700	1,080	183	196	1,276	1,432	2,159	2,708
Interview response rate (unweighted)	89.6	93.3	89.1	95.4	85.1	94.2	86.9	93.9
Interview response rate (weighted)	89.0	93.0	86.9	95.3	84.6	94.3	86.3	93.8
Blood draw response rate (unweighted)	87.7	91.7	87.1	88.2	91.9	94.1	90.1	92.7
Blood draw response rate (weighted)	87.1	91.5	85.1	88.1	91.5	93.7	89.4	92.3
Eligible individuals, ages 15-49 years								
Number of eligible individuals	2,111	2,926	401	470	2,961	3,475	5,473	6,871
Interview response rate (unweighted)	86.6	94.1	84.0	96.4	87.3	95.8	86.8	95.1
Interview response rate (weighted)	86.2	93.8	82.4	96.5	86.8	95.7	86.2	94.9
Blood draw response rate (unweighted)	84.3	89.1	87.8	88.3	91.3	94.2	88.4	91.6
Blood draw response rate (weighted)	83.8	88.8	86.0	86.9	91.2	93.7	87.8	91.0
Eligible individuals, ages 15-59 years								
Number of eligible individuals	2,318	3,253	439	531	3,378	4,109	6,135	7,893
Interview response rate (unweighted)	87.1	94.3	84.5	96.0	88.0	96.1	87.4	95.4
Interview response rate (weighted)	86.6	93.9	83.0	96.3	87.5	96.0	86.8	95.1
Blood draw response rate (unweighted)	84.6	89.0	88.4	88.8	91.7	94.7	88.8	91.9
Blood draw response rate (weighted)	84.2	88.7	86.7	87.5	91.5	94.2	88.2	91.3

[1]Interview response rate = number of individuals interviewed/number of eligible individuals

[2]Blood draw response rate = number of individuals who provided blood/number of individuals interviewed

2.8 References

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4. The American Association for Public Opinion Research (AAPOR). *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys.* 9th edition. AAPOR; 2016. https://www.aapor.org/AAPOR_Main/media/publications/Standard-Definitions20169theditionfinal.pdf. Accessed January 17, 2019.

3 SURVEY HOUSEHOLD CHARACTERISTICS

3.1 Key Findings

- In Lesotho, more than half of households are female-headed.
- About one-fifth (19.9%) of the population in rural areas is aged 50 years or more, compared to 15.7% in peri-urban and 13.0% in urban areas.
- Among female household heads, 41.1% were HIV-positive, as compared to 30.0% of male household heads.
- Of all households, 37.6% had at least one HIV-positive member.

3.2 Background

This chapter describes the characteristics of households surveyed in LePHIA. Household composition is described in terms of sex of the head of household and the size of the household. The age structure of the de facto household population is described by sex as well as area of residence. This chapter also describes the prevalence and composition of households impacted by HIV, which are households with one or more HIV-positive members.

3.3 Household Composition

In Lesotho, fifty-two percent (51.8%) of households reported having a female head and 48.2% reported having a male head. This distribution was similar for urban, peri-urban, and rural areas. The median household size was three members in all areas. The interquartile range (IQR) was two to five for the country as a whole, and in peri-urban and rural areas, but was slightly smaller in urban areas (IQR 1-4). The median number of children and adolescents below the age of 18 years in households was one in all areas, with an IQR of zero to two in urban and peri-urban areas, and was slightly larger in rural areas (IQR 0-3) (Table 3.3.A).

The most populous age group in Lesotho was those aged 15-49 years, who comprised 47% of the de facto household population, whereas children (those aged 0-14 years) comprised 35.9% and adults aged 50 years and older constituted 17.1% (6.6% men and 10.5% women; Figure 3.3.A; Table 3.3.B). The overall sex ratio was 84 male participants for every 100 female participants, with more boys than girls (103:100) aged 0-4 years, but a rapid decline in ratio to 86:100 in older adolescents (those aged 15-19 years), followed by relative stability in adults aged 20-49 years (with overall mean of 79:100), and further reductions in adults above 50 years of age (with overall mean of 63:100).

Overall, there were more children (less than the age of 15 years) and older adults (aged 50 years and older) in the de facto population in rural areas than in urban areas and peri-urban areas. Among the rural population, 39.3% were children compared with 30.7% of the urban population and 34.5% of the peri-urban population (Table 3.3.C). Twenty percent (19.9%) of the rural de facto population was above 50 years of age, in contrast to 15.7% in peri-urban and 13.0% in urban areas. The relative share of men and women aged 15-49 years in rural areas was similar (40.8% and 40.7%, respectively) as in peri-urban areas (50.8% and 49.0%, respectively) but larger for women compared to men in urban areas (58.4% vs. 53.6%).

Table 3.3.A Household composition

Percent distribution of households by sex of head of household; median (Q1, Q3) size of household and median (Q1, Q3) number of children under the age of 18 years, by residence, LePHIA 2016-2017

Characteristic	Residence						Total	
	Urban		Peri-urban		Rural			
Head of household								
Male	48.6	1,617	47.2	283	48.1	2,317	48.2	4,217
Female	51.4	1,727	52.8	306	51.9	2,574	51.8	4,607
Total	100.0	3,344	100.0	589	100.0	4,891	100.0	8,824

Characteristic	Residence						Total	
	Urban		Peri-urban		Rural			
	Median	Q1, Q3	Median	Q1, Q3	Median	Q1, Q3	Median	Q1, Q3
Size of households	3	(1, 4)	3	(2, 5)	3	(2, 5)	3	(2, 5)
Number of children under 18 years of age	1	(0, 2)	1	(0, 2)	1	(0, 3)	1	(0, 2)

Table 3.3.B Distribution of de facto household population by age and sex

Percent distribution of the de facto household population, by five-year age groups and sex, LePHIA 2016-2017

Age	Male		Female		Total	
	Percent	Number	Percent	Number	Percent	Number
0-4	5.8	1,574	5.6	1,536	11.4	3,110
5-9	6.0	1,652	5.9	1,658	11.9	3,310
10-14	6.3	1,738	6.3	1,744	12.6	3,482
15-19	4.3	1,173	5.0	1,360	9.4	2,533
20-24	3.9	1,014	5.2	1,363	9.0	2,377
25-29	3.7	976	4.6	1,217	8.4	2,193
30-34	3.1	823	3.9	1,007	7.0	1,830
35-39	2.6	668	3.0	804	5.6	1,472
40-44	1.9	492	2.5	655	4.4	1,147
45-49	1.5	389	1.8	494	3.3	883
50-54	1.2	316	1.9	509	3.0	825
55-59	1.3	346	1.8	514	3.1	860
60-64	1.4	376	1.9	538	3.3	914
65-69	1.0	289	1.4	401	2.5	690
70-74	0.8	217	1.3	353	2.0	570
75-79	0.6	153	0.9	253	1.4	406
≥80	0.5	144	1.3	366	1.8	510
Total	45.6	12,340	54.4	14,772	100.0	27,112

Table 3.3.C De facto household population by age, sex, and residence

Percent distribution of the household population, by sex, age, and residence, LePHIA 2016-2017

	Urban					
	Male		Female		Total	
Age	Percent	Number	Percent	Number	Percent	Number
0-4	12.5	504	9.6	492	10.9	996
5-14	22.4	921	17.8	926	19.8	1,847
15-49	53.6	2,125	58.4	2,940	56.3	5,065
≥50	11.5	473	14.2	745	13.0	1,218
Total	100.0	4,023	100.0	5,103	100.0	9,126
	Peri-urban					
	Male		Female		Total	
Age	Percent	Number	Percent	Number	Percent	Number
0-4	11.5	95	10.3	101	10.8	196
5-14	25.3	213	22.4	225	23.7	438
15-49	50.8	404	49.0	472	49.8	876
≥50	12.4	107	18.3	187	15.7	294
Total	100.0	819	100.0	985	100.0	1,804
	Rural					
	Male		Female		Total	
Age	Percent	Number	Percent	Number	Percent	Number
0-4	12.9	975	10.7	943	11.7	1,918
5-14	29.6	2,256	25.8	2,251	27.6	4,507
15-49	40.8	3,006	40.7	3,488	40.8	6,494
≥50	16.7	1,261	22.8	2,002	19.9	3,263
Total	100.0	7,498	100.0	8,684	100.0	16,182

Figure 3.3.A Distribution of the de facto population by sex and age, LePHIA 2016-2017

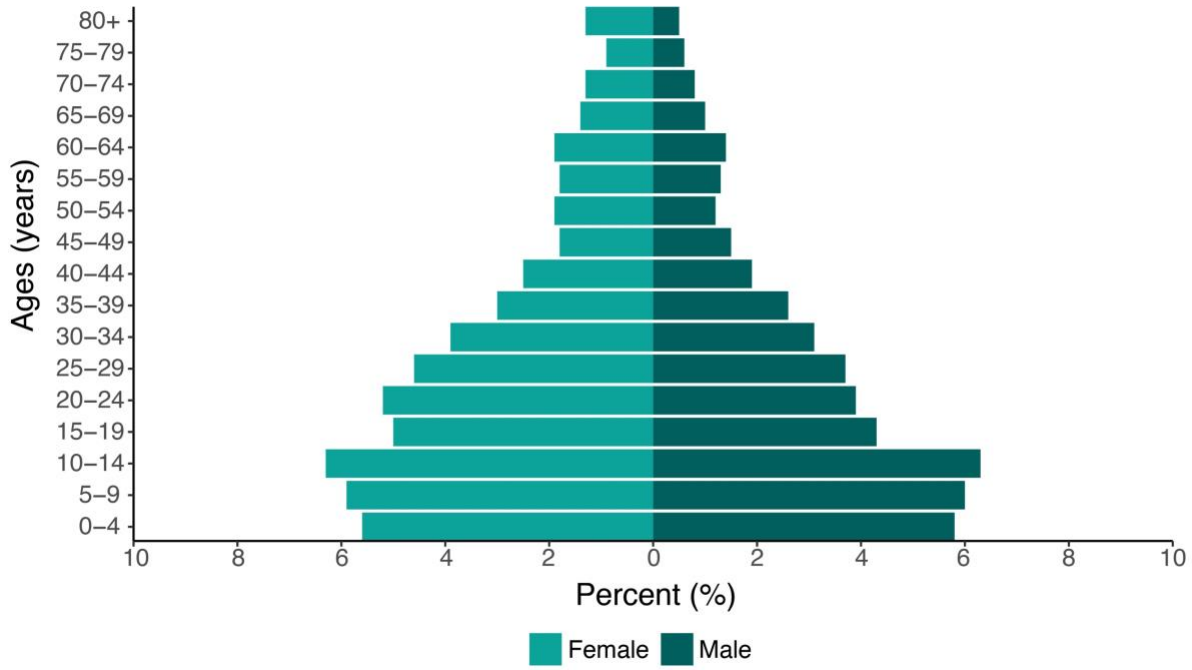
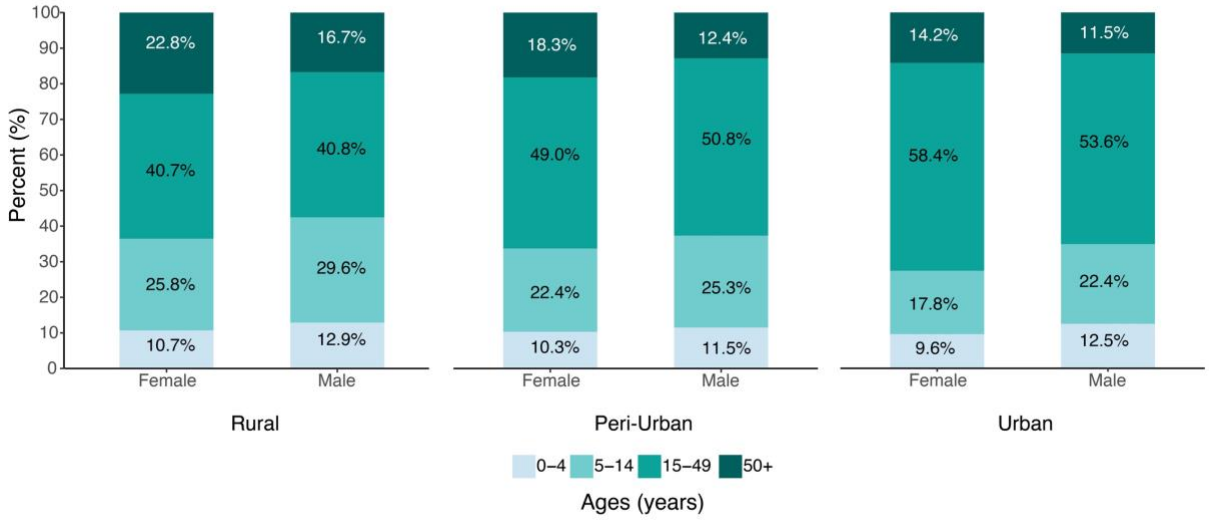


Figure 3.3.B Household population by age, sex, and residence, LePHIA 2016-2017



3.4 Prevalence of HIV-Affected Households

In Lesotho, 37.6% of all households had at least one HIV-positive member (Table 3.4.A). Among these HIV-affected households, 80.5% had only one HIV-positive member, whereas 17.7% had two HIV-positive members, with the remaining 1.8% having three or more HIV-positive members (Table 3.4.B). The distribution was similar for urban, peri-urban, and rural households.

Overall, 36.0% of households in the country had an HIV-positive head of household. Forty-one percent (41.1%) of female-headed households, compared to 30.0% of male-headed households, had the head of household affected by HIV (Table 3.4.C).

Table 3.4.A Prevalence of HIV-affected households

Percentage of households with at least one HIV-positive household member, by residence, LePHIA 2016-2017

Residence	Percent	Number
Urban	38.7	2,782
Peri-urban	34.5	477
Rural	37.1	4,013
Total	37.6	7272

Table 3.4.B HIV-affected households by number of HIV-positive members

Among households with at least one HIV-positive household member, percent distribution of households by number of HIV-positive household members, by residence, LePHIA 2016-2017

Number of HIV-positive household members	Residence							
	Urban		Peri-urban		Rural		Total	
	Percent	Number	Percent	Number	Percent	Number	Percent	Number
1	78.5	836	80.5	138	82.1	1,217	80.5	2,191
2	19.7	208	(18.5)	27	16.0	236	17.7	471
3	*	18	*	2	(1.7)	26	(1.7)	46
4	*	1	*	0	*	2	*	3
5	*	0	*	0	*	0	*	0
≥6	*	0	*	0	*	0	*	0
Total	100.0	1,063	100.0	167	100.0	1,481	100.0	2,711

Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 3.4.C	Prevalence of households with an HIV-positive head of household	
Percentage of households with an HIV-positive head of household, by sex of head of household, LePHIA 2016-2017		
Sex of head of household	Percent	Number
Male	30.0	2,416
Female	41.1	2,852
Total	36.0	5,268

Figure 3.4.A Prevalence of HIV-affected households by residence, LePHIA 2016-2017

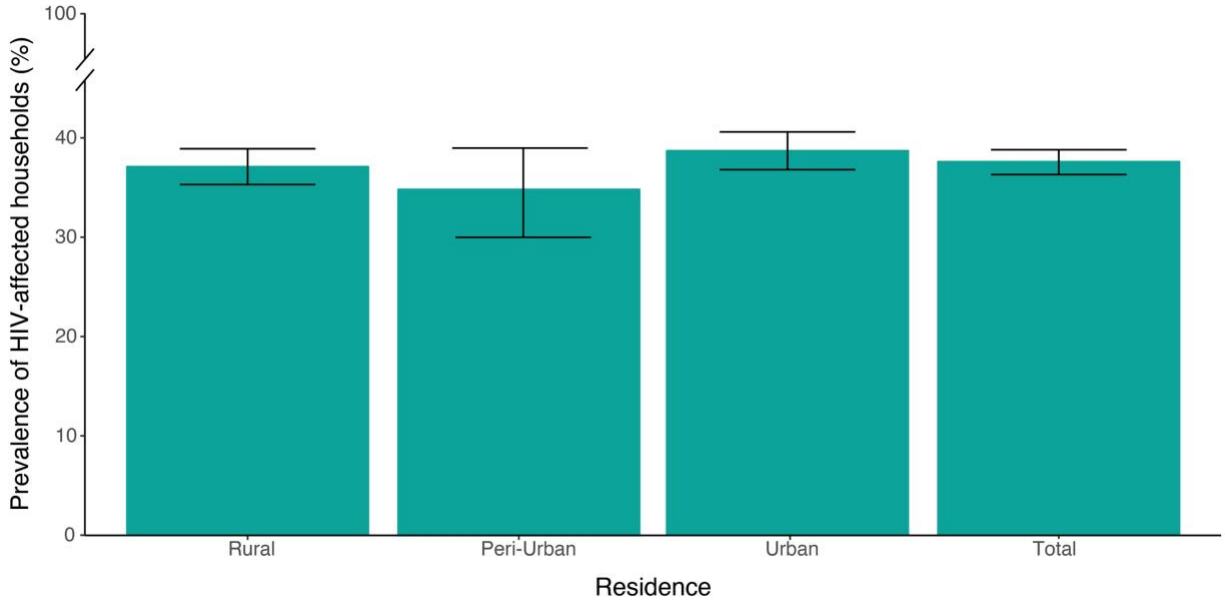
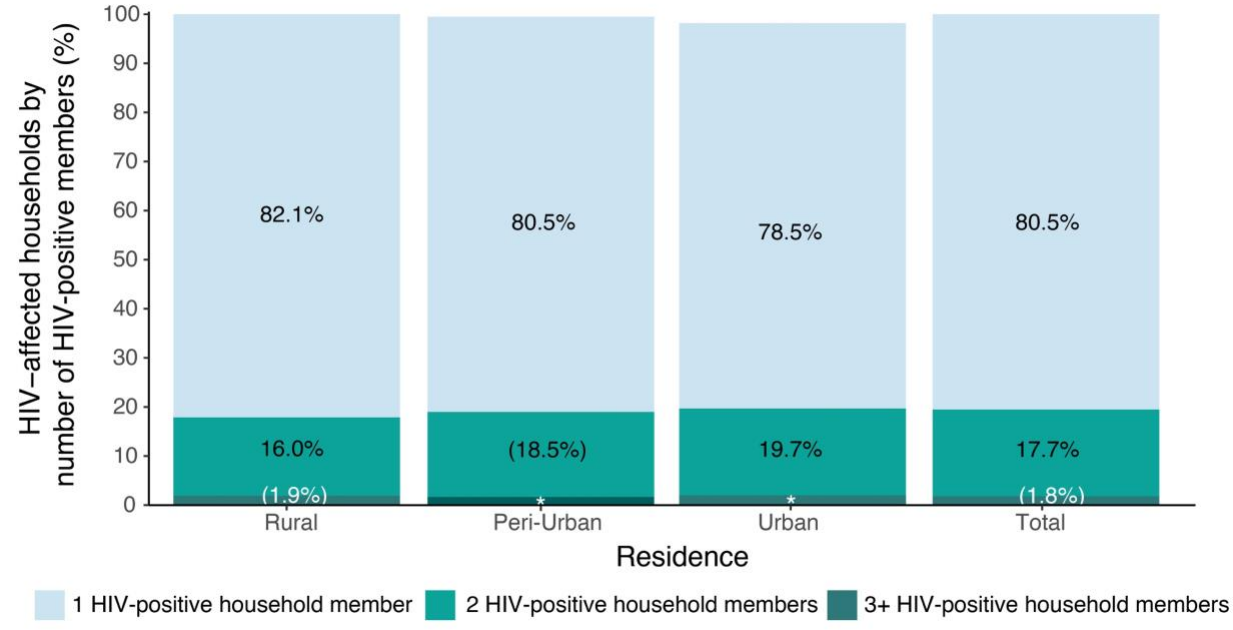
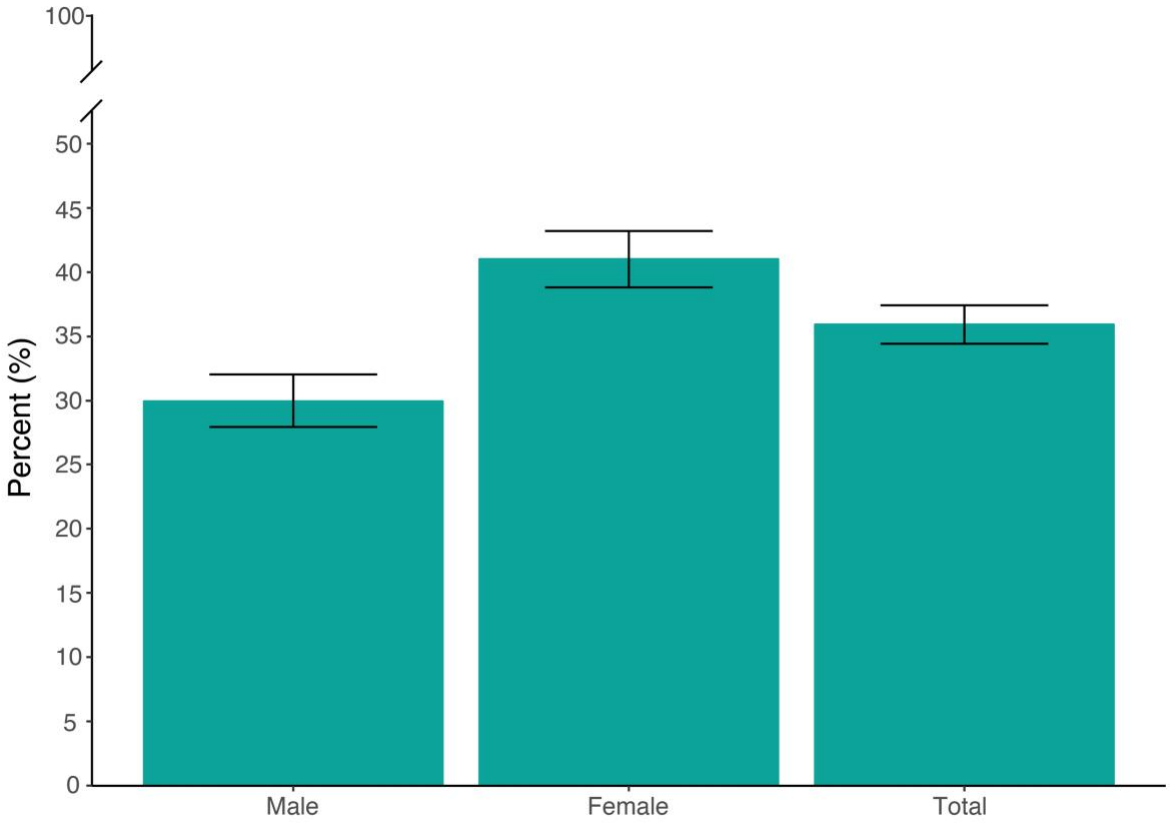


Figure 3.4.B HIV-affected households by number of HIV-positive members and residence, LePHIA 2016-2017



Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
Estimates with an asterisk are based on a very small number (less than 25) of unweighted cases and have been suppressed.

Figure 3.4.C Prevalence of households with an HIV-positive head of household by sex, LePHIA 2016-2017



4 SURVEY RESPONDENT CHARACTERISTICS

4.1 Key Findings

- Over three-quarters of the adult population (those aged 15-59 years) resided in the lowland and foothill districts on Lesotho's northwestern border with South Africa, with nearly one-third living in Maseru (32.0%).
- Overall 95.0% of adult respondents had attended school and school attainment was higher among women relative to men; 49.0% of women reported having attended secondary school compared to 40.5% of men.
- Almost four times as many women (11.0%) were widowed as men (3.1%).
- Almost all (97.5%) young adolescents (those aged 10-14 years) were currently attending school.

4.2 Background

LePHIA assessed key indicators and outcomes for children (those aged 0-14 years), adolescents, and adults. To provide context for these outcomes, this chapter summarizes the basic demographic and socioeconomic characteristics of survey respondents. In this report, most key indicators are stratified according to these characteristics.

4.3 Demographic Characteristics of the Adult Population

The population of Lesotho was fairly evenly distributed between rural and urban areas; 50.6% of adults lived in rural areas while 41.7% and 7.8% resided in urban and peri-urban areas, respectively (Table 4.3.A). The vast majority resided in the lowlands of the country (69.3%). Almost a third of the respondents (32.0%) lived in the district of Maseru, and another 45.8% resided in districts along Lesotho's western border with South Africa (Leribe, Berea, Mafeteng, and Mohale's Hoek).

Over half of the women (51.4%) were married or living with a partner, while only 43.9% of men were married or living with a partner. Near half of men (47.0%) had never been in a conjugal union compared to less than one-third among women (31.1%). While 6.3% of all respondents were currently divorced or separated, women were almost four times as likely to be widowed compared to men (11.0% vs. 3.1%, respectively).

Ninety-five percent of all respondents had some formal schooling but, in general, women had more formal education. Among women, only 1.5% had never attended school compared to 8.6% of men. Approximately 40% of men and women had received primary education, while 40.5% of men and 49.0% of women had attended secondary schools. More than one in ten men and women had attended tertiary (any schooling after secondary school, including college, university and graduate education) institutions.

Most respondents professed their religion as one of many Christian denominations with a predominant share being Catholic (40.7%), Lesotho Evangelical (18.1%), and with 8.3% identifying as Pentecostal and 7.0% as Anglican (Table 4.3.A). Seven percent (7.0%) identified themselves as another, non-Christian, religion.

Table 4.3.A Demographic characteristics of the older adolescent and adult population

Percent distribution of the population aged 15-59 years, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percent	Number	Percent	Number	Percent	Number
Residence						
Urban	40.1	2,019	43.2	3,067	41.7	5,086
Peri-urban	7.6	371	7.9	510	7.8	881
Rural	52.2	2,971	48.9	3,949	50.6	6,920
Ecological zone						
Lowlands	69.2	3,450	69.5	4,852	69.3	8,302
Foothills	9.0	503	7.7	611	8.3	1,114
Mountains	16.2	1,000	16.7	1,459	16.5	2,459
Senqu River Valley	5.6	408	6.1	604	5.9	1,012
District						
Maseru	32.7	1,430	31.3	1,907	32.0	3,337
Mafeteng	8.2	528	8.6	735	8.4	1,263
Mohale's Hoek	5.5	376	6.0	587	5.7	963
Leribe	17.6	886	17.1	1,242	17.4	2,128
Berea	14.1	688	14.4	985	14.3	1,673
Quthing	3.7	275	4.3	415	4.0	690
Butha Buthe	5.6	361	5.1	456	5.3	817
Mokhotlong	4.6	289	4.8	427	4.7	716
Qacha's Nek	2.4	200	2.7	309	2.5	509
Thaba Tseka	5.6	328	5.8	463	5.7	791
Marital status						
Never married / lived together	47.0	2,530	31.1	2,265	39.0	4,795
Married or living together	43.9	2,288	51.4	3,893	47.6	6,181
Divorced or separated	6.1	340	6.5	490	6.3	830
Widowed	3.1	186	11.0	870	7.0	1,056
Education						
No education	8.6	501	1.5	121	5.0	622
Primary	40.5	2,227	38.6	3,031	39.5	5,258
Secondary	40.5	2,121	49.0	3,614	44.7	5,735
College / University	9.2	445	9.6	665	9.4	1,110
Graduate / post-graduate	1.2	60	1.4	93	1.3	153
Wealth quintile						
Lowest	17.4	1,054	17.0	1,432	17.2	2,486
Second	19.4	1,105	17.6	1,427	18.5	2,532
Middle	20.2	1,058	20.0	1,483	20.1	2,541
Fourth	21.2	1,081	21.1	1,515	21.2	2,596
Highest	21.7	1,050	24.4	1,649	23.0	2,699
Religion						
Roman Catholic	42.0	2,198	39.3	2,915	40.7	5,113
Lesotho Evangelical	19.5	1,020	16.6	1,239	18.1	2,259
Anglican	7.3	392	6.6	502	7.0	894
Pentecostal	7.2	390	9.4	735	8.3	1,125
Other Christian	15.4	848	20.1	1,522	17.7	2,370
Other religion	6.4	348	7.6	579	7.0	927
Don't know	2.3	132	(0.3)	28	1.3	160
Age						
15-19	17.7	1,001	17.3	1,247	17.5	2,248
20-24	16.5	875	16.8	1,297	16.6	2,172
25-29	16.0	827	15.6	1,159	15.8	1,986
30-34	14.6	697	13.5	965	14.0	1,662
35-39	11.4	573	10.4	769	10.9	1,342
40-44	8.1	427	8.0	625	8.1	1,052

Table 4.3.A Demographic characteristics of the older adolescent and adult population (continued)

Percent distribution of the population aged 15-59 years, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percent	Number	Percent	Number	Percent	Number
Age (cont.)						
45-49	6.1	352	6.4	474	6.2	826
50-54	5.3	285	6.4	490	5.8	775
55-59	4.3	324	5.7	500	5.0	824
Total 15-24	34.2	1,876	34.0	2,544	34.1	4,420
Total 15-49	90.4	4,752	87.9	6,536	89.2	11,288
Total 15-59	100.0	5,361	100.0	7,526	100.0	12,887

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

4.4 Demographic Characteristics of the Pediatric and Young Adolescent Population

Children younger than 10 years of age accounted for two-thirds (66.0%) of all children participating in the survey. Compared to adults, more children (ages 0-9 years) and young adolescents (ages 10-14 years) resided in rural areas (50.6% vs 62.2%, respectively), and less resided in Maseru (32.0% vs. 24.8%) and Berea (14.3% vs 12.8%) (Tables 4.4.A and 4.4.B). One-fifth of children were found in the Mountains region (20.4%) and the majority lived in the Lowlands (60.9%). The distribution across the five wealth quintiles ranged from 15.3% in the highest wealth quintile to 24.4% in the lowest wealth quintile (Table 4.4.B). The vast majority of young adolescents were currently attending school (97.5%) (Table 4.4.A).

Table 4.4.A Demographic characteristics of the young adolescent population

Percent distribution of the young adolescent population aged 10-14 years, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percent	Number	Percent	Number	Percent	Number
Residence						
Urban	27.8	211	30.7	222	29.2	433
Peri-urban	8.6	61	7.7	51	8.1	112
Rural	63.7	530	61.6	493	62.6	1,023
District						
Maseru	23.6	151	27.5	165	25.5	316
Mafeteng	9.7	87	9.1	80	9.4	167
Mohale's Hoek	8.1	80	7.3	68	7.7	148
Leribe	18.0	131	17.5	125	17.7	256
Berea	13.5	98	11.6	79	12.6	177
Quthing	5.9	56	5.4	51	5.7	107
Butha Buthe	6.1	58	7.0	61	6.6	119
Mokhotlong	(4.9)	46	6.0	53	5.5	99
Qacha's Nek	(3.1)	38	(3.2)	38	3.2	76
Thaba Tseka	7.0	57	(5.5)	46	6.2	103
Education						
Currently attending school	96.3	770	98.7	756	97.5	1,526
Not currently attending school	(3.7)	32	*	10	(2.5)	42
Total 10-14	100.0	802	100.0	766	100.0	1,568

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 4.4.B Demographic characteristics of the pediatric population

Percent distribution of children aged 0-14 years, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percent	Number	Percent	Number	Percent	Number
Age						
0-17 months	8.4	201	8.9	206	8.7	407
18-59 months	23.0	541	22.3	516	22.7	1,057
5-9 years	34.5	772	34.9	758	34.7	1,530
10-14 years	34.0	802	33.9	766	34.0	1,568
Residence						
Urban	29.9	651	31.0	652	30.4	1,303
Peri-urban	7.0	143	7.8	151	7.4	294
Rural	63.1	1,522	61.2	1,443	62.2	2,965
Ecological zone						
Lowlands	61.1	1,311	60.6	1,248	60.9	2,559
Foothills	10.3	245	10.7	244	10.5	489
Mountains	19.8	511	21.0	537	20.4	1,048
Senqu River Valley	8.7	249	7.7	217	8.2	466
District						
Maseru	24.6	461	25.1	449	24.8	910
Mafeteng	9.1	234	9.5	232	9.3	466
Mohale's Hoek	7.8	222	7.5	204	7.6	426
Leribe	18.2	387	18.2	381	18.2	768
Berea	13.4	279	12.1	244	12.8	523
Quthing	5.3	150	5.5	154	5.4	304
Butha Buthe	5.8	161	6.2	163	6.0	324
Mokhotlong	5.4	146	5.9	154	5.6	300
Qacha's Nek	3.1	106	3.1	104	3.1	210
Thaba Tseka	7.2	170	6.8	161	7.0	331
Wealth quintile						
Lowest	24.1	610	24.8	607	24.4	1,217
Second	24.0	570	23.9	556	23.9	1,126
Middle	20.0	445	19.1	417	19.5	862
Fourth	16.9	376	16.7	347	16.8	723
Highest	15.1	312	15.6	310	15.3	622
Total 0-4	31.5	742	31.2	722	31.3	1,464
Total 0-14	100.0	2,316	100.0	2,246	100.0	4,562

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.

5 HIV INCIDENCE

5.1 Key Findings

- Annual incidence of HIV infection among adults (those aged 15-59 years) in Lesotho was 1.10%: 1.22% among women, and 1.00% among men. This corresponds to almost 10,000 new cases of HIV infection annually among adults in the country in 2017.
- Annual incidence was highest in men aged 35-49 years (2.65%) and in older adolescent girls and young women aged 15-24 years (1.49%).

5.2 Background

HIV prevalence is a measure of the relative burden of disease in a population, but is not optimal for measuring acute changes in an HIV epidemic, including changes in HIV transmission. HIV incidence is the measure of new HIV infections in a population over time. It can provide important information on the status of the HIV epidemic and can be used for effective targeted HIV prevention planning in groups that are most vulnerable to recent infection, and to measure the impact of HIV prevention programs. This chapter presents annual estimates of HIV incidence among adults at the national level. For the purposes of this analysis, HIV incidence is expressed as the cumulative incidence or risk of new infections in a 12-month period, which is a close approximation to the instantaneous incidence rate. It is important to note that LePHIA was not powered to estimate incidence at the district level.

Two laboratory-based incidence testing algorithms (HIV-1 LAg avidity plus VL and HIV-1 LAg avidity plus VL and ARV detection) were used to distinguish recent from long-term infection, and incidence estimates were obtained using the formula recommended by the WHO Incidence Working Group and Consortium for Evaluation and Performance of Incidence Assays, and with assay performance characteristics of a MDRI=130 days (95% CI: 118-142), with T=1.0 year and residual PFR=0.00 (see Chapter 2). Survey weights were used for all estimates. All HIV-positive participants aged 18 months and older were tested for recent infection using an HIV-1 LAg avidity assay.

Incidence estimation was based on recent/long-term classification using algorithms with LAg avidity.[1,2,3] The original algorithm incorporated VL results to mitigate misclassification from persons who may be elite controllers or on ART – both groups characterized by low VL. As ART coverage has increased, it has become apparent that some individuals on treatment for long periods of time have the potential to be misclassified by the LAg plus VL algorithm as a recent infection. Although they may have suppressed VL for years, drug resistance or lack of adherence may result in VL ≥ 1000 copies/mL. Based in part on data from multiple PHIA surveys, the updated incidence algorithm includes ARV detection as a second exclusion criteria. The addition of ARV detection is expected to produce more accurate estimates of both HIV incidence and transmitted HIV drug resistance.

5.3 HIV Incidence Among Adults

HIV incidence estimates using LAg avidity and HIV viral load

Using the LAg avidity assay and VL algorithm, estimated annual incidence was 1.47% (95% CI: 0.95%-1.98%) among adults (1.22% among men and 1.74% among women), and 1.55% (95% CI: 0.99%-2.11%) among adults aged 15-49 years. Annual incidence peaked at 3.01% among men aged 35-49 years, and at 2.73% among women aged 35-49 years. HIV incidence was significantly higher among young women aged 15-24 years at 1.81% (95% CI: 0.84%-2.77%) than among men in the same age bracket at 0.13% (95% CI: 0.00%-0.41%. Aside from within this age group, differences between sexes and age groups were not statistically significant. Note that LePHIA was not designed to compare incidence estimates across demographic sub-groups (Table 5.3.A).

HIV incidence estimates using LAg avidity, HIV viral load, and ARV detection

Using the LAg avidity assay, VL and ARV algorithm, estimated incidence was 1.10% (95% CI: 0.68%-1.52%) among adults (1.00% among men and 1.22% among women). This corresponds to approximately 9,835 new cases of HIV in Lesotho in 2017. HIV incidence for adults aged 15-49 years was estimated at 1.19% (95% CI: 0.73%-1.65%; 1.09% among men and 1.31% among women). Annual incidence peaked among men aged 35-49 years (2.65%) and among young women aged 15-24 years (1.49%) (Table 5.3.B).

Table 5.3.A Annual HIV incidence using LAg/VL testing algorithm

Annual incidence of HIV among adults aged 15-49 and 15-59 years, by sex and age, using the limiting antigen (LAg) + viral load (VL), LePHIA 2016-2017

Age	Male		Female		Total	
	Percentage annual incidence[1]	95% CI	Percentage annual incidence[1]	95% CI	Percentage annual incidence[1]	95% CI
15-24	0.13	(0.00, 0.41)	1.81	(0.84, 2.77)	0.93	(0.42, 1.44)
25-34	1.87	(0.44, 3.28)	1.18	(0.16, 2.18)	1.57	(0.67, 2.47)
35-49	3.01	(0.60, 5.35)	2.73	(0.87, 4.55)	2.88	(1.24, 4.49)
15-49	1.33	(0.55, 2.09)	1.81	(1.12, 2.50)	1.55	(0.99, 2.11)
15-59	1.22	(0.51, 1.94)	1.74	(1.11, 2.37)	1.47	(0.95, 1.98)

[1]Relates to Global AIDS Monitoring indicator 3.1: HIV incidence.

Table 5.3.B Annual HIV incidence using LAg/VL/ARV testing algorithm

Annual incidence of HIV among adults aged 15-49 and 15-59 years, by sex and age, using the limiting antigen (LAg) + viral load (VL) + antiretrovirals (ARVs) algorithm, , LePHIA 2016-2017

Age	Male		Female		Total	
	Percentage annual incidence[1]	95% CI	Percentage annual incidence[1]	95% CI	Percentage annual incidence[1]	95% CI
15-24	0.13	(0.00, 0.41)	1.49	(0.58, 2.39)	0.78	(0.31, 1.25)
25-34	1.39	(0.14, 2.63)	1.18	(0.16, 2.18)	1.30	(0.49, 2.10)
35-49	2.65	(0.55, 4.70)	1.11	(0.00, 2.26)	1.95	(0.69, 3.19)
15-49	1.09	(0.45, 1.72)	1.31	(0.73, 1.90)	1.19	(0.73, 1.65)
15-59	1.00	(0.42, 1.59)	1.22	(0.69, 1.74)	1.10	(0.68, 1.52)

[1]Relates to Global AIDS Monitoring indicator 3.1: HIV incidence.

5.4 Gaps and Unmet Needs

- Incidence remains high and supports the need for a holistic approach to HIV prevention and treatment. Programs should be designed to use proven interventions while remaining flexible enough to incorporate scientific breakthroughs.
- Effective interventions include combination prevention programs at the focus and scale necessary to stop transmission, especially among middle-aged men, adolescent girls, and young women.

5.5 References

1. Duong YT, Kassanjee R, Welte A, et al. Recalibration of the limiting antigen avidity EIA to determine mean duration of recent infection in divergent HIV-1 subtypes. *PLoS One.* 2015 Feb 24;10(2):e0114947. doi: 10.1371/journal.pone. Recalibration 0114947.

2. Kassanjee R, McWalter TA, Bärnighausen T, Welte A. A new general biomarker-based incidence estimator. *Epidemiology.* 2012 Sep;23(5):721-8. doi: 10.1097/EDE.0b013e3182576c07.

3. Duong YT, Qiu M, De AK, et al. Detection of recent HIV-1 infection using a new limiting-antigen avidity assay: potential for HIV-1 incidence estimates and avidity maturation studies. *PLoS One*. 2012;7(3):e33328. doi: 10.1371/journal.pone.0033328. Epub 2012 Mar 27.

6 HIV PREVALENCE

6.1 Key Findings

- Prevalence of HIV infection among adults (aged 15-59 years) in Lesotho was 25.6%: 30.4% among women and 20.8% among men. This corresponds to approximately 306,000 adults living with HIV in the country.
- HIV prevalence among women aged 15-39 years was significantly higher than among men in the same age bracket. The greatest disparity was among those aged 20-24 years where prevalence in women (16.7%) was four times higher than in men (4.0%).
- Prevalence in women peaks five years earlier than in men: 49.9% in women aged 35-39 years and 46.9% in men aged 40-44 years.
- The burden of HIV infection varies across the country. HIV prevalence among adults ranged from 17.8% in Butha Buthe to 29.3% in Mohale's Hoek.

6.2 Background

This chapter presents representative estimates of prevalence of HIV infection among adults at the national and district level by selected demographic and behavioral characteristics. Additionally, this chapter presents an estimate of the number of HIV-positive adults living in Lesotho. HIV prevalence testing was conducted in each household using a serological rapid diagnostic testing algorithm based on Lesotho's national guidelines, with laboratory confirmation of seropositive samples using a supplemental assay. Appendix A describes the sample design and Appendix C provides estimates of sampling errors. Appendix B describes the LePHIA HIV testing methodology.

6.3 Adult HIV Prevalence by Demographic Characteristics

Overall, HIV prevalence among adults was 25.6%: 20.8% in men and 30.4% in women. Prevalence in urban areas was 26.9%, compared to 24.9% in rural areas (Table 6.3.A). HIV prevalence among adults aged 15-49 years was 24.3%: 19.1% in men and 29.7% in women (Table 6.3.B).

Among adults, HIV prevalence was 37.6% among those with no education, 20.4% among those with secondary school education and 13.4% among those with a tertiary education. HIV prevalence in women with no education was 41.7%, 25.3% among those with secondary education and 17.6% with a tertiary education. HIV prevalence in men with no education was 36.9%, 14.4% among those with secondary education and 9.1% among those with a tertiary education (Table 6.3.A). Among those who have never married—a group dominated by younger segments of the population—HIV prevalence was 11.2%. Among those who were married or living with a partner, HIV prevalence was 29.1%. In comparison, HIV prevalence was considerably higher (49.5%) among those who were divorced or separated and twice as high (58.8%) among those who were widowed compared to those who were married or living together (Table 6.3.A, Figure 6.3.A).

HIV prevalence among women of childbearing age (ages 15-49 years) who were pregnant at the time of the survey, was estimated at 24.4%, compared to 29.9% among women of childbearing age who were not pregnant (Table 6.3.B). However, the women who were pregnant were overall younger than the women of childbearing age who were not.

Table 6.3.A HIV prevalence by demographic characteristics: Ages 15-59 years

Prevalence of HIV among adults aged 15-59 years, by sex and selected demographic characteristics, LePHIA 2016-2017

Characteristic	Male		Female		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Residence						
Urban	21.7	1,709	31.6	2,729	26.9	4,438
Peri-urban	19.0	328	27.1	453	23.1	781
Rural	20.3	2,725	29.8	3,738	24.9	6,463
Ecological zone						
Lowlands	20.9	3,014	31.1	4,381	26.0	7,395
Foothills	20.4	447	28.1	570	23.9	1,017
Mountains	21.4	924	28.1	1,386	24.8	2,310
Senqu River Valley	18.7	377	30.9	583	25.0	960
District						
Maseru	24.0	1,215	31.7	1,684	27.8	2,899
Mafeteng	19.8	498	32.9	701	26.3	1,199
Mohale's Hoek	25.1	341	33.0	548	29.3	889
Leribe	18.5	803	29.1	1,152	23.7	1,955
Berea	16.8	599	29.1	878	23.0	1,477
Quthing	21.1	243	31.0	399	26.5	642
Butha Buthe	12.6	299	23.3	416	17.8	715
Mokhotlong	23.2	274	29.0	405	26.1	679
Qacha's Nek	21.5	174	29.7	284	25.9	458
Thaba Tseka	22.1	316	30.3	453	26.2	769
Marital status						
Never married / lived together	7.3	2,243	17.1	2,035	11.2	4,278
Married or living together	28.8	2,024	29.4	3,607	29.1	5,631
Divorced or separated	47.5	309	51.3	454	49.5	763
Widowed	54.8	171	59.9	818	58.8	989
Education						
No education	36.9	464	41.7	108	37.6	572
Primary	26.7	2,055	40.0	2,870	33.2	4,925
Secondary	14.4	1,847	25.3	3,330	20.4	5,177
College / University	9.1	352	17.6	537	13.4	889
Graduate / post-graduate	(10.0)	39	13.1	73	11.7	112
Wealth quintile						
Lowest	23.5	975	29.5	1,372	26.5	2,347
Second	21.8	1,028	32.8	1,354	27.0	2,382
Middle	25.2	946	34.0	1,387	29.6	2,333
Fourth	19.4	948	31.5	1,369	25.4	2,317
Highest	14.9	852	25.4	1,419	20.5	2,271
Religion						
Roman Catholic	20.8	1,965	30.7	2,675	25.6	4,640
Lesotho Evangelical	22.4	907	29.7	1,139	25.7	2,046
Anglican	20.9	343	26.4	463	23.5	806
Pentecostal	19.3	344	32.1	677	26.6	1,021
Other Christian	19.3	757	29.6	1,405	25.1	2,162
Other religion	21.8	306	33.2	531	28.0	837
Don't know	18.2	114	(37.1)	26	20.7	140
Pregnancy status						
Currently pregnant	NA	NA	24.5	276	NA	NA
Not currently pregnant	NA	NA	30.6	6,622	NA	NA
Total 15-59	20.8	4,762	30.4	6,920	25.6	11,682

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

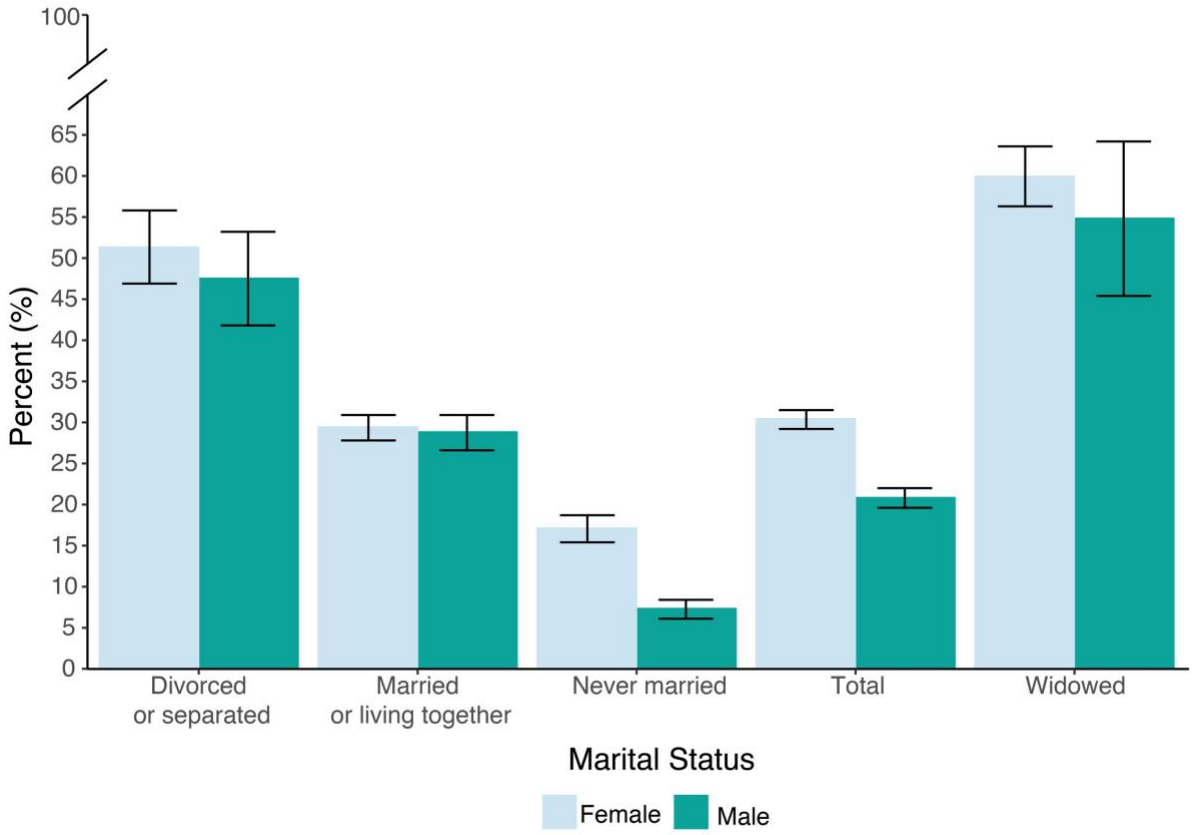
Table 6.3.B HIV prevalence by demographic characteristics: Ages 15-49 years

Prevalence of HIV among adults aged 15-49 years, by sex and selected demographic characteristics, LePHIA 2016-2017

Characteristic	Male		Female		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Residence						
Urban	20.7	1,541	31.2	2,455	26.1	3,996
Peri-urban	16.8	296	26.9	400	21.8	696
Rural	18.3	2,362	28.7	3,135	23.2	5,497
District						
Maseru	22.6	1,096	31.1	1,495	26.7	2,591
Mafeteng	17.9	436	32.2	595	24.8	1,031
Mohale's Hoek	22.3	288	33.0	440	27.7	728
Leribe	16.9	715	29.3	1,020	22.9	1,735
Berea	15.0	539	28.2	772	21.6	1,311
Quthing	16.8	198	30.9	323	24.4	521
Butha Buthe	11.5	258	21.6	362	16.4	620
Mokhotlong	22.9	243	27.1	363	25.0	606
Qacha's Nek	20.1	146	29.4	236	24.9	382
Thaba Tseka	20.7	280	28.5	384	24.5	664
Marital status						
Never married / lived together	7.0	2,207	16.6	1,985	10.8	4,192
Married or living together	27.9	1,644	30.3	3,176	29.2	4,820
Divorced or separated	49.5	245	52.7	389	51.2	634
Widowed	59.3	89	67.8	435	66.0	524
Education						
No education	35.4	342	39.5	80	36.0	422
Primary	24.9	1,752	40.8	2,224	32.3	3,976
Secondary	13.7	1,740	24.9	3,122	19.8	4,862
College / University	7.8	326	17.0	498	12.4	824
Graduate / post-graduate	(11.5)	34	14.7	65	13.2	99
Wealth quintile						
Lowest	21.5	828	27.7	1,162	24.5	1,990
Second	20.1	894	31.9	1,131	25.5	2,025
Middle	23.4	855	33.6	1,209	28.4	2,064
Fourth	18.0	864	31.5	1,215	24.5	2,079
Highest	13.4	746	25.0	1,257	19.6	2,003
Religion						
Roman Catholic	19.3	1,736	29.7	2,312	24.2	4,048
Lesotho Evangelical	20.9	799	29.4	964	24.7	1,763
Anglican	19.8	294	26.3	382	22.9	676
Pentecostal	17.8	305	31.4	594	25.5	899
Other Christian	17.2	667	29.4	1,242	24.0	1,909
Other religion	19.7	279	31.5	471	26.0	750
Don't know	16.8	97	*	21	19.2	118
Pregnancy status						
Currently pregnant	NA	NA	24.4	273	NA	NA
Not currently pregnant	NA	NA	29.9	5,695	NA	NA
Total 15-49	19.1	4,199	29.7	5,990	24.3	10,189

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Figure 6.3.A HIV prevalence by marital status: Ages 15-59 years, LePHIA 2016-2017



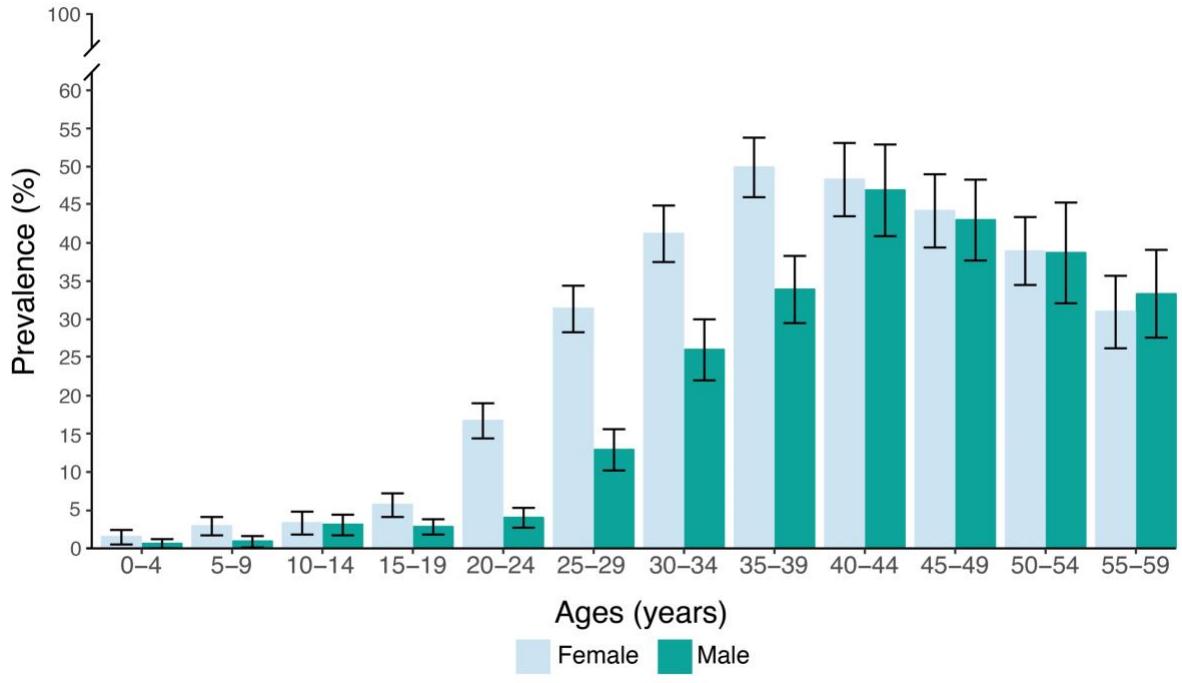
6.4 Adult HIV Prevalence by Age and Sex

Among adults, HIV prevalence ranged from 4.2% in those aged 15-19 years (older adolescents) to 47.6% in those aged 40-44 years. The peak HIV prevalence in women was 49.9%, observed in those aged 35-39 years, while the peak HIV prevalence in men was 46.9%, observed in those aged 40-44 years. Prevalence among women increased sharply, rising from 5.7% in older adolescents to 16.7% in young women aged 20-24 years, and to 31.4% among women aged 25-29 years. Prevalence among male participants did not display a similar pattern of increase, as it was 2.8% in older adolescents aged 15-19 years, 4.0% in young men aged 20-24 years, and 12.9% among men aged 25-29 years. Men reached similar levels of HIV prevalence as women after the age of 40 years. The pattern in HIV prevalence mirrored the pattern seen in HIV incidence (Table 6.4.A; Figure 6.4.A).

Differences in HIV prevalence between men and women were significant in those aged 15-39 years. There were not significant differences by sex above the age of 39 years. Among young people aged 15-24 years, HIV prevalence was almost three times as high among young women (11.1%) as among young men (3.4%), and HIV prevalence among those aged 20-24 years was four times greater in young women (16.7%) compared to young men (4.0%) (Table 6.4.A; Figure 6.4.A).

Table 6.4.A	HIV prevalence by age and sex					
Prevalence of HIV among persons ages 0-59 years, by sex and age, LePHIA 2016-2017						
	Male		Female		Total	
Age	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
0-17 months	0.6	157	1.0	158	0.8	315
18-59 months	0.6	423	1.6	401	1.1	824
5-9	0.9	663	2.9	676	1.9	1,339
10-14	3.1	760	3.3	728	3.2	1,488
Total 0-4	0.6	580	1.5	559	1.0	1,139
Total 0-14	1.5	2,003	2.6	1,963	2.1	3,966
15-19	2.8	921	5.7	1,156	4.2	2,077
20-24	4.0	769	16.7	1,202	10.4	1,971
25-29	12.9	707	31.4	1,054	22.0	1,761
30-34	26.0	611	41.2	857	33.3	1,468
35-39	33.9	497	49.9	703	41.5	1,200
40-44	46.9	379	48.3	574	47.6	953
45-49	43.0	315	44.2	444	43.6	759
50-54	38.7	261	38.9	459	38.8	720
55-59	33.3	302	31.0	471	32.0	773
Total 15-24	3.4	1,690	11.1	2,358	7.2	4,048
Total 15-49	19.1	4,199	29.7	5,990	24.3	10,189
Total 15-59	20.8	4,762	30.4	6,920	25.6	11,682

Figure 6.4.A HIV prevalence by age and sex, LePHIA 2016-2017



6.5 Adult HIV Prevalence by Ecological Zone and District

Although there was no difference in prevalence by ecological zone, the burden of HIV varied by district. HIV prevalence among adults ranged from 17.8% in Butha Buthe to 29.3% in Mohale's Hoek (Figures 6.5.A and 6.5.B, Table 6.3.A). This geographic pattern was similar when disaggregated by sex (Table 6.3.A), with prevalence ranging from 12.6% to 25.1% in men and 23.3% to 33.0% in women in Butha Buthe and Mohale's Hoek, respectively.

Figure 6.5.A HIV prevalence among adults, by district, LePHIA 2016-2017 (map)

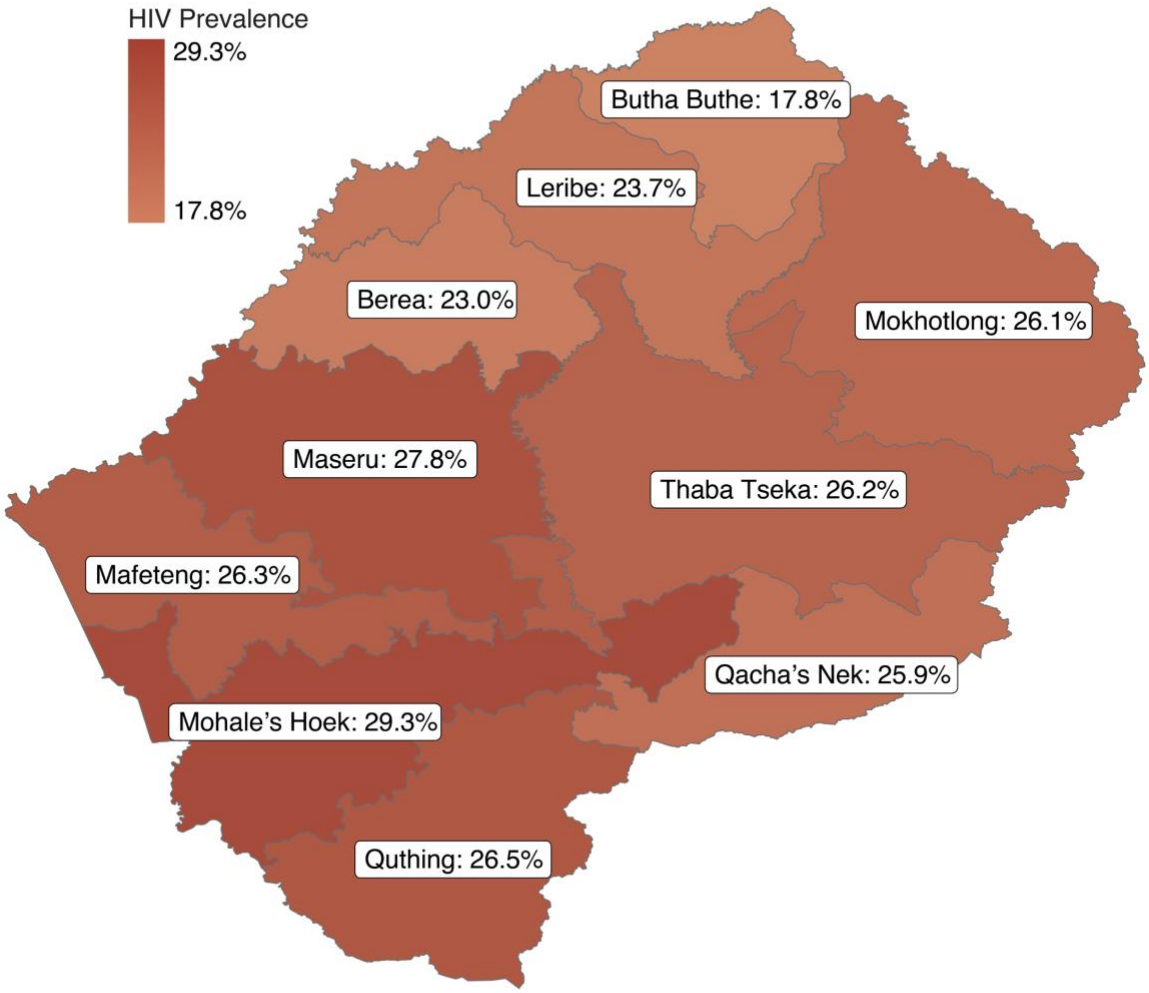
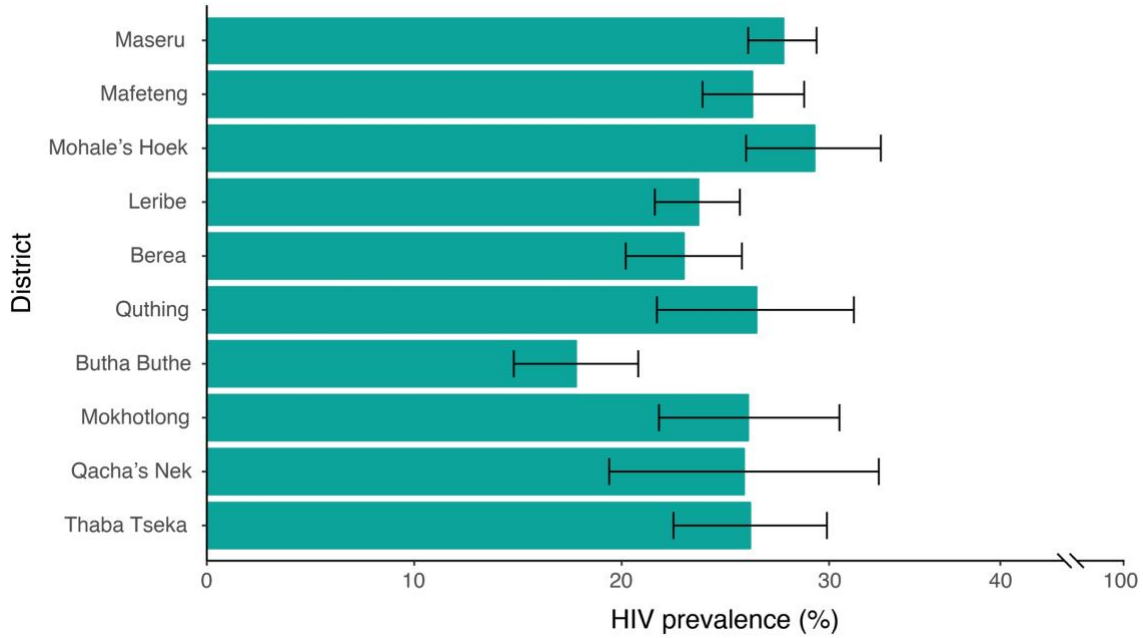


Figure 6.5.B HIV prevalence among adults, by district, LePHIA 2016-2017 (bar graph)



6.6 Gaps and Unmet Needs

- In conjunction with HIV incidence data, the high prevalence of HIV in Lesotho suggests high rates of HIV acquisition and indicates the need for more efficient targeted prevention efforts.
- Women are acquiring HIV at a young age, whereas men attain similar levels in their 30s.
- Future prevention campaigns should focus on age-disparate sexual partnerships as data reflected younger ages of infection among women compared to men. Other prevention efforts should focus on understanding factors driving the epidemic in males.

7 HIV TESTING

7.1 Key Findings

- In Lesotho, 86.9% of adults (those aged 15-59 years) had ever tested for HIV and received their results (91.3% of women and 82.7% of men). The lowest proportion of ever having tested was seen among older adolescents (those aged 15-19) at 72.9%.
- The majority (56.1%) of adults reported having HIV testing and receiving results in the 12 months preceding the survey (61.7% of women and 50.5% of men).
- Among adults who tested HIV positive in LePHIA, 5.1% reported that they had never been tested or that they had never received their results.
- Lower testing rates were associated with having no education among men, and never having been married for both sexes.
- There was variation in HIV testing uptake across the districts, with a significantly higher proportion of respondents reporting ever having tested for HIV in the lowlands.

7.2 Background

HIV testing is necessary for awareness of HIV status and is a critical component of HIV epidemic control targets. Awareness of HIV-positive status is the first step to engagement with HIV care and treatment services, accessing ART, prevention counseling for HIV-positive and HIV-negative individuals to reduce risk of HIV transmission or acquisition, and access to screening services for other co-morbidities.

In 2016, following the release of WHO 2015 consolidated guidelines, the MOH reviewed and adopted the HIV Testing Services Guidelines in order to meet the UNAIDS 90-90-90 global HIV targets. As the first target was the diagnosis of 90% of people living with HIV, this supported the MOH recommendation that every person, regardless of perceived risk, receive an HIV test every 12 months. HIV testing services have since been rolled out to all public health facilities with over 80% of people tested at health facilities and the remainder during community campaigns. There has been more than a three-fold increase in the number of people tested (including adults, adolescents, and children) per annum between 2011 and 2016.

In its new National HIV & AIDS Strategic Plan (NSP) 2018/19 – 2022/23, the MOH included the ambitious goal of increasing the proportion of people living with HIV who know their HIV status to 95%, for all ages by 2023.[1]

Data presented in this section pertain to participants aged 15-59 years who reported ever receiving an HIV test and receiving the test results. Results on HIV testing in the last 12 months and receiving the test results are also presented to understand frequent or recent testing and adherence to national guidelines.

7.3 Self-Reported HIV Testing Among Adults

Overall, 86.9% of the adult population reported that they had ever tested for HIV and received their results; however, only 56.1% indicated that they had done so in the 12 months preceding the survey. It

should be noted that this figure includes those who reported knowing their HIV-positive status for at least a year. Significantly more women (91.3%) than men (82.7%) reported past testing, and testing in the past year: 61.7% of women and 50.5% of men reported testing for HIV in the 12 months preceding the survey (Tables 7.3.A, 7.3.B, and 7.3.C).

Among men of most age groups, over 80% reported ever testing for HIV and receiving their results; however, only 73.2% of older adolescent boys aged 15-19 years reported ever testing for HIV and receiving results. The percentage of men testing for HIV and receiving results in the year preceding the survey ranged from 42.2% among those aged 40-44 years to 58.4% among those aged 25-29 years. HIV testing was also low at 43.9% among older adolescent boys aged 15-19 years (Table 7.3.A).

Among women, only 72.5% of older adolescents aged 15-19 years were ever tested compared to 92.2% among young women aged 20-24 years and 98.2% among women aged 30-34 years. Over 60% of women aged 15-59 years were tested for HIV in the year preceding the survey, ranging from 50.2% among women aged 40-44 years to 75.9% among young women aged 20-24 years (Table 7.3.B; Figure 7.3.A).

Among adults who tested HIV positive in LePHIA, 5.1% reported that they had never been tested or that they had never received their results. A significantly higher proportion of HIV-positive men (8.6%) had never been tested, compared to women (2.8%).

There was variation in lifetime and recent HIV testing by education status. Overall, among adults, 78.4% of those with no education had ever tested for HIV and received their results and 44.0% tested in the year preceding the survey. Among adults with secondary education, 88.1% reported ever testing and 59.5% reported testing in the year preceding the survey. Among men with secondary education, 86.2% reported having ever tested for HIV and receiving their results and 54.6% tested in the year preceding the survey, compared to 77.1% and 42.3% of men with no education, respectively. There was a similar trend among women—among those with secondary education, 89.7% ever tested for HIV and 63.6% tested for HIV in the year preceding the survey, slightly higher than the 85.7% and 54.2%, respectively, reported by women with no education—though the confidence intervals overlapped (Tables 7.3.A, 7.3.B, and 7.3.C).

People never married/living together showed a significantly lower ever tested rate (78.5%) compared to those who were married/living together (92.5%), divorced or separated (91.0%), and widowed (93.4%). Among men, almost nine out of 10 of those who were married or cohabitating, divorced or separated, or widowed (87.1%, 85.5%, and 89.8% respectively) reported ever testing for HIV. Percentages of tested were even higher among women: 97.1% of married or cohabitating women, 96.2% of divorced or separated, and 94.4% of widowed women reported ever testing for HIV. Among both men and women, less than 80% of those who were never married or lived together had ever tested (77.9% and 79.4%, respectively). When looking at recent testing, people never married/lived together showed a significantly lower testing rate (50.2%) compared to people married/living together (62.7%). Divorced/separated (51.1%) and widowed (48.3%) adults had similar recent testing rates as those who were never married/lived together (Tables 7.3.A, 7.3.B, and 7.3.C).

In rural areas, self-reported HIV testing was lower (84.6%) compared to urban (89.0%) and peri-urban (91.1%) areas in adults. However, there was no significant difference in recent testing. The proportion reporting ever testing for HIV was significantly higher in the lowlands (88.3%) than in the other zones, and varied across the districts where it ranged from 77.4% in Mokhotlong to 89.4% in Berea. A similar pattern

was observed for differences by district for recent testing, but there were no significant differences by ecological zone (Tables 7.3.A, 7.3.B, and 7.3.C).

Table 7.3.A Self-reported HIV testing: Men

Percentage of men aged 15-59 years who ever received HIV testing and received their test results, and percentage who received HIV testing and received their test results in the past 12 months, by result of PHIA survey HIV test and selected demographic characteristics, LePHIA 2016-2017

Characteristic	Percentage who ever received HIV testing and received results	Percentage who received HIV testing in the prior 12 months and received results[1]	Number
Result of PHIA survey HIV test			
HIV positive	91.4	36.5	1,009
HIV negative	80.3	54.2	3,735
Not tested	82.2	51.1	592
Residence			
Urban	87.4	53.3	2,008
Peri-urban	89.8	56.4	371
Rural	78.0	47.5	2,957
Ecological zone			
Lowlands	85.0	51.4	3,433
Foothills	77.9	48.5	500
Mountains	76.7	49.3	996
Senqu River Valley	78.0	46.1	407
District			
Maseru	86.5	52.4	1,420
Mafeteng	80.7	51.0	525
Mohale's Hoek	78.9	50.5	375
Leribe	80.2	48.6	883
Berea	88.4	56.2	685
Quthing	75.8	44.4	274
Butha Buthe	76.4	44.0	361
Mokhotlong	73.0	45.3	287
Qacha's Nek	75.8	43.4	199
Thaba Tseka	81.4	48.4	327
Marital status			
Never married / lived together	77.9	47.7	2,519
Married or living together	87.1	54.3	2,275
Divorced or separated	85.5	48.4	339
Widowed	89.8	44.7	186
Education			
No education	77.1	42.3	497
Primary	77.8	47.9	2,214
Secondary	86.2	54.6	2,116
College / University	92.5	52.0	442
Graduate / post-graduate	87.9	48.7	60
Wealth quintile			
Lowest	73.6	46.1	1,048
Second	80.9	49.9	1,101
Middle	83.3	51.6	1,054
Fourth	85.9	53.0	1,078
Highest	88.0	51.3	1,042
Religion			
Roman Catholic	82.7	51.2	2,191
Lesotho Evangelical	84.6	51.8	1,012
Anglican	83.7	50.6	390
Pentecostal	81.3	53.9	387
Other Christian	83.6	49.6	845
Other religion	81.8	46.9	347
Don't know	68.7	37.3	131
Age			
15-19	73.2	43.9	993
20-24	81.3	55.0	874
25-29	84.0	58.4	827
30-34	84.8	55.7	690
35-39	87.6	49.9	572

Table 7.3.A Self-reported HIV testing: Men (continued)

Percentage of men aged 15-59 years who ever received HIV testing and received their test results, and percentage who received HIV testing and received their test results in the past 12 months, by result of PHIA survey HIV test and selected demographic characteristics, LePHIA 2016-2017

Characteristic	Percentage who ever received HIV testing and received results	Percentage who received HIV testing in the prior 12 months and received results[1]	Number
Age (cont.)			
40-44	88.6	42.2	426
45-49	84.3	44.5	350
50-54	84.8	45.5	283
55-59	84.8	45.4	321
Total 15-24	77.1	49.3	1,867
Total 25-34	84.4	57.1	1,517
Total 35-49	87.1	46.2	1,348
Total 15-49	82.4	51.0	4,732
Total 15-59	82.7	50.5	5,336

[1]Relates to PEPFAR HTS_TST. A description of PEPFAR indicators can be found at https://www.pepfar.gov/documents/organization/263233.pdf

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 7.3.B Self-reported HIV testing: Women

Percentage of women aged 15-59 years who ever received HIV testing and received their test results, and percentage who received HIV testing and received their test results in the past 12 months, by result of survey HIV test and selected demographic characteristics, LePHIA 2016-2017

Characteristic	Percentage who ever received HIV testing and received results	Percentage who received HIV testing in the prior 12 months and received results[1]	Number
Result of PHIA survey HIV test			
HIV positive	97.2	36.7	2,169
HIV negative	89.3	72.8	4,731
Not tested	85.6	64.3	595
Residence			
Urban	90.5	58.3	3,053
Peri-urban	92.3	66.9	510
Rural	91.8	63.9	3,932
Ecological zone			
Lowlands	91.5	60.3	4,831
Foothills	92.6	66.8	604
Mountains	89.8	65.0	1,456
Senqu River Valley	91.1	61.7	604
District			
Maseru	92.2	60.0	1,900
Mafeteng	92.9	61.2	729
Mohale's Hoek	93.4	64.8	584
Leribe	91.4	65.2	1,236
Berea	90.4	60.7	981
Quthing	89.3	58.4	415
Butha Buthe	89.6	60.5	453
Mokhotlong	81.6	55.4	425
Qacha's Nek	88.7	63.0	309
Thaba Tseka	94.9	68.4	463
Marital status			
Never married / lived together	79.4	54.0	2,256
Married or living together	97.1	69.9	3,883
Divorced or separated	96.2	53.7	488
Widowed	94.4	49.3	860
Education			
No education	85.7	54.2	121
Primary	92.9	59.0	3,021
Secondary	89.7	63.6	3,598

Table 7.3.B Self-reported HIV testing: Women (continued)

Percentage of women aged 15-59 years who ever received HIV testing and received their test results, and percentage who received HIV testing and received their test results in the past 12 months, by result of survey HIV test and selected demographic characteristics, LePHIA 2016-2017

Characteristic	Percentage who ever received HIV testing and received results	Percentage who received HIV testing in the prior 12 months and received results[1]	Number
Education (cont.)			
College / University	92.8	63.7	660
Graduate / post-graduate	97.1	66.1	93
Wealth quintile			
Lowest	90.6	65.7	1,428
Second	93.8	64.9	1,421
Middle	91.8	60.8	1,475
Fourth	92.1	60.9	1,511
Highest	88.7	57.9	1,640
Religion			
Roman Catholic	91.6	62.9	2,907
Lesotho Evangelical	91.1	60.8	1,230
Anglican	90.0	61.1	500
Pentecostal	92.3	62.7	734
Other Christian	91.4	61.2	1,514
Other religion	90.1	58.6	576
Don't know	(83.2)	(56.2)	28
Age			
15-19	72.5	53.6	1,246
20-24	92.2	75.9	1,294
25-29	97.8	73.7	1,157
30-34	98.2	62.7	964
35-39	96.8	55.8	763
40-44	97.5	50.2	619
45-49	92.7	52.2	469
50-54	91.6	53.2	485
55-59	90.1	55.8	498
Total 15-24	82.2	64.6	2,540
Total 25-34	98.0	68.6	2,121
Total 35-49	96.0	53.1	1,851
Total 15-49	91.3	62.7	6,512
Total 15-59	91.3	61.7	7,495

[1]Relates to PEPFAR HTS_TST.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

Table 7.3.C Self-reported HIV testing: Total

Percentage of adults aged 15-59 years who ever received HIV testing and received their test results, and percentage who received HIV testing and received their test results in the past 12 months, by result of survey HIV test and selected demographic characteristics, LePHIA 2016-2017

Characteristic	Percentage who ever received HIV testing and received results	Percentage who received HIV testing in the prior 12 months and received results[1]	Number
Result of PHIA survey HIV test			
HIV positive	94.9	36.6	3,178
HIV negative	84.6	63.0	8,466
Not tested	83.6	56.7	1,187
Residence			
Urban	89.0	55.9	5,061
Peri-urban	91.1	61.7	881
Rural	84.6	55.4	6,889
Ecological zone			
Lowlands	88.3	55.9	8,264
Foothills	84.7	56.9	1,104
Mountains	83.4	57.3	2,452

Table 7.3.C Self-reported HIV testing: Total (continued)

Percentage of adults aged 15-59 years who ever received HIV testing and received their test results, and percentage who received HIV testing and received their test results in the past 12 months, by result of survey HIV test and selected demographic characteristics, LePHIA 2016-2017

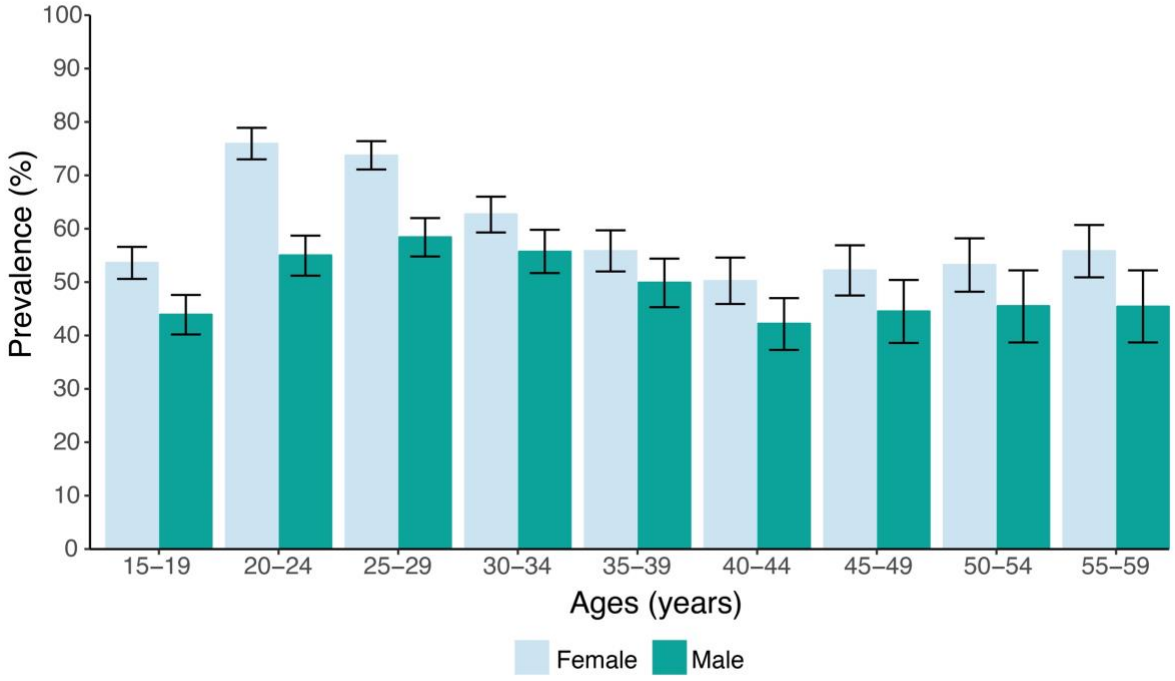
Characteristic	Percentage who ever received HIV testing and received results	Percentage who received HIV testing in the prior 12 months and received results[1]	Number
Ecological zone (cont.)			
Senqu River Valley	84.8	54.2	1,011
District			
Maseru	89.3	56.1	3,320
Mafeteng	86.9	56.2	1,254
Mohale's Hoek	86.5	58.0	959
Leribe	85.7	56.8	2,119
Berea	89.4	58.5	1,666
Quthing	83.0	51.9	689
Butha Buthe	82.7	51.8	814
Mokhotlong	77.4	50.4	712
Qacha's Nek	82.6	53.7	508
Thaba Tseka	88.3	58.6	790
Marital status			
Never married / lived together	78.5	50.2	4,775
Married or living together	92.5	62.7	6,158
Divorced or separated	91.0	51.1	827
Widowed	93.4	48.3	1,046
Education			
No education	78.4	44.0	618
Primary	85.2	53.3	5,235
Secondary	88.1	59.5	5,714
College / University	92.7	58.0	1,102
Graduate / post-graduate	92.8	58.0	153
Wealth quintile			
Lowest	82.0	55.8	2,476
Second	87.0	57.0	2,522
Middle	87.5	56.1	2,529
Fourth	89.0	56.9	2,589
Highest	88.4	54.8	2,682
Religion			
Roman Catholic	87.0	56.8	5,098
Lesotho Evangelical	87.6	55.9	2,242
Anglican	86.7	55.6	890
Pentecostal	87.6	58.9	1,121
Other Christian	88.0	56.2	2,359
Other religion	86.3	53.2	923
Don't know	70.7	39.8	159
Age			
15-19	72.9	48.7	2,239
20-24	86.8	65.5	2,168
25-29	90.8	65.9	1,984
30-34	91.3	59.1	1,654
35-39	92.0	52.7	1,335
40-44	93.0	46.1	1,045
45-49	88.6	48.5	819
50-54	88.5	49.7	768
55-59	87.8	51.4	819
Total 15-24	79.7	56.9	4,407
Total 25-34	91.0	62.7	3,638
Total 35-49	91.5	49.6	3,199
Total 15-49	86.8	56.8	11,244
Total 15-59	86.9	56.1	12,831

Table 7.3.C	Self-reported HIV testing: Total (conclusion)

[1]Relates to PEPFAR HTS_TST

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

Figure 7.3.A Proportion of adults who self-reported having received an HIV test in the last 12 months, by age and sex, LePHIA 2016-2017



7.4 Gaps and Unmet Needs

- Although the majority of the population tested for HIV at some point in their lives, the frequency of recent testing was lower. Approximately 40% of men and women had not received HIV testing in the last 12 months. There is need to increase the frequency of testing in the general population.
- There was a significant difference in testing coverage between rural and urban areas and across the districts.
- There was an important deficit in reaching men with HIV testing services, with less than half of young men having tested in the past year.

7.5 References

1. Lesotho Ministry of Health. *National HIV & AIDS Strategic Plan 2018/19 – 2022/23*. Maseru: Lesotho Ministry of Health; 2018.

8 HIV Diagnosis and Treatment

8.1 Key Findings

- Among HIV-positive adults (aged 15-59 years), 77.2% reported prior awareness of their HIV status, with significantly less awareness in men (71.0%) than women (81.5%).
- Overall, 69.6% of HIV-positive adults reported ART use (63.5% of men; 73.8% of women).
- Awareness of HIV status and ART use increased with age, differed across the districts, and was highest among widowed adults.
- Concordance between self-report of ART and detection of ARVs was high, with 94.8% of those who reported current ART use having detectable ARVs in the blood. However, self-report of HIV status was less accurate, with detection of ARVs among 16.6% of those who reported no previous HIV diagnosis.

8.2 Background

Recent studies have proven that treating people living with HIV at higher CD4 counts improves immune recovery, decreases the incidence of non-AIDS events and comorbidities and mortality, and reduces sexual and vertical transmission through reduction in VL.[1] In 2016, after extensive review of evidence of both the clinical and population-level benefits of expanding ART, the WHO changed their recommendation to support a policy of "Treatment for All," regardless of CD4 count.[1,2] By November 2017, almost all countries in sub-Saharan Africa had adopted this policy, despite the challenges in ensuring uptake and implementation.[2]

The Government of Lesotho was one of the first to adopt this new strategy, with the publication and implementation of the Fifth Edition of the National ART Guidelines in 2016.[3] Since these guidelines were published, Lesotho has become more ambitious and now aims to provide ART for 95% of those diagnosed by 2023.[4] This chapter describes HIV diagnosis and treatment status among the population of HIV-positive adults by age, sex, region, and other demographic characteristics.

8.3 Self-Reported Diagnosis and Treatment Status Among HIV-Positive Adults

Awareness of HIV-Positive Status

Among HIV-positive adults, based on self-report, 22.8% were unaware of their HIV-positive status. Significantly more men were unaware of their status than women (29.0% of men and 18.5% of women).

Awareness of HIV status increased with age. Among HIV-positive men, the percentage of those who were unaware of their HIV status ranged from 54.8% among those aged 25-29 years to 12.8% among those aged 55-59 years. Among HIV-positive women, the percentage unaware of their HIV status ranged from 39.9% among those aged 20-24 years to only 9.0% among those aged 40-44 years.

Awareness did not differ by urban or rural areas but did differ by district. Among HIV-positive men, the percentage of those who were unaware of their HIV status was very high (43.2%) in Mokhotlong, but was much lower (19.4%) in Berea. Similar differences across the districts were seen in women: 29.4%

were unaware of their status in Mokhotlong compared to 10.5% in Thaba Tseka (Tables 8.3.A, 8.3.B, and 8.3.C).

Among married and cohabitating HIV-positive adults, 21.8% were unaware of their HIV status, while among those who had never married/lived together or divorced/separated, 30.4% and 28.0%, respectively, were unaware. Very few widowed people (14.0%) living with HIV were not previously diagnosed (Table 8.3.C).

Awareness of HIV and ART status

Overall, 69.6% of HIV-positive adults reported ART use. A significantly lower percentage of men (63.5%) reported ART use compared with women (73.8%). Of those aware of their status, only 7.6% were not on ART, with no difference between men and women.

Similarly, self-reported ART use increased with age. The percentage of all HIV-positive men who reported ART use ranged from 40.8% among those aged 20-29 years to 83.5% among those aged 55-59 years, while the percentage of HIV-positive women on ART ranged from 54.4% among those aged 20-24 years to 83.8% among those aged 40-44 years. Overall, only 54.8% of those aged 15-19 years, 51.8% of those aged 20-24 years, and 60.9% of those aged 25-29 years, reported ART use.

Among married and cohabitating HIV-positive adults, 70.2% were on ART: 64.2% of men and 75.2% of women. Reported ART use was lower among those who were not cohabitating with a partner overall and for men, but it was significantly higher in divorced women (70.3%) compared to women who had never married (63.8%) (Tables 8.3.A, 8.3.B, and 8.3.C). Widowed participants had the highest reported ART use at 79.6%: 76.3% in men and 80.5% in women. The reported use of ART also varied by district, with the lowest proportion in Mokhotlong (56.5%) and the highest in Berea (75.0%).

The percentages of those who reported awareness of their status, but not taking ART, were highest in urban areas (8.8%), in Maseru (10.2%), among young men aged 20-24 years (17.6%), and women aged 30-34 years (11.9%).

Table 8.3.A HIV treatment status: Men

Percent distribution of HIV-positive men aged 15-59 years by self-reported HIV diagnosis and treatment status, by selected demographic characteristics, LePHIA 2016-2017

Characteristic	Unaware of HIV status	Aware of HIV status: Not on ART	Aware of HIV status: On ART[1]	Total	Number
Residence					
Urban	26.9	8.7	64.4	100.0	377
Peri-urban	26.8	2.4	70.8	100.0	63
Rural	30.9	7.3	61.8	100.0	577
District					
Maseru	28.5	11.0	60.5	100.0	299
Mafeteng	21.9	10.3	67.7	100.0	101
Mohale's Hoek	29.6	4.6	65.8	100.0	91
Leribe	28.0	3.0	68.9	100.0	153
Berea	19.4	4.8	75.8	100.0	106
Quthing	36.3	1.7	62.0	100.0	50
Butha Buthe	(35.5)	(9.0)	(55.5)	(100.0)	41
Mokhotlong	43.2	11.3	45.5	100.0	64
Qacha's Nek	(30.0)	(4.9)	(65.0)	(100.0)	38
Thaba Tseka	40.7	3.5	55.7	100.0	74
Marital status					
Never married / lived together	35.6	4.7	59.6	100.0	168

Table 8.3.A HIV treatment status: Men (continued)

Percent distribution of HIV-positive men aged 15-59 years by self-reported HIV diagnosis and treatment status, by selected demographic characteristics, LePHIA 2016-2017

Characteristic	Unaware of HIV status	Aware of HIV status		Total	Number
		Not on ART	On ART[1]		
Marital status (cont.)					
Married or living together	27.0	8.8	64.2	100.0	596
Divorced or separated	36.8	5.5	57.6	100.0	148
Widowed	15.8	7.9	76.3	100.0	98
Education					
No education	29.7	5.7	64.6	100.0	167
Primary	29.9	7.8	62.3	100.0	554
Secondary	26.4	8.9	64.7	100.0	259
College / University	(33.9)	(2.7)	(63.4)	(100.0)	31
Graduate / post-graduate	*	*	*	*	4
Wealth quintile					
Lowest	32.3	8.2	59.4	100.0	241
Second	22.8	7.6	69.6	100.0	232
Middle	36.3	7.2	56.4	100.0	233
Fourth	30.3	8.0	61.7	100.0	178
Highest	18.9	6.5	74.6	100.0	132
Religion					
Roman Catholic	28.8	7.5	63.7	100.0	423
Lesotho Evangelical	30.9	8.9	60.1	100.0	208
Anglican	29.4	5.6	65.0	100.0	73
Pentecostal	20.1	10.5	69.3	100.0	68
Other Christian	29.4	6.8	63.8	100.0	154
Other religion	24.4	6.2	69.4	100.0	64
Don't know	*	*	*	*	22
Age					
15-19	(46.7)	(3.0)	(50.3)	(100.0)	26
20-24	(41.5)	(17.6)	(40.8)	(100.0)	32
25-29	54.8	4.3	40.8	100.0	93
30-34	39.8	9.6	50.6	100.0	164
35-39	32.6	8.8	58.6	100.0	176
40-44	20.2	9.5	70.3	100.0	176
45-49	15.5	5.4	79.1	100.0	141
50-54	13.0	4.2	82.8	100.0	105
55-59	12.8	3.7	83.5	100.0	104
Total 15-24	43.8	11.3	44.9	100.0	58
Total 15-49	32.2	8.3	59.5	100.0	808
Total 15-59	29.0	7.5	63.5	100.0	1,017

[1]Relates to Global AIDS Monitoring indicator 1.2: People living with HIV on antiretroviral therapy, and PEPFAR TX_CURR_NAT / SUBNAT

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 8.3.B HIV treatment status: Women

Percent distribution of HIV-positive women aged 15-59 years by self-reported HIV diagnosis and treatment status, by selected demographic characteristics, LePHIA 2016-2017

Characteristic	Unaware of HIV status	Aware of HIV status		Total	Number
		Not on ART	On ART[1]		
Residence					
Urban	19.6	8.8	71.6	100.0	900
Peri-urban	20.9	7.0	72.1	100.0	131
Rural	17.2	6.6	76.2	100.0	1,141
District					
Maseru	20.3	9.6	70.1	100.0	562

Table 8.3.B HIV treatment status: Women (continued)

Percent distribution of HIV-positive women aged 15-59 years by self-reported HIV diagnosis and treatment status, by selected demographic characteristics, LePHIA 2016-2017

Characteristic	Unaware of HIV status	Aware of HIV status		Total	Number
		Not on ART	On ART[1]		
District (cont.)					
Mafeteng	17.4	7.8	74.8	100.0	236
Mohale's Hoek	15.1	5.7	79.3	100.0	188
Leribe	15.8	6.3	77.9	100.0	341
Berea	17.3	8.1	74.6	100.0	271
Quthing	24.8	1.8	73.4	100.0	125
Butha Buthe	19.7	9.7	70.6	100.0	104
Mokhotlong	29.4	5.7	64.9	100.0	122
Qacha's Nek	19.6	6.0	74.4	100.0	87
Thaba Tseka	10.5	6.1	83.4	100.0	136
Marital status					
Never married / lived together	27.0	9.2	63.8	100.0	366
Married or living together	17.4	7.4	75.2	100.0	1,076
Divorced or separated	20.3	9.3	70.3	100.0	241
Widowed	13.5	6.0	80.5	100.0	489
Education					
No education	(25.8)	(8.8)	(65.4)	(100.0)	45
Primary	15.1	7.8	77.1	100.0	1,148
Secondary	23.0	7.1	69.9	100.0	861
College / University	14.8	9.3	75.8	100.0	106
Graduate / post-graduate	*	*	*	*	12
Wealth quintile					
Lowest	17.7	6.7	75.6	100.0	411
Second	15.5	5.7	78.8	100.0	454
Middle	18.1	7.3	74.6	100.0	483
Fourth	20.8	8.7	70.5	100.0	438
Highest	20.1	9.5	70.4	100.0	383
Religion					
Roman Catholic	19.0	8.4	72.7	100.0	852
Lesotho Evangelical	16.9	5.9	77.2	100.0	347
Anglican	19.6	8.8	71.6	100.0	129
Pentecostal	16.8	9.0	74.2	100.0	225
Other Christian	18.1	7.6	74.4	100.0	431
Other religion	22.2	5.4	72.4	100.0	177
Don't know	*	*	*	*	10
Age					
15-19	34.6	8.1	57.2	100.0	63
20-24	39.9	5.7	54.4	100.0	208
25-29	22.7	7.8	69.4	100.0	340
30-34	16.9	11.9	71.2	100.0	373
35-39	13.5	8.0	78.5	100.0	357
40-44	9.0	7.1	83.8	100.0	291
45-49	13.9	6.5	79.6	100.0	201
50-54	16.4	5.5	78.1	100.0	187
55-59	15.7	1.0	83.3	100.0	152
Total 15-24	38.6	6.3	55.1	100.0	271
Total 15-49	18.9	8.3	72.8	100.0	1,833
Total 15-59	18.5	7.6	73.8	100.0	2,172

[1]Relates to Global AIDS Monitoring indicator 1.2: People living with HIV on antiretroviral therapy, and PEPFAR TX_CURR_NAT / SUBNAT

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

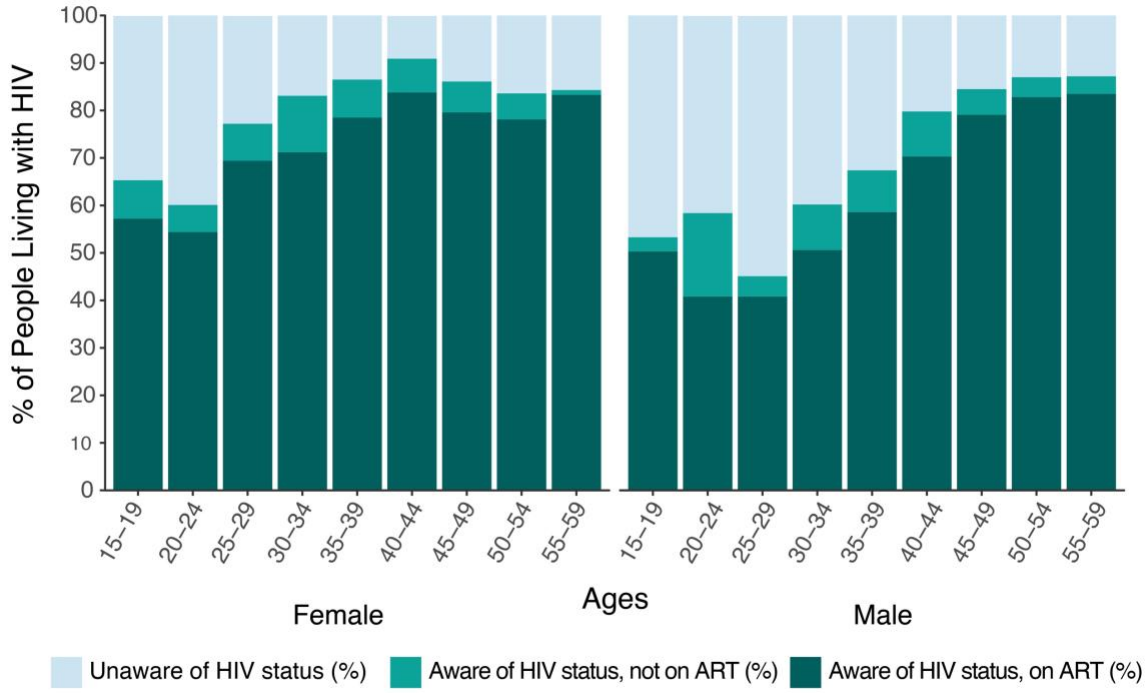
Table 8.3.C HIV treatment status: Total

Percent distribution of HIV-positive persons ages 15-59 years by self-reported HIV diagnosis and treatment status, by selected demographic characteristics, LePHIA 2016-2017

Characteristic	Unaware of HIV status	Aware of HIV status		Total	Number
		Not on ART	On ART[1]		
Residence					
Urban	22.5	8.8	68.8	100.0	1,277
Peri-urban	23.3	5.1	71.6	100.0	194
Rural	23.0	6.9	70.1	100.0	1,718
District					
Maseru	23.9	10.2	65.9	100.0	861
Mafeteng	19.1	8.7	72.1	100.0	337
Mohale's Hoek	21.0	5.2	73.7	100.0	279
Leribe	20.7	5.0	74.3	100.0	494
Berea	18.1	6.9	75.0	100.0	377
Quthing	29.0	1.8	69.2	100.0	175
Butha Buthe	25.5	9.4	65.1	100.0	145
Mokhotlong	35.4	8.1	56.5	100.0	186
Qacha's Nek	23.7	5.6	70.8	100.0	125
Thaba Tseka	23.2	5.0	71.7	100.0	210
Marital status					
Never married / lived together	30.4	7.4	62.2	100.0	534
Married or living together	21.8	8.0	70.2	100.0	1,672
Divorced or separated	28.0	7.6	64.4	100.0	389
Widowed	14.0	6.4	79.6	100.0	587
Education					
No education	29.1	6.2	64.7	100.0	212
Primary	21.2	7.8	71.0	100.0	1,702
Secondary	24.1	7.7	68.2	100.0	1,120
College / University	21.2	7.1	71.7	100.0	137
Graduate / post-graduate	*	*	*	*	16
Wealth quintile					
Lowest	24.3	7.4	68.3	100.0	652
Second	18.6	6.5	74.8	100.0	686
Middle	25.9	7.3	66.8	100.0	716
Fourth	24.5	8.4	67.1	100.0	616
Highest	19.7	8.5	71.8	100.0	515
Religion					
Roman Catholic	23.1	8.0	68.9	100.0	1,275
Lesotho Evangelical	23.5	7.3	69.2	100.0	555
Anglican	24.1	7.4	68.6	100.0	202
Pentecostal	17.8	9.5	72.7	100.0	293
Other Christian	21.9	7.3	70.8	100.0	585
Other religion	23.0	5.7	71.3	100.0	241
Don't know	(40.1)	(1.9)	(58.0)	(100.0)	32
Age					
15-19	38.8	6.4	54.8	100.0	89
20-24	40.2	8.0	51.8	100.0	240
25-29	32.3	6.8	60.9	100.0	433
30-34	26.1	11.0	62.9	100.0	537
35-39	21.7	8.3	70.0	100.0	533
40-44	14.6	8.3	77.1	100.0	467
45-49	14.6	6.0	79.4	100.0	342
50-54	14.9	4.9	80.2	100.0	292
55-59	14.4	2.2	83.4	100.0	256
Total 15-24	39.8	7.5	52.7	100.0	329
Total 15-49	24.3	8.3	67.5	100.0	2,641
Total 15-59	22.8	7.6	69.6	100.0	3,189

[1]Relates to Global AIDS Monitoring indicator 1.2: People living with HIV on antiretroviral therapy, and PEPFAR TX_CURR_NAT / SUBNAT.
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed

Figure 8.3.A Proportion of HIV-positive adults reporting awareness of their HIV-positive status and antiretroviral therapy (ART) status, by age and sex, LePHIA 2016-2017



8.4 Concordance of Self-Reported Treatment Status Versus Laboratory ARV Data

LePHIA determined the presence of three ARVs in blood samples (efavirenz, nevirapine, and lopinavir) as markers of first- and second-line regimens prescribed in the country at the time of the survey. Overall, ARVs were detected in 70.9% of all HIV-positive adults (67.9% among men and 73.1% among women). Only 5.2% of those who reported current use of ARVs did not have detection of any ARV (3.5% among men and 6.1% among women). Of those who reported previous diagnosis, but no ART use, 12.7% had detectable ARVs (14.2% of men and 11.6% of women). Among those who reported that they had not been previously diagnosed, 16.6% had detectable ARVs (19.1% among men and 14.0% among women) (Tables 8.4.A, 8.4.B, and 8.4.C).

Table 8.4.A Concordance of self-reported treatment status versus presence of antiretrovirals (ARVs): Men

Percent distribution of HIV-positive men aged 15-59 years by presence of detectable ARVs versus self-reported ARV treatment (ART) status, LePHIA 2016-2017

	ARV status			
Characteristic	Not detectable	Detectable	Total	Number
Self-reported treatment status				
Not previously diagnosed	80.9	19.1	100.0	284
Previously diagnosed, not on ART	85.8	14.2	100.0	75
Previously diagnosed, on ART	3.5	96.5	100.0	654
Total 15-24	42.6	57.4	100.0	57
Total 15-49	36.4	63.6	100.0	805
Total 15-59	32.1	67.9	100.0	1,014

[1]ARV detection assay included only efavirenz, lopinavir, and nevirapine.
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.

Table 8.4.B Concordance of self-reported treatment status versus presence of antiretrovirals (ARVs): Women

Percent distribution of HIV-positive women aged 15-59 years by presence of detectable ARVs versus self-reported ARV treatment (ART) status, LePHIA 2016-2017

Characteristic	ARV status		Total	Number
	Not detectable	Detectable		
Self-reported treatment status				
Not previously diagnosed	86.0	14.0	100.0	371
Previously diagnosed, not on ART	88.4	11.6	100.0	155
Previously diagnosed, on ART	6.1	93.9	100.0	1,619
Total 15-24	45.6	54.4	100.0	269
Total 15-49	28.4	71.6	100.0	1,815
Total 15-59	26.9	73.1	100.0	2,150

[1]ARV detection assay included only efavirenz, lopinavir, and nevirapine.
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.

Table 8.4.C Concordance of self-reported treatment status versus presence of antiretrovirals (ARVs): Total

Percent distribution of HIV-positive adults aged 15-59 years by presence of detectable ARVs versus self-reported ARV treatment (ART) status, LePHIA 2016-2017

Characteristic	ARV status		Total	Number
	Not detectable	Detectable		
Self-reported treatment status				
Not previously diagnosed	83.4	16.6	100.0	655
Previously diagnosed, not on ART	87.3	12.7	100.0	230
Previously diagnosed, on ART	5.2	94.8	100.0	2,273
Total 15-24	44.9	55.1	100.0	326
Total 15-49	31.6	68.4	100.0	2,620
Total 15-59	29.1	70.9	100.0	3,164

[1]ARV detection assay included only efavirenz, lopinavir, and nevirapine.
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.

8.5 Gaps and Unmet Needs

- Reaching and diagnosing those living with HIV, particularly men and young people (those aged 15-24 years) was the major gap found by LePHIA. Almost half of HIV-positive young people were not on ART.
- Significant differences were seen across districts in terms of awareness of HIV status and ART use once aware of HIV status. Further study is required to understand the disparity in regional coverage of key interventions.
- Persistent stigma may have contributed to the discordance between self-reported HIV, treatment status and ARVs detected in the blood.

8.6 References

1. World Health Organization. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach. Geneva: World Health Organization; 2016.

2. World Health Organization. Treat all: policy adoption and implementation status in countries. Geneva: World Health Organization; 2017.

3. Lesotho Ministry of Health. National guidelines on the use of antiretroviral therapy for HIV prevention and treatment, 5th edition. Maseru: Lesotho Ministry of Health; 2016. https://aidsfree.usaid.gov/sites/default/files/lesotho_art_2016.pdf. Accessed October 29, 2018.

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9 VIRAL LOAD SUPPRESSION

9.1 Key Findings

- In Lesotho, 67.6% of all HIV-positive adults (aged 15-59 years) had VLS: 63.4% among men and 70.5% among women.
- As with awareness of HIV status and use of ART, the proportion of those who had VLS varied significantly by district.
- After the age of 34 years, VLS increased markedly in both men and women.

9.2 Background

The MOH has adopted a policy of routine VL monitoring as the preferred approach to monitor the treatment response for people living with HIV on ART by increasing laboratory capacity to conduct VL testing. VLS is a key indicator of treatment success in HIV-positive individuals. For the purposes of LePHIA, VLS is defined as VL less than 1,000 HIV RNA copies per mL of plasma. As per its updated NSP,[1] the Government of Lesotho aims to attain 95-95-95 targets by 2023 with targeted VLS rates increased to 95% among those receiving ART. This chapter describes VLS among the population of HIV-positive adults by age, sex, region, and other demographic characteristics.

9.3 Adult Viral Load Suppression by Select Demographic Characteristics

Overall, 67.6% of HIV-positive adults had VLS, which was significantly lower in men (63.4%) than in women (70.5%). The proportion with VLS was highest among those who reported ART use (88.3%) and lowest among those who reported previous diagnosis, but no ART use (17.1%). Twenty-one (21.2%) percent of HIV-positive adults who reported no previous HIV diagnosis had VLS (Table 9.3.A).

Although VLS did not differ by urban vs. rural residence, or by ecological zone, there was significant variation in VLS by district, ranging from 58.8% in Mokhotlong to 71.7% in Berea. It was particularly low among men in Mokhotlong (49.5%). Seventy-eight (78.1%) percent of widowed persons had VLS. This was significantly higher than in never-married individuals (61.9%), married or cohabitating persons (68.2%), and divorced or separated persons (59.3%) (Table 9.3.A). There were no clear patterns for educational attainment, wealth quintile, or religion and VLS (Table 9.3.A, Figures 9.3.A, and 9.3.B).

Table 9.3.A Viral load suppression by demographic characteristics

Among HIV-positive adults aged 15-59 years, percentage with viral load suppression (VLS) (< 1,000 HIV RNA copies/mL), by sex, self-reported diagnosis and treatment status, and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
	Percentage		Percentage		Percentage	
Characteristic	VLS[1]	Number	VLS[1]	Number	VLS[1]	Number
Self-reported diagnosis and treatment status						
Not previously diagnosed	21.1	285	21.3	378	21.2	663
Previously diagnosed, not on ART	15.8	75	18.0	157	17.1	232
Previously diagnosed, on ART	88.4	657	88.2	1,635	88.3	2,292
Missing	*	2	*	8	*	10
Residence						
Urban	62.8	379	68.1	902	66.0	1,281
Peri-urban	68.5	63	68.8	132	68.7	195
Rural	63.2	577	73.0	1,144	68.8	1,721

Table 9.3.A Viral load suppression by demographic characteristics

Among HIV-positive adults aged 15-59 years, percentage with viral load suppression (VLS) (< 1,000 HIV RNA copies/mL), by sex, self-reported diagnosis and treatment status, and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percentage VLS[1]	Number	Percentage VLS[1]	Number	Percentage VLS[1]	Number
Ecological zone						
Lowlands	63.6	643	69.4	1,425	67.0	2,068
Foothills	66.7	95	76.8	171	72.2	266
Mountains	60.1	211	72.2	396	67.1	607
Senqu River Valley	66.4	70	72.0	186	70.0	256
District						
Maseru	60.8	301	68.0	562	64.8	863
Mafeteng	64.4	101	69.6	236	67.6	337
Mohale's Hoek	61.7	91	74.8	188	69.4	279
Leribe	65.7	153	74.1	344	70.8	497
Berea	71.8	106	71.6	273	71.7	379
Quthing	65.9	50	66.7	126	66.4	176
Butha Buthe	(68.8)	41	68.4	105	68.5	146
Mokhotlong	49.5	64	66.2	121	58.8	185
Qacha's Nek	(58.5)	38	76.9	87	69.7	125
Thaba Tseka	67.3	74	73.5	136	70.9	210
Marital status						
Never married / lived together	64.0	168	60.5	367	61.9	535
Married or living together	64.3	598	71.4	1,079	68.2	1,677
Divorced or separated	52.1	148	65.5	241	59.3	389
Widowed	74.6	98	79.0	491	78.1	589
Education						
No education	65.5	167	(63.4)	45	65.2	212
Primary	62.3	554	72.4	1,148	68.3	1,702
Secondary	61.8	260	67.8	866	65.9	1,126
College / University	(77.9)	32	73.7	107	75.2	139
Graduate / post-graduate	*	4	*	12	*	16
Wealth quintile						
Lowest	63.1	241	70.1	410	67.0	651
Second	64.5	232	76.5	456	71.4	688
Middle	56.8	233	70.2	484	64.5	717
Fourth	63.2	179	68.3	438	66.3	617
Highest	72.9	133	67.8	387	69.5	520
Religion						
Roman Catholic	64.3	423	70.4	853	67.8	1,276
Lesotho Evangelical	64.9	209	73.0	349	69.2	558
Anglican	54.0	73	72.1	129	63.8	202
Pentecostal	65.5	69	72.5	225	70.3	294
Other Christian	60.4	154	67.3	434	65.0	588
Other religion	73.2	64	69.0	177	70.5	241
Don't know	*	22	*	10	(59.5)	32
Total 15-24	51.3	58	50.9	272	51.0	330
Total 15-49	59.2	810	68.9	1,839	65.0	2,649
Total 15-59	63.4	1,019	70.5	2,178	67.6	3,197

[1]Relates to Global AIDS Monitoring indicator 1.4: People living with HIV who have suppressed viral loads.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Figure 9.3.A Viral load suppression (<1000 copies/mL) among HIV-positive adults, by district, LePHIA 2016-2017 (map)

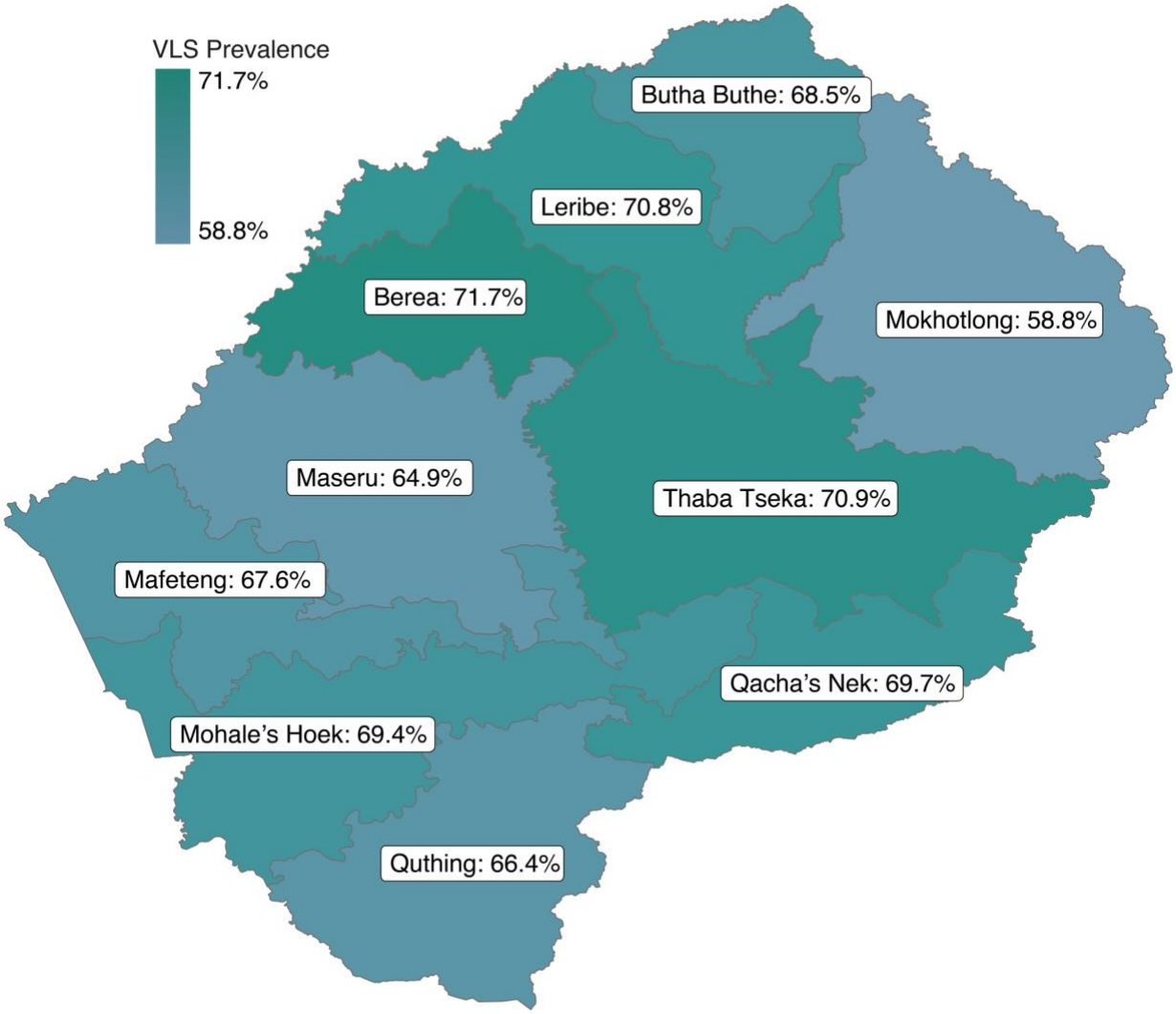
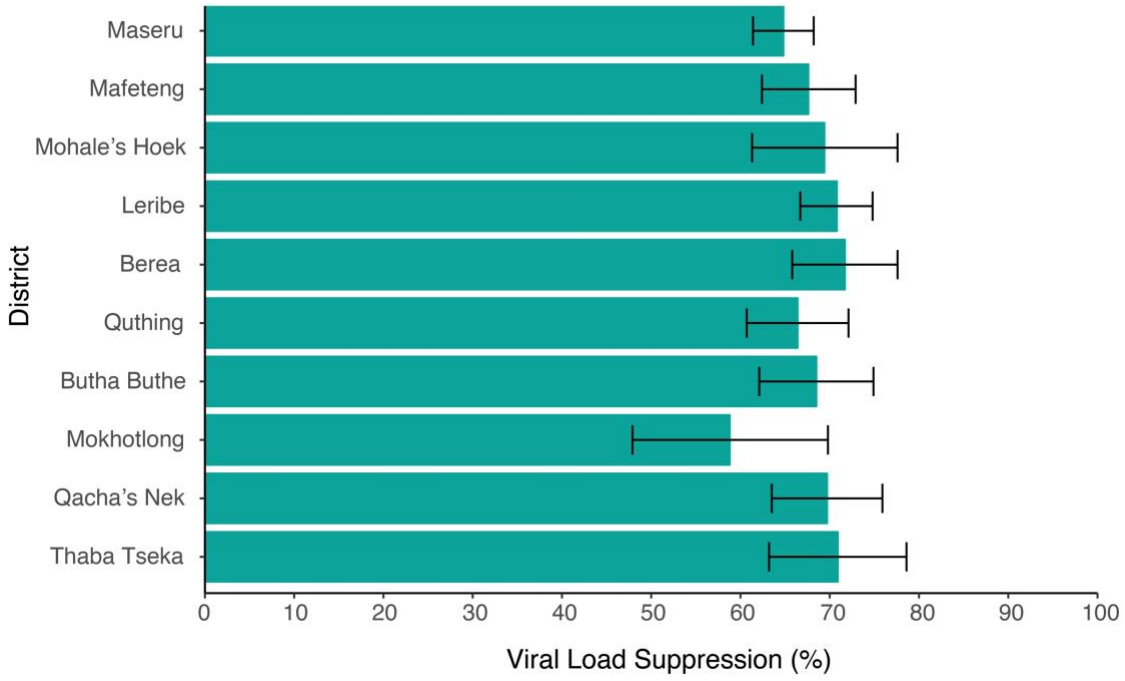


Figure 9.3.B Viral load suppression (<1000 copies/mL) among HIV-positive adults, by district, LePHIA 2016-2017 (bar graph)



9.4 Adult Viral Load Suppression by Age and Sex

The prevalence of VLS ranged from 50.1% among older adolescents (aged 15-19 years) to 84.3% among those aged 55-59 years; it increased sharply for men and women above the age of 34 years. The lowest VLS was observed among men aged 25-34 years (46.1%) and in young women aged 15-24 years (50.9%) (Tables 9.4.A and 9.4.B; Figure 9.4.A).

Table 9.4.A Viral load suppression by age (5-year age groups)

Among HIV-positive persons aged 0-59 years, percentage with viral load suppression (VLS) (< 1,000 HIV RNA copies/mL), by sex and age, LePHIA 2016-2017

	Male		Female		Total	
Age	Percentage VLS[1]	Number	Percentage VLS[1]	Number	Percentage VLS[1]	Number
0-4	*	4	*	8	*	12
5-9	*	6	*	20	(64.0)	26
10-14	*	22	*	23	(67.1)	45
15-19	(48.7)	26	50.8	63	50.1	89
20-24	(53.2)	32	51.0	209	51.4	241
25-29	43.6	93	62.2	341	56.7	434
30-34	47.4	166	66.7	374	58.9	540
35-39	62.1	176	76.8	359	70.6	535
40-44	66.1	176	79.1	292	72.6	468
45-49	77.7	141	79.8	201	78.8	342
50-54	82.6	105	79.3	187	80.8	292
55-59	86.6	104	82.4	152	84.3	256
Total 15-24	51.3	58	50.9	272	51.0	330
Total 15-49	59.2	810	68.9	1,839	65.0	2,649
Total 15-59	63.4	1,019	70.5	2,178	67.6	3,197

[1]Relates to Global AIDS Monitoring indicator 1.4: People living with HIV who have suppressed viral loads.
Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 9.4.B Viral load suppression by age (10-to-15-year age groups)

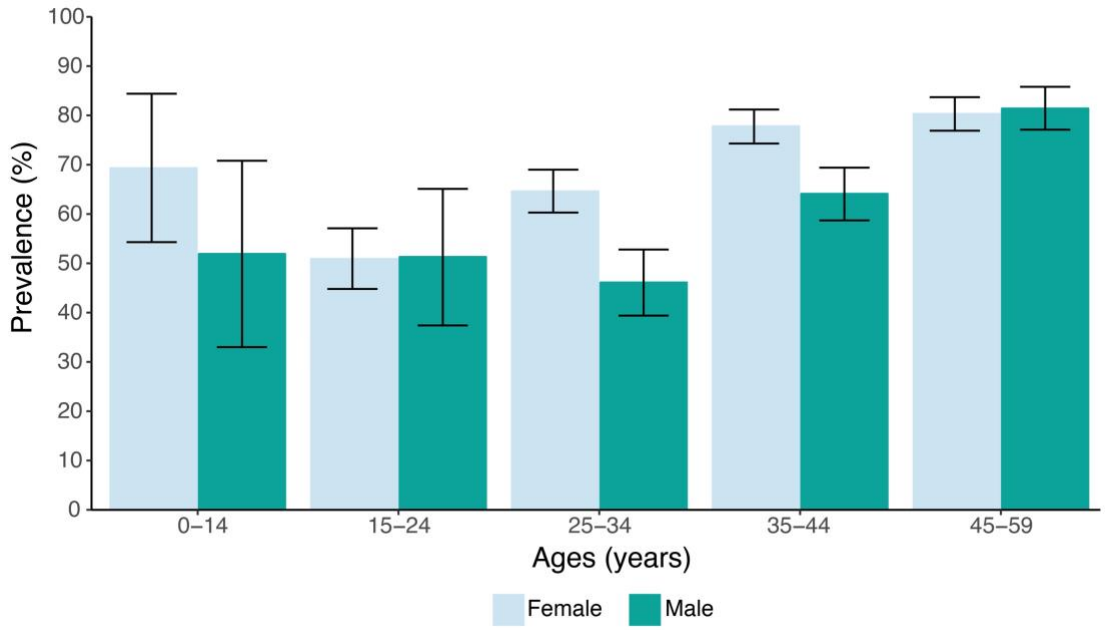
Among HIV-positive persons in Lesotho, percentage with viral load suppression (VLS) (< 1,000 copies of HIV RNA mL) by sex and age, LePHIA 2016-2017

	Male		Female		Total	
Age	Percentage VLS[1]	Number	Percentage VLS[1]	Number	Percentage VLS[1]	Number
0–14	(51.9)	32	69.3	51	62.7	83
15–24	51.3	58	50.9	272	51.0	330
25–34	46.1	259	64.6	715	57.9	974
35–44	64.1	352	77.8	651	71.5	1,003
45–59	81.4	350	80.3	540	80.8	890
Total 15-49	59.2	810	68.9	1,839	65.0	2,649
Total 15-59	63.4	1,019	70.5	2,178	67.6	3,197

[1]Relates to Global AIDS Monitoring indicator 1.4: People living with HIV who have suppressed viral loads

Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

Figure 9.4.A Proportion of viral load suppression (<1000 copies/mL) among people living with HIV, by age and sex, LePHIA 2016-2017



9.5 Gaps and Unmet Needs

- Close to a third of the HIV-positive adults in the country (almost 100,000 people) did not have VLS.
- There is need to prioritize HIV testing to increase diagnosis, to initiate ART once diagnosed, and ensure adherence to ART in order to achieve a high level of VLS in the HIV-positive population, with special attention for the population younger than the age of 35 years.

9.6 References

1. Lesotho Ministry of Health. *National HIV & AIDS Strategic Plan 2018/19 – 2022/23*. Maseru: Lesotho Ministry of Health; 2018.

10 UNAIDS 90-90-90 TARGETS

10.1 Key Findings

- **Diagnosed:** Based on self-report and ARV detection data, it is estimated that in Lesotho 81.0% of HIV-positive adults (aged 15-59 years) know their HIV status (76.6% of HIV-positive men and 84.0% of HIV-positive women).
- **On treatment:** Based on self-report and ARV detection data, it is estimated that among adults living with HIV who know their HIV status, 91.8% were receiving ART (91.6% men and 92.0**%** of women).
- **Suppressed viral load:** Among adults living with HIV who reported ART use or had detectable ARVs, 87.7% had VLS (87.7% of men and women).
- Once men were aware of their status, they achieved the same progress towards ART coverage and VLS as women. This underscores the need to focus on expanding opportunities for diagnosis in men.

10.2 Background

To bring the HIV epidemic under control, UNAIDS has set the ambitious target of 90-90-90: by 2020, 90% of all HIV-positive people will know their HIV status; 90% of all persons with diagnosed HIV infection will receive sustained ART; and 90% of all persons receiving ART will have VLS.[1]

While the previous chapters on HIV testing and treatment provide results on coverage of HIV testing and treatment services, VLS among all HIV-positive individuals is a measure of program impact, irrespective of knowledge of status or ART use. This chapter presents the status of the 90-90-90 indicators, which reflect program performance. Awareness of HIV-status and ART use are indicators of access to services. Viral load suppression among those on treatment not only provides an indication of access to and retention in care, but also provides a measure of program success. When VLS among all HIV-positive individuals is 73% (90 x 90 x 90) or greater, this is an indication of successful testing and treatment services.

The 90-90-90 results in this chapter are presented in two ways. First, Table 10.3.A uses only self-reported awareness and ARV status. Individuals were defined as 'aware' of their HIV-positive status if they reported an HIV-positive status before testing as part of the LePHIA survey. Individuals were defined as 'on treatment' if they reported ART use. Second, Table 10.3.B measures the 90-90-90 indicators using both self-reported and ARV biomarker data. In this table, 'aware' and 'on treatment' have been adjusted such that individuals were classified as 'aware' of their HIV-positive status if they reported an HIV-positive status and/or had detectable ARVs in their blood. Individuals were classified as 'on treatment' if they reported that they were taking ART and/or had detectable ARVs in their blood.

It is important to note that in both cascades, individuals who have VLS, but are not aware of their HIV-positive status or are not on ART, were excluded from the numerator for the third 90 (VLS among those who are aware and on ART).

10.3 Status of the UNAIDS 90-90-90 Targets

90-90-90 cascade based on self-reported awareness of HIV Status and ARV use:

Achievement in diagnosis was below the first 90 target, with 77.2% of HIV-positive adults that were aware of their status. However, Lesotho achieved the second and nearly achieved the third of the 90-90-90 targets: 90.2% of HIV-positive adults who knew their status reported ART use, and 88.3% of those on ART had VLS (Table 10.3.A).

90-90-90 cascade based on self-reported awareness of HIV Status and ARV use and detectable ARVs:

ARV-adjusted awareness of HIV-positive status: After adjusting for the detection of ARVs, 81.0% of HIV-adults were aware of their status (ARV-adjusted awareness), including 76.6% of men and 84.0% of women. ARV-adjusted awareness ranged from 67.6% among young people living with HIV (aged 15-24 years) (71.3% of young men and 66.4% of young women) to 86.3% among people living with HIV aged 35-49 years (82.2% of men and 89.8% of women) (Table 10.3.B; Figure 10.3.A).

ARV-adjusted treatment status: Based on either self-reported ARV status or detectable ARVs, 91.8% of those with ARV-adjusted awareness status were classified as having ART use (91.6% of men and 92.0% of women). This was similar across age groups ranging from 88.8% among those aged 25-34 years to 92.3% among those aged 35-49 years. The greatest disparity by sex was seen in those aged 15-24 years, among whom 84.1% of men and 92.8% of women were on ART (Table 10.3.B; Figure 10.3.A).

Viral suppression: Among persons on ART (ARV-adjusted treatment status), 87.7% had VLS (87.7% of men and women), ranging from 77.2% among young people to 89.9% among those aged 35-49 years. Across all age bands, VLS among those on ART was similar among men and women (Table 10.3.B; Figure 10.3.A).

Table 10.3.A Adult 90-90-90 (self-reported antiretroviral therapy (ART) status; conditional percentages)

90-90-90 targets among adults living with HIV aged 15-59 years, by sex and age, LePHIA 2016-2017

	Diagnosed					
	Male		Female		Total	
Age	Percentage self-reported HIV positive[1]	Number	Percentage self-reported HIV positive[1]	Number	Percentage self-reported HIV positive[1]	Number
15-24	56.2	58	61.4	271	60.2	329
25-34	54.8	257	80.4	713	71.2	970
35-49	76.3	493	87.8	849	82.5	1,342
15-49	67.8	808	81.1	1,833	75.7	2,641
25-59	71.9	959	84.3	1,901	79.0	2,860
50-59	87.1	209	83.9	339	85.3	548
15-59	71.0	1,017	81.5	2,172	77.2	3,189

	On Treatment					
	Male		Female		Total	
Age	Among those self-reported as HIV-positive, percentage reported on ART	Number	Among those self-reported as HIV-positive, percentage reported on ART	Number	Among those self-reported as HIV-positive, percentage reported on ART	Number
15-24	(79.9)	33	89.7	172	87.6	205
25-34	85.9	139	87.5	579	87.1	718
35-49	89.3	381	91.6	753	90.6	1,134
15-49	87.8	553	89.8	1,504	89.1	2,057
25-59	89.8	699	90.7	1,621	90.4	2,320
50-59	95.4	179	95.7	289	95.6	468
15-59	89.4	732	90.6	1,793	90.2	2,525

Table 10.3.A Adult 90-90-90 (self-reported antiretroviral therapy (ART) status; conditional percentages)

90-90-90 targets among adults living with HIV aged 15-59 years, by sex and age, LePHIA 2016-2017

	Viral Load Suppression (VLS)					
	Male		Female		Total	
Age	Among those self-reported on ART, percentage with VLS	Number	Among those self-reported on ART, percentage with VLS	Number	Among those self-reported on ART, percentage with VLS	Number
15-24	(81.7)	27	76.4	155	77.5	182
25-34	83.1	120	84.1	509	83.9	629
35-49	88.5	339	91.8	691	90.4	1,030
15-49	86.7	486	87.1	1,355	87.0	1,841
25-59	88.7	630	89.4	1,480	89.1	2,110
50-59	94.3	171	94.0	280	94.1	451
15-59	88.4	657	88.2	1,635	88.3	2,292

Table 10.3.B Adult 90-90-90 (self-reported antiretroviral (ART) status and laboratory antiretroviral (ARV) data; conditional percentages)

90-90-90 targets among adults living with HIV aged 15-59 years, by sex and age, LePHIA 2016-2017

	Diagnosed					
	Male		Female		Total	
Age	Percentage self-reported HIV positive or with detectable ARVs[1]	Number	Percentage self-reported HIV positive or with detectable ARVs[1]	Number	Percentage self-reported HIV positive or with detectable ARVs[1]	Number
15-24	71.3	58	66.4	272	67.6	330
25-34	58.7	258	82.5	715	73.9	973
35-49	82.2	493	89.8	851	86.3	1,344
15-49	73.5	809	83.5	1,838	79.5	2,647
25-59	76.9	960	86.5	1,905	82.4	2,865
50-59	91.6	209	87.2	339	89.2	548
15-59	76.6	1,018	84.0	2,177	81.0	3,195

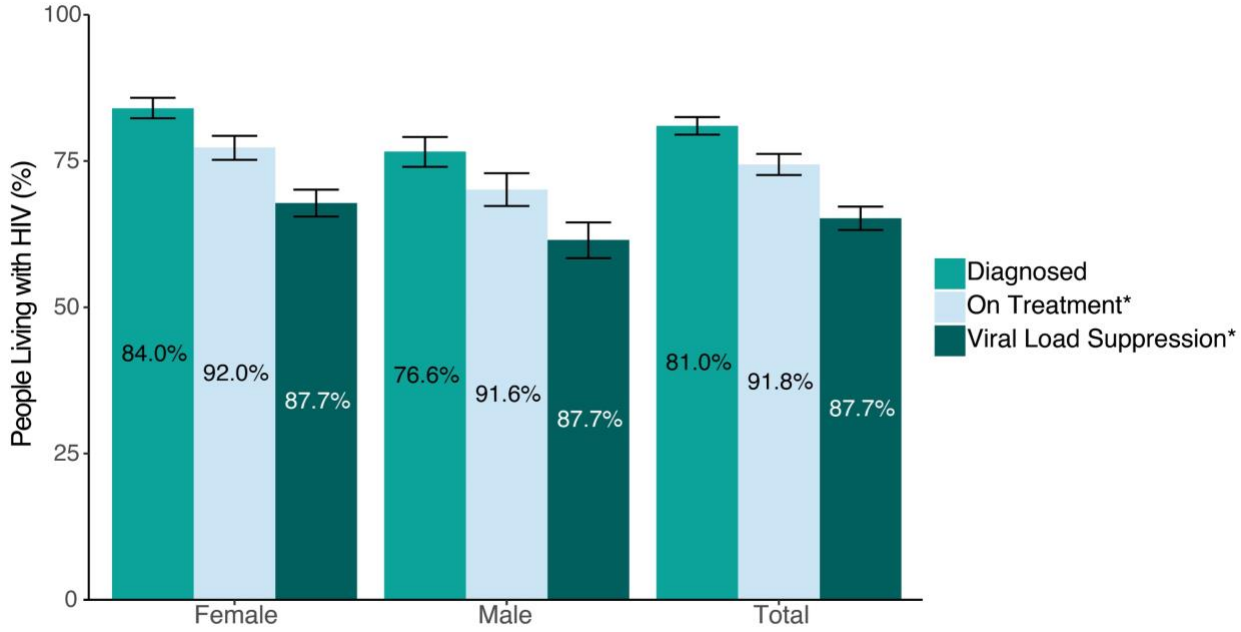
	On Treatment Among Those Diagnosed					
	Male		Female		Total	
Age	Percentage with detectable ARVs or who reported current ART usage[2]	Number	Percentage with detectable ARVs or who-reported current ART usage[2]	Number	Percentage with detectable ARVs or who reported current ART usage[2]	Number
15-24	(84.1)	41	92.8	186	90.6	227
25-34	88.3	149	89.0	594	88.8	743
35-49	91.5	409	92.9	770	92.3	1,179
15-49	90.2	599	91.3	1,550	90.9	2,149
25-59	92.0	747	91.9	1,664	91.9	2,411
50-59	97.2	189	95.8	300	96.4	489
15-59	91.6	788	92.0	1,850	91.8	2,638

	Viral Load Suppression (VLS) Among Those on Treatment					
	Male		Female		Total	
Age	Percentage with VLS[3]	Number	Percentage with VLS[3]	Number	Percentage with VLS[3]	Number
15-24	(78.3)	35	76.8	173	77.2	208
25-34	83.5	132	83.6	531	83.6	663
35-49	88.1	373	91.3	716	89.9	1,089
15-49	86.3	540	86.6	1,420	86.5	1,960
25-59	88.1	689	88.9	1,538	88.6	2,227
50-59	92.8	184	93.6	291	93.2	475
15-59	87.7	724	87.7	1,711	87.7	2,435

[1]Relates to Global AIDS Monitoring indicator (GAM) 1.1: People living with HIV who know their HIV status, and PEPFAR DIAGNOSED_NAT; [2]Relates to GAM 1.2: People living with HIV on antiretroviral therapy, and PEPFAR TX_CURR_NAT / SUBNAT; [3]Relates to GAM 1.4: People living with HIV who have suppressed viral loads, and PEPFAR VL_SUPPRESSION_NAT.

Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

Figure 10.3.A Adult 90-90-90 (adjusted for laboratory antiretroviral data among adults), LePHIA 2016-2017



Note: in LePHIA, antiretroviral (ARV)-adjusted 90-90-90 participants were classified as 'aware' or 'diagnosed' if they self-reported HIV positive before testing HIV positive or had detectable ARVs in their blood. Participants were classified as 'on treatment' if they self-reported that they were on treatment or if they had detectable ARVs in their blood.
*Inset numbers are conditional proportions.

10.4 Gaps and Unmet Need

- The major gap was in diagnosis of those living with HIV, especially among men and young adults.
- The lowest coverage of ART among those who were aware of their status was among older adolescent boys and young men aged 15-24 years (84.1%).
- Among those on ART, only 77.2% of those aged 15-24 years had achieved VLS, indicating possible non-adherence or drug resistance within this priority population.

10.5 References

1. Joint United Nations Programme on HIV/AIDS (UNAIDS). *90-90-90: An ambitious treatment target to help end the AIDS epidemic.* Geneva: UNAIDS; 2014. http://www.unaids.org/sites/default/files/media_asset/90-90-90_en_0.pdf. Accessed December 20, 2018.

11 CLINICAL PERSPECTIVES ON PEOPLE LIVING WITH HIV

11.1 Key Findings

- Among adults (aged 15-59 years) living with HIV, 11.5% had severe immunosuppression with a CD4 count less than 200 cells/µL, which was twice as high in men (16.0%) as in women (8.4%).
- Among adults with no previous diagnosis, 17.7% of men and 13.7% of women had severe immunosuppression.
- Among adults living with HIV, 98.8% of those who reported initiating ART less than 12 months prior to the survey, and 98.0% of those who reported initiating ART more than 12 months prior to the survey, reported that they were still taking ART at the time of the survey.
- The prevalence of transmitted drug resistance was 11.4%, with the majority of mutations conferring resistance to non-nucleoside reverse transcriptase inhibitors (NNRTIs).

11.2 Background

The quality of HIV care is based on key principles of accessibility, efficiency, and safety. As countries implement treatment for all people living with HIV, ensuring a sustainable health system that is people-centered and innovative requires diligent monitoring and responsiveness.[1] Indicators such as CD4 count at diagnosis and retention on ART can provide evidence of program coverage, the ability to reach individuals with likely HIV infection, and quality of care. The distribution of CD4 counts reflects population health and the potential impact of HIV on mortality.

Furthermore, among the challenges associated with implementing the "treat all" strategy is the anticipated increase in the number of patients enrolled in HIV care and treatment clinics, possibly exhausting the capacity to deliver quality care. Programs are advised to use a differentiated service delivery (DSD) model.[2] Under the DSD approach, the sickest patients receive intensified care, while those with stable or less advanced disease receive appropriate care in the environment best suited to their specific needs.[1] Thus, although the most recent treatment guidelines in Lesotho no longer use the CD4 count as a threshold for ART initiation, the CD4 count continues to be used for clinical staging and to determine the clinical package offered to patients.[3,4] Late presenters, defined as patients who are diagnosed with a CD4 count less than 200 cells/µL, are screened for opportunistic infections such as TB; assessed for malnutrition; and provided with cotrimoxazole prophylaxis, isoniazid preventive therapy, and food support.

Finally, the measurement of transmitted drug resistance allows optimization of national ART guidelines, including second- and third-line therapies. LePHIA provided a unique opportunity to gauge progress in the expansion of HIV clinical services in Lesotho, as well as identify gaps and future challenges.

11.3 CD4 Counts and Severe Immunosuppression

The median CD4 count was 476 cells/microliter (µL) among all HIV-positive adults (397 cells/µL in men and 532 cells/µL in women) (Table 11.3.A). Significantly more men (16.0%) were severely immunosuppressed (CD4 count less than 200 cells/µL) than women (8.4%).

Among those who reported no previous diagnosis, the median CD4 count was 383 cells/µL (361 cells/µL among men and 413 cells/µL among women). Among previously diagnosed individuals not on ART, the median CD4 count was 350 cells/µL (299 cells/µL in men and 377 cells/µL in women); 22.7% had a CD4 count less than 200 cells/µL (25.9% of men and 20.4% of women). Among those who reported ART use, the median CD4 count was 518 cells/µL (424 cells/µL among men and 580 cells/µL among women), with less than one in 10 (8.9%) with severe immunosuppression. However, significantly more men on ART were severely immunosuppressed than women (14.1% vs 5.8%, respectively) (Figure 11.3.A; Table 11.3.A).

The percentage of adults with severe immunosuppression was highest in Thaba Tseka (16.2%) and lowest in Mafeteng (8.0%). Immunosuppression was highest in those who were divorced or separated (13.7%), and in those without any education (14.4%). It did not differ by urban or rural residence, wealth quintile, or religion. It was lowest in young adults aged 20-24 years (4.8%) and after the age of 30 years there was no difference in the proportion with severe immunosuppression (Table 11.3.A). Almost one in four (24.1%) older adolescent boys aged 15-19 years were severely immunosuppressed, although the number was very small (n=26), compared to three percent of older adolescent girls (n=64).

Figure 11.3.A CD4 count distribution among HIV-positive adults, by antiretroviral therapy (ART) status, LePHIA 2016-2017

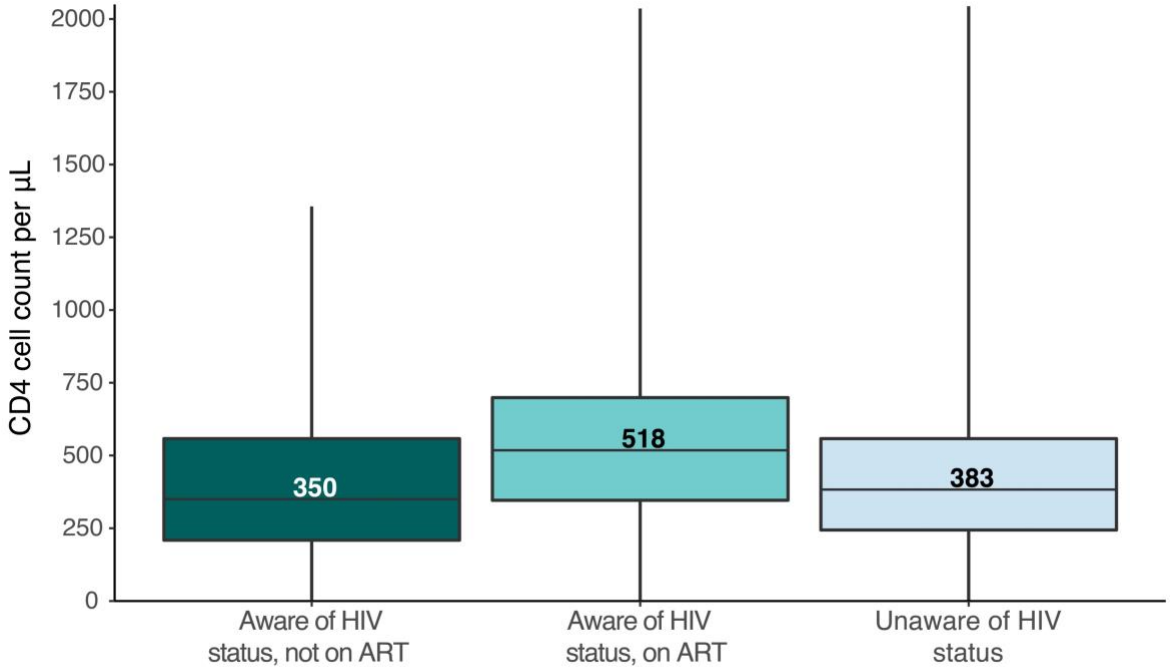


Table 11.3.A Median CD4 count and severe immunosuppression

Among HIV-positive adults aged 15-59 years, median (Q1, Q3) CD4 count and percentage with severe immunosuppression (< 200 cells/µL), by sex, self-reported diagnosis and ART status, and selected demographic characteristics, LePHIA 2016-2017

	Male			Female			Total		
Characteristic	Median (Q1, Q3)	Percentage < 200 cells/µL	Number	Median (Q1, Q3)	Percentage < 200 cells/µL	Number	Median (Q1, Q3)	Percentage < 200 cells/µL	Number
Self-reported diagnosis and treatment status									
Not previously diagnosed	361 (235, 526)	17.7	283	413 (261, 620)	13.7	375	383 (244, 558)	15.8	658
Previously diagnosed, not on ART	299 (187, 566)	25.9	75	377 (229, 553)	20.4	157	350 (209, 558)	22.7	232
Previously diagnosed, on ART	424 (268, 606)	14.1	656	580 (404, 754)	5.8	1,635	518 (346, 699)	8.9	2,291
Missing	*	*	2	*	*	8	*	*	10
Residence									
Urban	396 (246, 553)	15.9	378	512 (343, 701)	8.6	900	464 (295, 651)	11.5	1,278
Peri-urban	374 (210, 646)	16.5	62	498 (392, 726)	7.2	132	481 (322, 690)	10.9	194
Rural	398 (251, 587)	15.9	576	556 (369, 744)	8.4	1,143	487 (299, 671)	11.6	1,719
District									
Maseru	391 (240, 570)	16.0	300	510 (331, 705)	9.3	562	459 (280, 642)	12.2	862
Mafeteng	403 (292, 596)	10.7	101	594 (394, 773)	6.3	236	513 (348, 706)	8.0	337
Mohale's Hoek	404 (259, 571)	13.2	91	565 (406, 746)	5.0	188	519 (338, 689)	8.4	279
Leribe	415 (247, 567)	18.1	152	520 (348, 728)	7.1	343	472 (307, 677)	11.5	495
Berea	406 (226, 639)	14.9	106	557 (376, 721)	8.1	271	504 (324, 691)	10.6	377
Quthing	363 (249, 659)	(17.8)	49	470 (327, 717)	6.2	126	464 (295, 697)	10.3	175
Butha Buthe	365 (220, 549)	(21.9)	41	487 (322, 654)	9.4	104	419 (278, 623)	14.0	145
Mokhotlong	295 (209, 504)	17.9	64	535 (347, 701)	10.4	122	457 (261, 630)	13.7	186
Qacha's Nek	422 (328, 621)	(9.9)	38	550 (401, 723)	9.9	87	520 (361, 678)	9.9	125
Thaba Tseka	390 (246, 579)	18.8	74	556 (372, 711)	14.3	136	483 (274, 652)	16.2	210
Marital status									
Never married / lived together	409 (265, 578)	10.5	167	518 (357, 717)	9.1	366	472 (316, 675)	9.7	533
Married or living together	397 (248, 580)	15.4	596	570 (376, 748)	8.2	1,078	485 (299, 676)	11.5	1,674
Divorced or separated	393 (244, 573)	16.8	148	499 (330, 663)	10.9	240	466 (294, 624)	13.7	388
Widowed	352 (186, 555)	27.1	98	489 (325, 672)	7.1	491	464 (297, 652)	11.2	589
Education									
No education	402 (244, 574)	16.8	167	472 (293, 668)	(1.9)	45	416 (253, 585)	14.4	212
Primary	397 (250, 574)	15.2	554	520 (348, 722)	9.1	1,148	467 (298, 661)	11.6	1,702
Secondary	388 (243, 561)	16.7	258	544 (368, 718)	7.7	865	497 (312, 675)	10.6	1,123
College / University	476 (259, 730)	(12.5)	31	554 (380, 709)	10.5	105	540 (330, 716)	11.2	136
Graduate / post-graduate	*	*	4	*	*	12	*	*	16
Wealth quintile									
Lowest	389 (242, 571)	16.4	241	550 (366, 736)	9.9	411	479 (279, 653)	12.8	652
Second	398 (255, 567)	17.0	232	562 (392, 748)	7.4	456	480 (314, 675)	11.6	688
Middle	395 (252, 573)	15.4	232	531 (341, 706)	7.6	483	467 (298, 659)	10.9	715
Fourth	442 (239, 584)	16.4	178	511 (359, 705)	8.3	437	476 (318, 656)	11.4	615
Highest	380 (259, 569)	14.4	132	514 (331, 709)	9.3	385	472 (299, 691)	11.0	517

Table 11.3.A Median CD4 count and severe immunosuppression (continued)

Among HIV-positive adults aged 15-59 years, median (Q1, Q3) CD4 count and percentage with severe immunosuppression (< 200 cells/µL), by sex, self-reported diagnosis and ART status, and selected demographic characteristics, LePHIA 2016-2017

	Male			Female			Total		
Characteristic	Median (Q1, Q3)	Percentage < 200 cells/µL	Number	Median (Q1, Q3)	Percentage < 200 cells/µL	Number	Median (Q1, Q3)	Percentage < 200 cells/µL	Number
Religion									
Roman Catholic	398 (240, 582)	17.2	421	531 (350, 720)	9.4	851	472 (288, 662)	12.7	1,272
Lesotho Evangelical	394 (261, 581)	14.4	208	539 (361, 705)	8.5	347	478 (300, 650)	11.2	555
Anglican	362 (235, 483)	19.8	73	576 (396, 743)	4.8	129	465 (295, 632)	11.7	202
Pentecostal	405 (238, 580)	17.1	69	532 (358, 736)	6.1	225	485 (321, 706)	9.5	294
Other Christian	398 (276, 546)	12.1	154	503 (345, 714)	8.4	434	472 (324, 668)	9.6	588
Other religion	476 (303, 649)	10.7	64	546 (347, 712)	9.3	178	527 (328, 692)	9.8	242
Don't know	*	*	22	*	*	10	270 (155, 538)	(32.2)	32
Age									
15-19	515 (232, 671)	(24.1)	26	633 (419, 783)	3.0	64	588 (391, 759)	10.1	90
20-24	435 (352, 631)	(6.9)	31	518 (374, 717)	4.4	207	495 (362, 709)	4.8	238
25-29	453 (298, 670)	13.1	93	515 (357, 741)	6.8	342	494 (349, 710)	8.7	435
30-34	383 (238, 535)	15.2	165	529 (315, 746)	10.4	373	461 (270, 657)	12.3	538
35-39	380 (239, 541)	17.8	176	555 (376, 718)	9.7	359	481 (301, 653)	13.2	535
40-44	406 (229, 589)	17.9	175	529 (374, 700)	9.2	291	469 (285, 643)	13.5	466
45-49	390 (250, 570)	14.0	141	510 (324, 706)	8.9	200	446 (269, 638)	11.4	341
50-54	412 (275, 572)	14.3	105	526 (332, 675)	9.8	187	473 (301, 645)	11.8	292
55-59	352 (232, 540)	19.1	104	516 (334, 696)	7.8	152	424 (274, 623)	12.8	256
Total 15-24	472 (351, 657)	14.4	57	538 (380, 752)	4.0	271	532 (370, 716)	6.4	328
Total 15-49	398 (247, 580)	15.9	807	533 (359, 725)	8.3	1,836	478 (301, 670)	11.4	2,643
Total 15-59	397 (248, 575)	16.0	1,016	532 (356, 719)	8.4	2,175	476 (299, 664)	11.5	3,191

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.
Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

11.4 Late HIV Diagnosis

Among adults who self-reported an HIV-negative status, but tested HIV positive in LePHIA, 15.7% had a CD4 count less than 200 cells/µL (16.5% of men and 15.0% of women) and 44.6% had a CD4 count less than 350 cells/µL. The proportion of adults with immunosuppression at diagnosis appeared to increase in adults older than the age of 30 years, with severe immunosuppression reaching one in three (35.6%) among those aged 55-59 years—however, this estimate is based on a small number of observations (25-49) and should be interpreted with caution (Table 11.4.A).

Table 11.4.A Late HIV diagnosis

Among adults aged 15-59 years who tested HIV positive in the PHIA survey, but self-reported HIV negative, percentage who had a CD4 cell count < 200 cells/µL and < 350 cells/µL, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male			Female			Total		
Characteristic	Percentage < 200 cells/µL[1]	Percentage < 350 cells/µL[1]	Number	Percentage < 200 cells/µL[1]	Percentage < 350 cells/µL[1]	Number	Percentage < 200 cells/µL[1]	Percentage < 350 cells/µL[1]	Number
Residence									
Urban	14.9	41.5	80	15.6	42.3	140	15.3	41.9	220
Peri-urban	*	*	14	*	*	22	(14.8)	(53.9)	36
Rural	16.3	49.5	134	16.2	40.5	161	16.3	45.5	295
District									
Maseru	15.4	47.3	63	16.7	49.0	87	16.0	48.1	150
Mafeteng	*	*	20	(15.6)	(41.8)	34	12.6	45.3	54
Mohale's Hoek	(5.9)	(38.2)	25	*	*	23	(5.2)	(31.6)	48
Leribe	(20.5)	(48.0)	34	(13.5)	(39.3)	45	17.2	43.9	79
Berea	*	*	17	(9.3)	(34.6)	37	13.8	35.2	54
Quthing	*	*	11	(0.0)	(29.8)	29	(2.5)	(30.2)	40
Butha Buthe	*	*	10	*	*	16	(20.7)	(55.3)	26
Mokhotlong	*	*	23	(25.6)	(42.3)	27	22.4	54.9	50
Qacha's Nek	*	*	8	*	*	12	*	*	20
Thaba Tseka	*	*	17	*	*	13	(30.1)	(56.1)	30
Marital status									
Never married/lived together	(8.2)	(44.1)	43	9.8	36.7	80	9.1	39.9	123
Married or living together	15.7	47.6	130	14.3	34.7	160	15.1	41.8	290
Divorced or separated	(17.9)	(46.5)	46	(23.7)	(52.1)	35	20.1	48.7	81
Widowed	*	*	8	(18.9)	(60.9)	48	28.2	65.5	56
Education									
No education	(19.1)	(43.4)	35	*	*	5	(17.1)	(42.5)	40
Primary	18.9	47.9	133	18.2	39.4	149	18.6	44.2	282
Secondary	9.6	48.6	54	12.9	42.7	158	11.7	44.8	212
College / University	*	*	5	*	*	9	*	*	14
Graduate / post-graduate	*	*	1	*	*	2	*	*	3
Wealth quintile									
Lowest	15.1	56.0	57	22.5	42.2	64	18.4	49.9	121
Second	(16.2)	(48.4)	46	15.2	38.3	57	15.7	43.8	103
Middle	15.5	47.0	64	10.9	40.0	67	13.6	44.1	131
Fourth	(21.9)	(40.1)	43	17.7	42.7	77	19.6	41.5	120
Highest	*	*	18	9.5	42.2	57	10.0	44.6	75
Religion									
Roman Catholic	12.8	41.4	93	17.9	40.9	125	15.3	41.1	218
Lesotho Evangelical	18.1	53.2	52	(14.0)	(38.6)	44	16.5	47.6	96
Anglican	*	*	17	*	*	22	(14.5)	(48.0)	39
Pentecostal	*	*	9	(17.1)	(52.3)	29	(14.4)	(47.5)	38
Other Christian	(17.4)	(49.1)	34	13.5	42.4	68	15.2	45.3	102
Other religion	*	*	13	(10.0)	(39.0)	35	(18.4)	(47.7)	48
Don't know	*	*	8	*	*	0	*	*	8

Table 11.4.A Late HIV diagnosis (continued)

Among adults aged 15-59 years who tested HIV positive in the PHIA survey but self-reported HIV negative, percentage who had a CD4 cell count < 200 cells/µL and < 350 cells/µL, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male			Female			Total		
Characteristic	Percentage < 200 cells/µL[1]	Percentage < 350 cells/µL[1]	Number	Percentage < 200 cells/µL[1]	Percentage < 350 cells/µL[1]	Number	Percentage < 200 cells/µL[1]	Percentage < 350 cells/µL[1]	Number
Age									
15-19	*	*	4	*	*	17	*	*	21
20-24	*	*	13	5.3	34.5	67	8.0	36.0	80
25-29	(11.1)	(38.4)	47	9.1	36.3	71	10.1	37.4	118
30-34	14.4	50.0	61	(25.9)	(49.7)	49	18.6	49.9	110
35-39	(17.2)	(58.6)	43	(21.4)	(37.8)	38	18.8	50.8	81
40-44	(27.6)	(56.8)	27	*	*	22	(20.0)	(50.7)	49
45-49	*	*	13	*	*	20	(20.7)	(52.4)	33
50-54	*	*	9	*	*	20	(19.6)	(53.8)	29
55-59	*	*	11	*	*	19	(35.6)	(44.3)	30
Total 15-24	*	*	17	4.1	32.4	84	6.0	31.9	101
Total 15-49	15.5	47.9	208	13.7	40.0	284	14.7	44.1	492
Total 15-59	16.5	47.9	228	15.0	41.2	323	15.7	44.6	551

[1]Relates to Global AIDS Monitoring indicator 1.5: Late HIV diagnosis

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

11.5 Retention on Antiretroviral Therapy

Among adults living with HIV who initiated ART less than 12 months prior to the survey, 98.8% reported that they were still taking ART at the time of the survey (Table 11.5.A). Similarly, 98.0% of those who initiated ART 12 months or more prior to the survey reported still taking ART. There was little variation by sociodemographic characteristics (Table 11.5.B).

Table 11.5.A Retention on antiretroviral therapy (ART): people initiating ART LESS THAN 12 months prior to the survey

Among HIV-positive adults aged 15-59 years who self-reported initiating ART less than 12 months prior to the survey, percentage who self-reported still receiving ART, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percentage still receiving ART[1]	Number	Percentage still receiving ART[1]	Number	Percentage still receiving ART[1]	Number
Presence of detectable ARVs						
Detectable	99.3	136	99.0	358	99.1	494
Not detectable	*	6	(96.4)	32	(95.2)	38
Residence						
Urban	100.0	50	99.2	154	99.5	204
Peri-urban	*	14	*	24	(98.5)	38
Rural	97.9	79	98.6	215	98.4	294
District						
Maseru	(100.0)	43	99.0	100	99.4	143
Mafeteng	*	16	(100.0)	40	100.0	56
Mohale's Hoek	*	13	(100.0)	28	(96.0)	41
Leribe	*	24	98.3	61	98.9	85
Berea	*	21	97.4	58	98.4	79
Quthing	*	6	*	23	(92.9)	29
Butha Buthe	*	3	*	20	*	23
Mokhotlong	*	6	*	22	(100.0)	28
Qacha's Nek	*	4	*	16	*	20
Thaba Tseka	*	7	(100.0)	25	(100.0)	32
Marital status						
Never married / lived together	*	18	100.0	63	98.9	81

Table 11.5.A Retention on antiretroviral therapy (ART): people initiating ART LESS THAN 12 months prior to the survey (continued)

Among HIV-positive adults aged 15-59 years who self-reported initiating ART less than 12 months prior to the survey, percentage who self-reported still receiving ART, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percentage still receiving ART[1]	Number	Percentage still receiving ART[1]	Number	Percentage still receiving ART[1]	Number
Marital status (cont.)						
Married or living together	99.0	95	99.0	207	99.0	302
Divorced or separated	*	19	(100.0)	43	100.0	62
Widowed	*	10	96.6	80	97.1	90
Education						
No education	*	21	*	5	(100.0)	26
Primary	98.1	80	99.1	210	98.7	290
Secondary	(100.0)	38	98.2	158	98.7	196
College / University	*	2	*	18	*	20
Graduate / post-graduate	*	1	*	2	*	3
Wealth quintile						
Lowest	(97.0)	36	98.4	74	97.8	110
Second	(98.2)	34	99.0	88	98.7	122
Middle	(100.0)	27	98.4	98	98.9	125
Fourth	*	24	98.2	68	98.9	92
Highest	*	22	100.0	65	100.0	87
Religion						
Roman Catholic	98.6	65	99.0	158	98.8	223
Lesotho Evangelical	(97.8)	29	100.0	54	99.0	83
Anglican	*	11	*	19	(100.0)	30
Pentecostal	*	9	(97.4)	43	98.1	52
Other Christian	*	20	97.5	82	98.2	102
Other religion	*	6	(100.0)	34	(100.0)	40
Don't know	*	3	*	3	*	6
Age						
15-19	*	2	*	12	*	14
20-24	*	4	(100.0)	48	100.0	52
25-29	*	19	100.0	99	100.0	118
30-34	(97.0)	29	98.2	56	97.7	85
35-39	(98.0)	28	97.6	65	97.7	93
40-44	*	24	(98.0)	42	99.0	66
45-49	*	15	*	24	(100.0)	39
50-54	*	15	(95.1)	27	(97.4)	42
55-59	*	7	*	20	(100.0)	27
Total 15-24	*	6	100.0	60	100.0	66
Total 15-49	98.7	121	99.0	346	98.9	467
Total 15-59	98.9	143	98.8	393	98.8	536

[1]Relates to Global AIDS Monitoring indicator 1.3: Retention on antiretroviral therapy at 12 months

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 11.5.B Retention on antiretroviral therapy (ART): people initiating ART MORE THAN 12 months prior to the survey

Among HIV-positive adults aged 15-59 years who self-reported initiating ART 12 months or more prior to the survey, percentage who self-reported still receiving ART, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percentage still receiving ART[1]	Number	Percentage still receiving ART[1]	Number	Percentage still receiving ART[1]	Number
Presence of detectable ARVs						
Detectable	99.8	466	99.8	1123	99.8	1589
Not detectable	*	22	73.6	83	71.9	105
Residence						
Urban	98.0	190	96.6	504	97.1	694
Peri-urban	(100.0)	29	100.0	68	100.0	97

Table 11.5.B Retention on antiretroviral therapy (ART): people initiating ART MORE THAN 12 months prior to the survey (continued)

Among HIV-positive adults aged 15-59 years who self-reported initiating ART 12 months or more prior to the survey, percentage who self-reported still receiving ART, by sex and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percentage still receiving ART[1]	Number	Percentage still receiving ART[1]	Number	Percentage still receiving ART[1]	Number
Residence (cont.)						
Rural	98.4	271	98.7	648	98.6	919
District						
Maseru	98.2	137	97.0	301	97.5	438
Mafeteng	(100.0)	45	97.1	138	98.0	183
Mohale's Hoek	(100.0)	43	98.4	118	98.9	161
Leribe	98.9	80	99.0	200	99.0	280
Berea	100.0	55	97.6	148	98.4	203
Quthing	*	24	100.0	68	100.0	92
Butha Buthe	*	23	93.1	57	90.8	80
Mokhotlong	(91.1)	26	100.0	58	96.6	84
Qacha's Nek	*	22	(97.8)	49	98.6	71
Thaba Tseka	(100.0)	35	100.0	83	100.0	118
Marital status						
Never married / lived together	100.0	80	96.7	170	98.0	250
Married or living together	98.1	282	97.7	603	97.9	885
Divorced or separated	98.9	62	96.3	137	97.3	199
Widowed	96.7	63	99.5	310	98.9	373
Education						
No education	98.8	74	*	23	99.0	97
Primary	98.2	269	97.9	677	98.0	946
Secondary	98.1	127	98.2	447	98.2	574
College / University	*	17	94.2	66	95.9	83
Graduate / post-graduate	*	2	*	7	*	9
Wealth quintile						
Lowest	97.3	103	99.0	232	98.4	335
Second	99.4	122	98.0	266	98.6	388
Middle	97.6	105	98.2	263	98.0	368
Fourth	97.3	86	97.2	247	97.3	333
Highest	100.0	74	97.0	211	98.0	285
Religion						
Roman Catholic	100.0	196	98.3	471	98.9	667
Lesotho Evangelical	95.5	97	97.6	217	96.8	314
Anglican	(95.5)	38	100.0	72	98.1	110
Pentecostal	(97.4)	40	98.8	123	98.4	163
Other Christian	98.7	75	96.4	238	97.1	313
Other religion	(100.0)	34	96.9	94	98.0	128
Don't know	*	8	*	5	*	13
Age						
15-19	*	11	*	22	(97.3)	33
20-24	*	10	92.5	70	92.6	80
25-29	*	16	97.9	138	98.2	154
30-34	(100.0)	49	95.8	219	96.9	268
35-39	95.6	76	97.9	220	97.1	296
40-44	97.8	96	99.6	198	98.8	294
45-49	99.0	92	98.5	134	98.8	226
50-54	98.9	67	100.0	116	99.5	183
55-59	100.0	73	100.0	103	100.0	176
Total 15-24	*	21	93.3	92	94.1	113
Total 15-49	98.0	350	97.4	1001	97.6	1351
Total 15-59	98.3	490	97.9	1220	98.0	1710

[1]Relates to Global AIDS Monitoring indicator 1.3: Retention on antiretroviral therapy at 12 months

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

11.6 Transmitted Resistance to Antiretroviral Therapy

As indicated in Section 1.3, an objective of LePHIA was to estimate the prevalence of transmitted resistance to ARVs, using samples from HIV-positive participants who were identified as recent HIV infections using the Recent Infection Testing Algorithm (Figure 2.5.A).

Genotypic resistance testing was done on plasma samples from the 35 adults who were classified as recently diagnosed with HIV. The prevalence of transmitted drug resistance was 11.4%, with the most common mutations conferring resistance to non-nucleoside reverse transcriptase inhibitors (NNRTIs), including K103N. Dual-class resistance was seen in 2.9%, where one participant had mutations to the nucleoside reverse transcriptase inhibitors (NRTIs), including K65R and M184V, as well as NNRTIs (Table 11.6.A). Common to the region, all samples that underwent genotyping (n=148) were Subtype C (Table 11.6.B).

Table 11.6.A Resistance to antiretrovirals (ARVs)

Among adults aged 15-59 years who were recently infected with HIV, percentage with resistance to ARVs, by class of ARV* resistance, LePHIA 2016-2017

	Percent	Number	DR Mutations Detected[1]
Successfully amplified[2]	100.0	35	
Any	11.4	4	K103N, K65R, M184V, V106M, V75M
Nucleoside reverse transcriptase inhibitors (NRTIs)	2.9	1	K65R, M184V, V75M
Non-nucleoside reverse transcriptase inhibitors (NNRTIs)	11.4	4	K103N, V106M
Protease inhibitors (PIs)	0.0	0	
NRTI & NNRTI	2.9	1	K65R, M184V, V106M, V75M
NRTI, NNRTI & PI	0.0	0	

* Commonly used ARV by class include: NNRTIs nevirapine and efavirenz; NRTIs tenofovir, lamivudine, zidovudine, emtricitabine and PIs lopinavir/ritonavir and atazanavir.

[1]Based on *Stanford Database for HIV Drug Resistance Mutation:* https://hivdb.stanford.edu/pages/download/resistanceMutations_handout.pdf

[2]Unweighted figures, from a total of 35 cases.

Table 11.6.B HIV Subtype

Percent distribution of HIV-positive adults aged 15-59 years that that underwent genotyping, by HIV subtype, LePHIA 2016-2017

	Total	
	Percent	Number
Subtype A	0.0	0
Subtype B	0.0	0
Subtype C	100.0	148
Subtype D	0.0	0
Subtype G	0.0	0
Recombinant	0.0	0
Total	100.0	148

Unweighted figures

11.7 Gaps and Unmet Needs

- Almost half of adults living with HIV, but previously unaware of their HIV-positive status, had a CD4 count less than 350 cells/µL at HIV diagnosis.
- Severe immunosuppression was common among older adolescent boys suggesting long-term infection and limited uptake of HIV services. However, numbers were very small and should be validated using additional data sources.
- Older people over the age of 55 years appeared vulnerable to late diagnosis with severe immunosuppression. There is a need for further investigation within this high-risk population to understand this pattern and validate in other cohorts.

11.8 References

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12 PREVENTION OF MOTHER-TO-CHILD TRANSMISSION

12.1 Key Findings

- In Lesotho, 97.1% of women aged 15-49 years who delivered in the three years preceding the survey attended at least one antenatal care visit for their most recent birth.
- PMTCT: Among women aged 15-49 years who delivered in the 12 months preceding the survey, 95.6% knew their HIV status, while 98.5% of HIV-positive women who gave birth in the 12 months preceding the survey received ART.
- Among infants born in the previous 17 months to HIV-positive mothers, 2.8% were confirmed to be HIV positive according to the virologic testing conducted as part of LePHIA.

12.2 Background

Pregnant women living with HIV are at high risk of transmitting HIV to their infants during pregnancy, during birth, or through breastfeeding. Over 90% of new infections among infants and young children occur through mother-to-child transmission (MTCT). Without any interventions, between 20% and 45% of infants may become infected, with an estimated risk of 5-10% during pregnancy, 10-20% during labor and delivery, and 5-20% through breastfeeding.[1] In 2010, global targets were set to decrease new HIV infections in children and reduce mortality among mothers living with HIV, including a 90% reduction in child HIV infections, a 50% reduction in AIDS-related maternal deaths, and elimination of MTCT.[2]

To prevent MTCT, the WHO recommends a comprehensive four-pronged approach including: (1) primary prevention of HIV infection among women of childbearing age; (2) preventing unintended pregnancies among women living with HIV; (3) preventing HIV transmission from women living with HIV to their infants; and (4) providing appropriate treatment, care, and support to mothers living with HIV and their children and families.[2] Since 2016, WHO/UNICEF guidance has recommended that mothers living with HIV should breastfeed for at least 12 months and may continue breastfeeding for 24 months or longer while being fully supported for adherence on ART.

In 2013 Lesotho started implementation of Option B+, whereby pregnant women are started on lifelong ART as soon as they are diagnosed with HIV.[3] Lesotho has established an Elimination of Transmission of HIV and Syphilis Plan which outlines strategies for care and treatment.[4] This chapter describes antenatal care (ANC) attendance; breastfeeding practices; awareness of a woman's HIV status prior to or during pregnancy; use of ART during pregnancy in women who were aware of their HIV-positive status during pregnancy; and infant HIV testing to detect HIV infection.

12.3 Antenatal Care Attendance

Almost all women (97.1%) aged 15-49 years who delivered in the three years preceding the survey attended at least one ANC visit for their most recent birth. There was negligible variation by urban/rural residence, district, marital status, education, or age, with all above 90.0% (Table 12.3.A).

Table 12.3.A Antenatal care

Among women aged 15-49 years who delivered in the three years preceding the survey, percentage who attended at least one antenatal care visit for her most recent birth, by selected demographic characteristics, LePHIA 2016-2017

Characteristic	Percentage who attended at least one ANC visit	Number
Residence		
Urban	97.5	553
Peri-urban	100.0	82
Rural	96.5	894
District		
Maseru	96.1	330
Mafeteng	96.9	160
Mohale's Hoek	96.9	123
Leribe	98.0	259
Berea	98.3	171
Quthing	98.8	87
Butha Buthe	99.0	107
Mokhotlong	99.0	107
Qacha's Nek	93.5	103
Thaba Tseka	98.5	70
Marital status		
Never married / lived together	97.6	209
Married or living together	97.6	1,165
Divorced or separated	92.4	95
Widowed	92.5	59
Education		
No education	*	16
Primary	95.5	597
Secondary	97.6	779
College / University	100.0	123
Graduate / post-graduate	*	14
Wealth quintile		
Lowest	95.2	395
Second	96.7	345
Middle	95.9	288
Fourth	98.4	259
Highest	100.0	237
Religion		
Roman Catholic	97.2	605
Lesotho Evangelical	99.1	237
Anglican	95.8	92
Pentecostal	95.5	167
Other Christian	97.0	311
Other religion	95.7	110
Don't know	*	6
Age		
15-19	97.9	118
20-24	96.8	508
25-29	98.6	402
30-34	96.8	274
35-39	94.7	158
40-44	96.9	60
45-49	*	9
Total 15-24	97.0	626
Total 15-49	97.1	1,529

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

12.4 Breastfeeding

Almost a quarter of infants (23.9%) were no longer breastfeeding by 9 months, and over a third (35.7%) of infants had been weaned before 12 months. Significantly fewer HIV-positive women were breastfeeding at the time of the survey; 28.2% of HIV-positive women and 43.3% of HIV-negative women. Furthermore, significantly more HIV-positive women (9.8%) had never breastfed their last-born child, as compared to HIV-negative women (2.6%) (Table 12.4.A).

Table 12.4.A Breastfeeding status by child's age and mother's HIV status

Percent distribution of last-born children born to women ages 15-49 years in the three years preceding the survey by breastfeeding status, by child's age and mother's HIV status, LePHIA 2016-2017

Characteristic	Never breastfed	Ever breastfed, but not currently breastfeeding	Currently breastfeeding	Total	Number
Child's age (months)					
0-1	4.6	19.5	75.8	100.0	90
2-3	3.2	27.4	69.4	100.0	104
4-5	5.7	21.7	72.6	100.0	97
6-8	4.5	23.9	71.6	100.0	161
9-11	7.2	35.7	57.1	100.0	140
12-17	3.9	50.4	45.7	100.0	259
18-23	5.2	74.8	20.0	100.0	230
24-36	5.8	91.2	2.9	100.0	431
Result of mother's PHIA survey HIV test					
HIV positive	9.8	61.9	28.2	100.0	397
HIV negative	2.6	54.1	43.3	100.0	1,026
Not tested	12.4	57.3	30.4	100.0	91
Total	5.1	56.4	38.5	100.0	1,514

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.

12.5 Awareness of Mother's HIV Status

Among all women who delivered within the 12 months preceding the survey, 16.4% reported that they were already aware of their HIV-positive status when they went to the ANC, and 4.6% reported that they learned that they were HIV-positive when they were tested at their ANC visit (74.7% reported that they tested HIV-negative at their ANC visit). Overall, 95.6% reported that they knew their HIV status during their pregnancy, ranging from 91.3% in Mohale's Hoek to 97.1% in Butha Buthe. There was little geographic variation in whether they had known their status prior to becoming pregnant or whether they were tested as part of ANC. There was no significant variation in awareness across residence, marital status, religion, and education (Table 12.5.A).

Table 12.5.A Prevention of mother-to-child transmission: known HIV status

Among women aged 15-49 years who gave birth within the past 12 months, percentage who were tested for HIV during antenatal care and received their results or who already knew they were HIV positive, by selected demographic characteristics, LePHIA 2016-2017

	Tested for HIV during ANC and received results				
Characteristic	Percentage who tested HIV positive	Percentage who tested HIV negative	Percentage who already knew they were HIV positive	Total percentage with known HIV status[1]	Number of women who gave birth within the past 12 months
Residence					
Urban	4.6	68.1	21.8	94.5	183
Peri-urban	(9.7)	(79.2)	(8.6)	(97.6)	33
Rural	4.1	78.0	14.0	96.1	362
District					
Maseru	2.5	71.8	21.2	95.5	127
Mafeteng	4.8	73.5	18.3	96.6	54
Mohale's Hoek	8.7	61.6	21.0	91.3	51

Table 12.5.A Prevention of mother-to-child transmission: known HIV status (continued)

Among women aged 15-49 years who gave birth within the past 12 months, percentage who were tested for HIV during antenatal care and received their results or who already knew they were HIV positive, by selected demographic characteristics, LePHIA 2016-2017

Characteristic	Tested for HIV during ANC and received results				Number of women who gave birth within the past 12 months
	Percentage who tested HIV positive	Percentage who tested HIV negative	Percentage who already knew they were HIV positive	Total percentage with known HIV status[1]	
District (cont.)					
Leribe	6.9	75.1	14.2	96.3	103
Berea	2.6	82.0	12.6	97.2	70
Quthing	(5.5)	(73.2)	(15.5)	(94.2)	37
Butha Buthe	(2.9)	(82.4)	(11.9)	(97.1)	35
Mokhotlong	(14.3)	(64.6)	(15.1)	(94.0)	34
Qacha's Nek	*	*	*	*	22
Thaba Tseka	(0.0)	(85.2)	(12.4)	(97.6)	45
Marital status					
Never married / lived together	5.3	76.9	11.1	93.3	81
Married or living together	4.2	76.7	14.8	95.6	454
Divorced or separated	(12.6)	(50.0)	(37.4)	(100.0)	27
Widowed	*	*	*	*	16
Education					
No education	*	*	*	*	5
Primary	5.7	65.9	21.6	93.2	225
Secondary	4.4	78.2	14.3	96.9	303
College / University	(1.9)	(95.4)	(2.7)	(100.0)	39
Graduate / post-graduate	*	*	*	*	6
Wealth quintile					
Lowest	4.2	78.2	14.4	96.8	159
Second	3.2	77.2	14.0	94.4	136
Middle	7.2	64.4	21.3	92.9	117
Fourth	5.5	73.8	18.9	98.1	93
Highest	3.0	79.7	13.9	96.6	71
Religion					
Roman Catholic	4.8	72.2	16.9	93.9	240
Lesotho Evangelical	3.3	83.7	9.0	96.0	91
Anglican	(2.8)	(79.4)	(17.8)	(100.0)	35
Pentecostal	7.7	74.9	13.8	96.5	64
Other Christian	4.8	73.2	19.0	97.0	104
Other religion	(1.4)	(68.4)	(27.1)	(97.0)	40
Don't know	*	*	*	*	3
Age					
15-19	2.3	88.3	4.2	94.8	77
20-24	3.3	85.4	10.2	98.9	192
25-29	5.8	71.6	19.0	96.4	147
30-34	7.4	64.1	23.0	94.5	99
35-39	(3.7)	(48.0)	(33.9)	(85.7)	48
40-44	*	*	*	*	12
45-49	*	*	*	*	3
Total 15-24	3.0	86.2	8.5	97.8	269
Total 15-49	4.6	74.7	16.4	95.6	578

[1]Relates to PEPFAR PMTCT_STAT_NAT / SUBNAT

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.

Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

12.6 Antiretroviral Therapy Among HIV-Positive Pregnant Women

Among HIV-positive women who delivered in the 12 months preceding the survey, 98.5% reported receiving ART during their pregnancy: 59.0% were already taking ART at the time of their first ANC visit and 39.5% were newly initiated on ART during pregnancy or during labor and delivery (Table 12.6.A).

Table 12.6.A Prevention of mother-to-child transmission: HIV-positive pregnant women who received antiretrovirals (ARVs)

Among HIV-positive women aged 15-49 years who gave birth within the past 12 months, percentage who received ARVs during pregnancy to reduce the risk of MTCT, by selected demographic characteristics, LePHIA 2016-2017

Characteristic	Percentage who were already on ARVs prior to pregnancy	Percentage who were newly initiated on ARVs during pregnancy or labor and delivery	Total percentage who received ARVs[1]	Number of HIV-positive women who gave birth within the past 12 months
Residence				
Urban	(64.3)	(35.7)	(100.0)	47
Peri-urban	*	*	*	7
Rural	57.4	39.6	97.1	68
District				
Maseru	(67.2)	(32.8)	(100.0)	30
Mafeteng	*	*	*	11
Mohale's Hoek	*	*	*	16
Leribe	*	*	*	22
Berea	*	*	*	11
Quthing	*	*	*	8
Butha Buthe	*	*	*	5
Mokhotlong	*	*	*	10
Qacha's Nek	*	*	*	2
Thaba Tseka	*	*	*	7
Marital status				
Never married / lived together	*	*	*	14
Married or living together	61.1	37.8	98.9	85
Divorced or separated	*	*	*	14
Widowed	*	*	*	9
Education				
No education	*	*	*	1
Primary	54.4	44.1	98.5	62
Secondary	64.1	34.3	98.4	56
College / University	*	*	*	2
Graduate / post-graduate	*	*	*	1
Wealth quintile				
Lowest	(53.2)	(40.1)	(93.3)	31
Second	(66.2)	(33.8)	(100.0)	25
Middle	(63.1)	(36.9)	(100.0)	32
Fourth	*	*	*	21
Highest	*	*	*	13
Religion				
Roman Catholic	63.1	35.2	98.3	54
Lesotho Evangelical	*	*	*	11
Anglican	*	*	*	7
Pentecostal	*	*	*	13
Other Christian	*	*	*	24
Other religion	*	*	*	12
Don't know	*	*	*	1
Age				
15-19	*	*	*	5
20-24	(52.7)	(43.7)	(96.4)	27
25-29	(62.6)	(37.4)	(100.0)	36
30-34	(50.9)	(46.2)	(97.1)	31
35-39	*	*	*	18
40-44	*	*	*	4
45-49	*	*	*	1
Total 15-24	(52.3)	(44.7)	(97.0)	32
Total 15-49	59.0	39.5	98.5	122

Table 12.6.A	Prevention of mother-to-child transmission: HIV-positive pregnant women who received antiretrovirals (ARVs) (conclusion)

[1]Relates to Global AIDS Monitoring indicator 2.3: Preventing the mother-to-child transmission of HIV, and PMTCT_ARV_NAT / SUBNAT
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.
Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

12.7 Mother-to-Child Transmission

Among infants born in the 17 months preceding the survey to HIV-positive mothers aged 15-49 years and alive at the time of the survey, 2.8% tested positive for infection by HIV TNA PCR. Among those whose mothers reported ever breastfeeding, 2.1% were HIV positive. Among last-born infants of women who were already on ART at their first ANC visit, 2.6% were HIV positive—however, this estimate should be interpreted with caution as it was based upon a small number (n=35). At the time of the survey, 20.9%, (19/91) of all mothers who had delivered 17 months preceding the survey did not have VLS. (Table 12.7.A.)

Table 12.7.A Mother-to-child transmission of HIV

Among infants born in the last 17 months to HIV-positive women aged 15-49 years, percentage confirmed positive for HIV infection, by mother's self-reported ARV and breastfeeding status, LePHIA 2016-2017

Characteristic	Percentage of infants confirmed HIV-positive[1, 2]	Number of infants born to HIV-positive women[3, 4]
Mother's self-reported ARV status		
Mother unaware of HIV status during pregnancy	*	17
Already on ARVs at first antenatal visit	(2.6)	35
Newly initiated on ARVs during pregnancy or labor and delivery	*	22
Did not receive ARVs during pregnancy	*	3
Missing self-reported ARV status	*	14
Maternal viral load in LePHIA		
Suppressed	2.3	72
Unsuppressed	*	19
Mother's self-reported breastfeeding status		
Ever breastfed the infant	2.1	80
Never breastfed the infant	*	4
Missing self-reported breastfeeding status	*	7
Total 0-11 months	2.6	63
Total 0-17 months	2.8	91

[1]Relates to Global AIDS Monitoring indicator 2.2: Mother-to-child transmission of HIV; [2]Includes only infants who were tested for HIV during the PHIA survey.
[2]Infants confirmed as HIV positive by virological testing (virological testing was only conducted among infants who had a reactive screening test).
[3]Includes only infants who were tested for HIV during the PHIA survey.
[4]Women who tested HIV positive during the PHIA survey.
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.
Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

12.8 Gaps and Unmet Needs

- Contrary to the current PMTCT National Guidelines,[3] HIV-positive women less frequently breastfed compared to HIV-negative women. However, these pregnancies preceded the change in guidelines on breastfeeding for HIV-positive women. More recent data can allow an assessment of breastfeeding in the era of universal treatment.
- Despite progress on PMTCT in Lesotho, one in 36 infants born to HIV-positive mothers has become HIV positive. Although a large proportion of these infants were born to a mother already on ART prior to ANC, one in five (20.9%) of the infants' mothers did not have VLS at the time of the survey (although this might not reflect their status during pregnancy and labor).
- The prevalence of early weaning suggests that WHO guidelines on breastfeeding for a minimum of 12 months should be reinforced in ANC.

12.9 References

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13 YOUNG PEOPLE

13.1 Key Findings

- Among young people, including older adolescents and young adults aged 15-24 years, 12.7% reported having sexual intercourse before the age of 15 years; it was far more commonly reported by young men (20.6%) than young women (4.7%). (Note: in this chapter, the terms young men and women include older adolescents, unless an age bracket is specifically indicated).
- Only 28.3% of young people correctly responded to all questions in a set that assessed knowledge of HIV transmission and prevention (26.0% of young men and 30.7% of young women).
- Annual incidence of HIV infection among young people was estimated at 0.78% (95% CI 0.31-1.25%), and was high in young women (1.49%).
- HIV prevalence in older adolescents (those aged 15-19 years) was 4.2% (2.8% in older adolescent boys and 5.7% in older adolescent girls) and 10.4% in young adults aged 20-24 years (4.0% in young men and 16.7% in young women).
- Based on self-report and detection of ARVs in blood, 67.6% of young people living with HIV had been diagnosed with HIV (71.3% of young men and 66.4% of young women), and among those who had been previously diagnosed, 90.6% were on ART. Only 77.2% of young people on ART had VLS.

13.2 Background

One-third of the population of sub-Saharan Africa is aged between 10-24 years, a phenomenon often referred to as the youth bulge.[1] Studies have shown that young people aged 15-24 years are more likely to engage in risky sexual behaviors than older adults and have less frequent contact with the healthcare system. Control of HIV in this demographic is critical for long-term epidemic control but is also particularly challenging.

The PEPFAR DREAMS program (Determined, Resilient, Empowered, AIDS-free, Mentored and Safe) was rolled out in two key districts (Maseru and Berea) in Lesotho in 2016.[2,3] This private-public partnership was designed to empower adolescent girls and young women by providing them with long-term skills by supporting education; strengthening families and communities to counteract harmful local gender norms; and improving coverage of contraception, condoms, and HIV testing services.

This chapter presents the prevalence of early sexual debut, defined as sexual intercourse before the age of 15 years, among young people by marital status, region, and socio-demographic characteristics. It also describes their knowledge of HIV prevention. These data were measured by asking participants to agree or disagree with both accurate and inaccurate statements about HIV prevention. This chapter also describes HIV incidence, prevalence, and the 90-90-90 cascade for young people.

13.3 Sexual Intercourse Before the Age of 15 Years

Among young people, 12.7% reported early sexual debut; this was four times higher among young men (20.6%) than among young women (4.7%). The percentage reporting early sexual debut was higher in certain districts, with over one in four young men reporting early sexual debut in the districts of

Quthing, Mokhotlong, Qacha's Nek, and Thaba Tseka. Among those who attended secondary school, a significantly lower percentage (10.6%) reported early sexual debut compared to those who had only attended primary school (18.3%). There was no difference between the proportion reporting early sexual debut by geographic residence, wealth quintile, religion, or age (Table 13.3.A).

Table 13.3.A Sex before the age of 15 years

Percentage of young people aged 15–24 years who have had sexual intercourse before the age of 15 years; by sex and selected demographic characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percentage who had sex before age 15	Number	Percentage who had sex before age 15	Number	Percentage who had sex before age 15	Number
Residence						
Urban	19.7	606	4.6	985	11.5	1,591
Peri-urban	19.4	161	1.0	186	10.6	347
Rural	21.4	1,067	5.4	1,320	13.9	2,387
District						
Maseru	18.4	467	4.1	619	11.3	1,086
Mafeteng	23.6	217	2.8	244	14.1	461
Mohale's Hoek	20.3	114	6.1	184	12.6	298
Leribe	18.0	291	5.0	407	11.6	698
Berea	19.0	269	4.4	342	12.0	611
Quthing	28.3	110	11.9	130	20.4	240
Butha Buthe	20.9	133	3.2	153	12.8	286
Mokhotlong	27.1	75	5.7	166	13.9	241
Qacha's Nek	32.1	65	4.5	110	17.4	175
Thaba Tseka	25.6	93	4.2	136	14.5	229
Marital status						
Never married / lived together	20.6	1,675	3.6	1,607	13.5	3,282
Married or living together	18.6	137	6.3	811	8.8	948
Divorced or separated	*	17	15.0	54	22.1	71
Widowed	*	1	*	16	*	17
Education						
No education	(20.5)	46	*	24	16.3	70
Primary	23.7	652	10.0	585	18.3	1,237
Secondary	19.5	1,039	3.3	1,714	10.6	2,753
College / University	13.7	96	1.9	164	7.2	260
Graduate / post-graduate	*	1	*	4	*	5
Wealth quintile						
Lowest	25.0	294	6.6	486	15.0	780
Second	21.3	389	5.1	490	13.5	879
Middle	19.8	410	6.3	554	13.1	964
Fourth	19.6	410	3.2	500	11.9	910
Highest	19.2	323	2.6	454	10.7	777
Religion						
Roman Catholic	21.4	757	4.5	973	13.3	1,730
Lesotho Evangelical	22.4	321	3.3	367	13.6	688
Anglican	19.8	120	4.4	161	12.0	281
Pentecostal	21.4	132	7.3	235	13.5	367
Other Christian	18.2	297	4.8	556	10.4	853
Other religion	19.4	150	5.5	186	12.8	336
Don't know	(12.8)	44	*	12	11.9	56
Age						
15-19	21.0	987	4.8	1,242	13.0	2,229
20-24	20.3	847	4.6	1,249	12.4	2,096
Total 15-24	20.6	1,834	4.7	2,491	12.7	4,325

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

13.4 Knowledge About HIV Prevention

LePHIA also collected information on knowledge of HIV prevention, by asking two questions about prevention of sexual transmission of HIV and three questions related to common misconceptions about contracting HIV. Comprehensive knowledge of HIV was defined as knowing that having just one HIV-negative, faithful partner and using condoms during each sexual act can reduce the chances of acquiring HIV, and that a healthy-looking person can have HIV, and rejecting that a person can get HIV from mosquito bites and sharing food with someone who is HIV positive.

Among young people, only 28.3% displayed comprehensive knowledge of HIV; 26.0% of young men answered all five HIV knowledge questions correctly and 30.7% of young women. Young people in urban areas had a higher proportion (32.1%) with comprehensive knowledge of HIV, compared to those in rural areas (24.9%). Geographically, the highest proportion that responded to all five questions correctly was in Berea (31.6%) and the lowest proportion was in Mohale's Hoek (22.8%). The percentage of those with comprehensive knowledge varied in terms of education and wealth, where 18.2% of those with a primary education answered correctly compared to 31.4% of those with a secondary education, and 22.8% of those in the lowest wealth quintile answered correctly compared to 36.4% of those in the highest wealth quintile. It did not vary by age group. Most young people (86.3%) answered correctly about the protective use of condoms, whereas only 52.8% answered correctly that you could not acquire HIV from a mosquito bite (Tables 13.4.A, 13.4.B, and 13.4.C).

Table 13.4.A Young people, knowledge about HIV prevention: Young men

Among older adolescent boys and young men aged 15-24 years, percentage who correctly identify both ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission,[1] by selected demographic characteristics, LePHIA 2016-2017

	Percentage who correctly answered the questions:						
Characteristic	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Can a person reduce the risk of getting HIV by using a condom every time they have sex?	Can a healthy-looking person have HIV?	Can a person get HIV from mosquito bites?	Can a person get HIV by sharing food with someone who is infected?	All five questions	Number[2]
Residence							
Urban	77.4	90.9	83.1	56.0	84.3	33.0	319
Peri-urban	84.1	92.8	90.6	42.0	83.8	25.4	81
Rural	72.3	84.3	71.1	47.5	73.4	21.6	551
District							
Maseru	78.9	89.6	81.4	53.5	77.6	30.1	249
Mafeteng	74.8	85.5	73.3	38.7	71.8	20.0	112
Mohale's Hoek	74.1	84.9	69.9	54.9	82.4	24.7	60
Leribe	72.3	85.9	77.9	45.1	78.5	20.6	154
Berea	77.7	88.9	80.9	52.7	84.5	31.9	134
Quthing	78.0	84.4	78.3	59.6	70.9	28.8	57
Butha Buthe	63.2	93.1	70.6	38.6	84.7	19.9	67
Mokhotlong	(64.9)	(89.6)	(82.7)	(47.8)	(80.4)	(28.6)	41
Qacha's Nek	(73.1)	(75.2)	(71.7)	(51.8)	(69.0)	(23.3)	35
Thaba Tseka	(75.7)	(79.3)	(50.9)	(61.2)	(69.8)	(15.8)	42
Marital status							
Never married / lived together	75.0	87.5	76.1	51.3	78.8	26.2	855
Married or living together	76.8	86.9	87.6	37.1	70.4	23.4	82
Divorced or separated	*	*	*	*	*	*	11
Widowed	*	*	*	*	*	*	1
Education							
No education	(56.5)	(72.6)	(70.8)	(30.5)	(64.2)	(15.7)	25
Primary	66.8	79.2	60.0	49.4	64.2	16.5	344
Secondary	80.3	92.2	87.1	50.2	86.6	30.8	534
College / University	(83.5)	(96.2)	(85.0)	(62.2)	(86.3)	(42.4)	47
Graduate / post-graduate	*	*	*	*	*	*	1
Wealth quintile							
Lowest	67.0	81.2	65.0	54.2	67.8	23.1	164

Table 13.4.A Young people, knowledge about HIV prevention: Young men (continued)

Among older adolescent boys and young men aged 15-24 years, percentage who correctly identify both ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission,[1] by selected demographic characteristics, LePHIA 2016-2017

	Percentage who correctly answered the questions:						
Characteristic	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Can a person reduce the risk of getting HIV by using a condom every time they have sex?	Can a healthy-looking person have HIV?	Can a person get HIV from mosquito bites?	Can a person get HIV by sharing food with someone who is infected?	All five questions	Number[2]
Wealth quintile (cont.)							
Second	76.6	85.3	71.8	45.4	74.9	20.8	200
Middle	75.4	86.3	74.5	44.3	72.8	17.0	201
Fourth	78.3	90.3	83.6	48.0	86.6	30.2	210
Highest	76.5	93.0	87.6	59.3	85.6	37.7	172
Religion							
Roman Catholic	74.8	88.4	76.4	50.0	77.5	23.3	394
Lesotho Evangelical	77.6	85.4	80.2	52.3	77.8	30.9	163
Anglican	72.2	82.4	79.7	52.3	83.6	30.6	54
Pentecostal	69.7	89.8	73.3	44.3	70.5	22.3	75
Other Christian	75.8	87.1	77.5	51.8	82.0	28.4	158
Other religion	84.8	89.7	80.8	51.5	79.0	29.0	71
Don't know	(69.4)	(88.3)	(75.0)	(35.2)	(74.4)	(22.1)	28
Age							
15-19	72.3	85.0	72.2	53.8	75.9	26.0	486
20-24	78.3	90.0	82.4	45.8	80.6	25.9	465
Total 15-24	75.2	87.4	77.1	49.9	78.2	26.0	951

[1]Relates to Global AIDS Monitoring indicator 5.1: Young people: Knowledge about HIV prevention; [2]Includes only participants who answered all five questions.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 13.4.B Young people, knowledge about HIV prevention: Young women

Among older adolescent girls and young women aged 15-24 years, percentage who correctly identify both ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission,[1] by selected demographic characteristics, LePHIA 2016-2017

	Percentage who correctly answered the questions:						
Characteristic	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Can a person reduce the risk of getting HIV by using a condom every time they have sex?	Can a healthy-looking person have HIV?	Can a person get HIV from mosquito bites?	Can a person get HIV by sharing food with someone who is infected?	All five questions	Number[2]
Residence							
Urban	76.1	87.1	84.0	55.5	91.1	31.3	507
Peri-urban	82.2	88.0	87.0	65.2	85.9	42.2	88
Rural	75.7	83.4	79.3	54.5	84.4	28.5	708
District							
Maseru	73.8	85.6	84.5	59.2	91.1	32.7	307
Mafeteng	76.6	90.8	83.2	52.9	86.2	26.2	126
Mohale's Hoek	71.9	79.9	72.8	54.7	84.5	21.3	100
Leribe	80.2	88.4	87.3	51.5	89.5	32.7	219
Berea	80.3	85.4	84.5	55.7	86.9	31.3	181
Quthing	69.5	76.1	74.3	61.7	71.3	29.4	76
Butha Buthe	76.6	85.0	81.1	51.7	85.5	34.2	79
Mokhotlong	77.7	82.7	68.5	46.6	84.1	25.0	85
Qacha's Nek	76.1	76.9	83.7	57.2	85.7	32.4	54
Thaba Tseka	76.1	85.3	69.7	63.7	83.7	32.3	76
Marital status							
Never married / lived together	73.2	83.7	80.1	58.2	87.1	29.5	840
Married or living together	83.4	88.1	85.1	50.7	87.9	33.4	422
Divorced or separated	(68.5)	(93.6)	(81.7)	(47.7)	(85.1)	(25.4)	31
Widowed	*	*	*	*	*	*	7

Table 13.4.B Young people, knowledge about HIV prevention: Young women (continued)

Among older adolescent girls and young women aged 15-24 years, percentage who correctly identify both ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission,[1] by selected demographic characteristics, LePHIA 2016-2017

	Percentage who correctly answered the questions:						
Characteristic	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Can a person reduce the risk of getting HIV by using a condom every time they have sex?	Can a healthy-looking person have HIV?	Can a person get HIV from mosquito bites?	Can a person get HIV by sharing food with someone who is infected?	All five questions	Number[2]
Education							
No education	*	*	*	*	*	*	14
Primary	67.6	78.8	68.2	52.9	79.4	20.9	311
Secondary	78.9	87.0	86.2	54.6	89.4	31.9	893
College / University	83.0	89.4	83.8	73.8	93.2	52.7	83
Graduate / post-graduate	*	*	*	*	*	*	2
Wealth quintile							
Lowest	70.1	77.5	72.2	52.0	80.3	22.5	262
Second	76.0	86.4	77.2	57.0	87.7	32.6	253
Middle	79.9	83.9	86.2	56.3	89.5	31.6	300
Fourth	77.4	89.2	87.2	50.5	88.6	31.6	270
Highest	77.2	88.9	84.8	63.2	89.0	35.0	216
Religion							
Roman Catholic	76.4	86.3	80.7	57.3	87.8	31.5	492
Lesotho Evangelical	78.4	85.3	88.3	59.8	86.2	34.1	180
Anglican	75.6	83.7	77.6	53.6	88.5	27.6	85
Pentecostal	77.7	81.5	87.5	50.9	86.2	30.5	131
Other Christian	75.7	85.9	78.2	56.2	87.6	30.5	306
Other religion	76.2	84.5	82.6	45.5	85.4	23.9	101
Don't know	*	*	*	*	*	*	8
Age							
15-19	70.0	82.4	77.1	58.0	86.2	27.8	660
20-24	83.0	88.2	86.6	53.4	88.3	33.8	643
Total 15-24	76.4	85.3	81.8	55.7	87.2	30.7	1,303

[1]Relates to Global AIDS Monitoring indicator 5.1: Young people: Knowledge about HIV prevention

[2]Includes only participants who answered all five questions

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 13.4.C Young people, knowledge about HIV prevention: Total

Among young people aged 15-24 years, percentage who correctly identify both ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission,[1] by selected demographic characteristics, LePHIA 2016-2017

	Percentage who correctly answered the questions:						
Characteristic	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Can a person reduce the risk of getting HIV by using a condom every time they have sex?	Can a healthy-looking person have HIV?	Can a person get HIV from mosquito bites?	Can a person get HIV by sharing food with someone who is infected?	All five questions	Number[2]
Residence							
Urban	76.7	88.9	83.6	55.7	87.9	32.1	826
Peri-urban	83.2	90.7	89.0	52.5	84.7	33.0	169
Rural	74.0	83.9	75.1	50.8	78.7	24.9	1,259
District							
Maseru	76.5	87.7	82.9	56.2	84.1	31.3	556
Mafeteng	75.6	87.9	77.8	45.2	78.4	22.9	238
Mohale's Hoek	72.9	82.1	71.5	54.8	83.6	22.8	160
Leribe	76.2	87.1	82.6	48.3	84.0	26.6	373
Berea	79.0	87.2	82.7	54.2	85.7	31.6	315
Quthing	73.7	80.2	76.3	60.7	71.1	29.1	133
Butha Buthe	69.4	89.4	75.4	44.6	85.1	26.5	146

Table 13.4.C Young people, knowledge about HIV prevention: Total (continued)

Among young people aged 15-24 years, percentage who correctly identify both ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission,[1] by selected demographic characteristics, LePHIA 2016-2017

	Percentage who correctly answered the questions:						
Characteristic	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Can a person reduce the risk of getting HIV by using a condom every time they have sex?	Can a healthy-looking person have HIV?	Can a person get HIV from mosquito bites?	Can a person get HIV by sharing food with someone who is infected?	All five questions	Number[2]
District (cont.)							
Mokhotlong	72.6	85.4	74.2	47.0	82.6	26.4	126
Qacha's Nek	74.7	76.1	77.8	54.5	77.5	27.9	89
Thaba Tseka	76.0	82.7	61.7	62.6	77.8	25.2	118
Marital status							
Never married / lived together	74.2	85.9	77.8	54.2	82.3	27.6	1,695
Married or living together	82.0	87.9	85.7	47.9	84.2	31.3	504
Divorced or separated	(68.9)	(89.1)	(78.3)	(50.3)	(86.9)	(28.6)	42
Widowed	*	*	*	*	*	*	8
Education							
No education	(57.8)	(75.0)	(70.1)	(40.8)	(66.7)	(14.9)	39
Primary	67.1	79.0	63.2	50.7	70.2	18.2	655
Secondary	79.6	89.4	86.6	52.6	88.1	31.4	1,427
College / University	83.2	92.3	84.3	68.8	90.2	48.3	130
Graduate / post-graduate	*	*	*	*	*	*	3
Wealth quintile							
Lowest	68.6	79.2	68.9	53.0	74.5	22.8	426
Second	76.3	85.8	74.4	51.0	81.1	26.4	453
Middle	77.8	85.0	80.7	50.6	81.6	24.6	501
Fourth	77.9	89.8	85.3	49.2	87.5	30.9	480
Highest	76.9	91.0	86.3	61.2	87.2	36.4	388
Religion							
Roman Catholic	75.5	87.4	78.4	53.4	82.3	27.1	886
Lesotho Evangelical	78.0	85.3	83.9	55.7	81.6	32.4	343
Anglican	74.0	83.1	78.6	53.0	86.2	29.0	139
Pentecostal	74.1	85.2	81.2	47.9	79.2	26.9	206
Other Christian	75.7	86.4	77.9	54.4	85.3	29.6	464
Other religion	80.5	87.1	81.7	48.5	82.2	26.5	172
Don't know	(65.3)	(88.1)	(75.2)	(41.4)	(76.5)	(23.3)	36
Age							
15-19	71.1	83.7	74.6	55.9	81.0	26.9	1,146
20-24	80.7	89.1	84.5	49.6	84.5	29.9	1,108
Total 15-24	75.8	86.3	79.4	52.8	82.7	28.3	2,254

[1]Relates to Global AIDS Monitoring indicator 5.1: Young people: Knowledge about HIV prevention; [2]Includes only participants who answered all five questions.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

13.5 HIV Incidence and Prevalence

Annual incidence among young people was estimated at 0.93% (95% CI 0.42-1.44%): 0.13% in young men and 1.81% in young women (Table 5.3.A). The annual incidence estimate, including ARV detection, was 0.78% (95% CI 0.31-1.25%): 0.13% in young men and 1.49% in young women (Table 5.3.B).

HIV prevalence among young people was 7.2% and almost three-fold higher in young women (11.1%) than in young men (3.4%). HIV prevalence was 2.8% and 4.0% in older adolescent boys and young men aged 20-24 years, respectively; and 5.7% and 16.7% in older adolescent girls and young women aged 20-24 years, respectively (Table 6.4.A).

13.6 HIV Testing, Treatment, and Viral Load Suppression

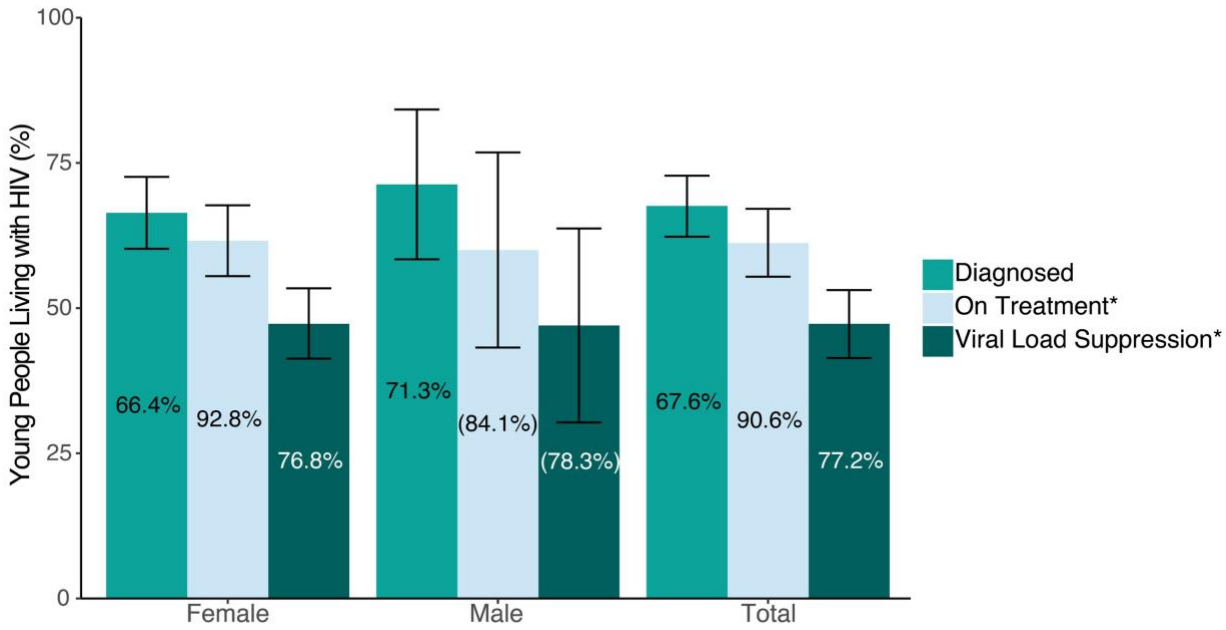
Among young people, 79.7% reported that they had ever tested for HIV and received their results, with a similar proportion of young men (77.1%) and young women (82.2%), and no difference between older adolescents and young adults. However, recent testing was less common, with 56.9% reporting testing in the 12 months preceding the survey (49.3% among young men and 64.6% among young women) (Tables 7.3.A, 7.3.B, and 7.3.C).

Among HIV-positive young people, 39.8% reported no previously diagnosis, while 52.7% reported taking ART, and 7.5% reported awareness of HIV status, but denied taking ART. There were more young men who reported awareness without ART (11.3%) than young women (6.3%) (Tables 8.3.A, 8.3.B, and 8.3.C). VLS was observed in only 51.0% of young people; there was no difference by age group or by sex, as VLS was documented in 51.3% of young men and 50.9% of young women (Tables 9.4.A and 9.4.B).

13.7 Status of the UNAIDS 90-90-90 Targets

Based on self-report and detection of ARVs in blood, it was estimated that 67.6% of young people living with HIV had previous HIV diagnosis (71.3% of young men and 66.4% of young women), and that among those who had been previously diagnosed, 90.6% were on ART (84.1% of young men and 92.8% of young women). Among those on treatment, only 77.2% had VLS (Table 10.3.B and Figure 13.7.A).

Figure 13.7.A Young people 90-90-90 (laboratory ARV-adjusted data among young people aged 15-24 years), LePHIA 2016-2017



[1]In the antiretroviral (ARV)-adjusted 90-90-90, participants were classified as 'aware' or 'diagnosed' if they self-reported HIV positive before testing HIV positive in LePHIA or had detectable ARVs in their blood. Participants were classified as 'on treatment' if they self-reported that they were on treatment or if they had detectable ARVs in their blood.
*Inset numbers are conditional proportions. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

13.8 Gaps and Unmet Needs

- Among young people, 72% lacked comprehensive knowledge about HIV transmission and prevention, with one in four not knowing that monogamy with an HIV-negative partner may reduce risk of transmission.
- Annual incidence was high among young women, indicating a need for improved prevention efforts in this population.
- Among young people living with HIV, almost forty percent (39.8%) had not been diagnosed, and among those diagnosed, 7.5% had not initiated ART. Among those on treatment, 22.8% did not have VLS. Of all young people living with HIV, almost half (49.0%) did not have VLS.

13.9 References

1. Hervish A, Clifton D. *The Status Report on Adolescents and Young People in Sub-Saharan Africa: Opportunities and Challenges.* Johannesburg and Washington, D.C.: Population Reference Bureau; 2012.

2. USAID. *DREAMS: Partnership to Reduce HIV/AIDS in Adolescent Girls and Young Women.* Washington D.C.: USAID; 2016. https://www.usaid.gov/what-we-do/global-health/hiv-and-aids/technical-areas/dreams. Accessed October 29, 2018.

3. PEPFAR. *Lesotho DREAMS overview.* Washington, D.C.: PEPFAR; 2016. https://www.pepfar.gov/documents/organization/253956.pdf. Accessed October 29, 2018.

14 CHILDREN

14.1 Key Findings

- The estimated HIV prevalence among children (aged 0-14 years) was 2.1%.
- **Diagnosed:** Based on parents' report and ARV detection data, it was estimated that in Lesotho, 81.1% of children living with HIV were aware of their status.
- **On treatment:** Based on parents' report and ARV detection data, it was estimated that 98.2% of HIV-positive children who had been previously diagnosed were on ART. Lesotho appeared to have achieved almost universal treatment of diagnosed HIV-positive children.
- **Suppressed viral load:** Among children who were on ART, 73.9% had VLS.

14.2 Background

Estimates of HIV prevalence in children, the number of children living with HIV, and VLS among children are most commonly derived indirectly from clinic-based data or epidemiologic models. LePHIA provided direct measurements of these estimates among children, which are critical for meeting the needs of pediatric HIV treatment; planning for HIV prevention, care, and treatment services for children; evaluating PMTCT programs; and addressing specific needs of young adolescents (those aged 10-14 years).

This chapter presents results on the UNAIDS 90-90-90 cascade in children, using both parent/guardian-reported data (on awareness of child's HIV status and ARV use) and data on detectable ARVs. Analyses for the 90-90-90 tables for children were similar to that described for adults in Chapter 10. Parents or guardians were asked about a child's HIV status and ART use. Data on detectable ARVs were used in combination with self-reported ARV use to correct awareness of HIV-positive status and ARV status of the child. The presence of detectable ARVs among children who were reported as HIV negative was used to reclassify the child as aware.

14.3 HIV Prevalence

Overall, 2.1% of children were living with HIV (1.5% of boys and 2.6% of girls). HIV prevalence was 1.0% among those under the age of five years, 1.9% among those aged 5-9 years, and 3.2% among young adolescents. Prevalence was significantly higher among girls (2.9%) than boys aged 5-9 years (0.9%) (Table 6.4.A).

14.4 Status of the UNAIDS 90-90-90 Targets

90-90-90 cascade based on guardian-reported HIV status and ART use in children:

Among all HIV-positive children, parents/guardians reported 74.0% as known HIV positive, 97.7% as receiving ARV, and 74.2% as having VLS (Table 14.4.A).

90-90-90 cascade based on guardian-reported HIV status and ART use and/or detectable ARV children:

ARV-adjusted awareness of HIV-positive status: Based on guardian-reported HIV-positive status of the child and/or presence of detectable ARV, 81.1% of HIV-positive children were classified as aware (ARV-adjusted awareness) (Table 14.4.B).

ARV-adjusted treatment status: Using guardian-reported ARV status of the child and/or detectable ARVs, 98.2% of children with awareness of HIV-positive status (ARV-adjusted awareness) were classified as being on ART.

Viral load suppression: Among children with ARV-adjusted treatment status, 73.9% had VLS (Table 14.4.B, Figure 14.4.A).

Table 14.4.A Pediatric 90-90-90 (parent-reported antiretroviral therapy (ART) data; conditional percentages)

90-90-90 targets among children living with HIV aged 0-14 years, by age LePHIA 2016-2017

	Diagnosed		On Treatment		Viral Load Suppression (VLS)	
	Total		Among children whose parent reported that the child is HIV positive		Among children whose parent reported that the child is on ART	
Age	Percentage whose parent reported that the child is HIV positive	Number	Percentage whose parent reported that the child is on ART	Number	Percentage with VLS	Number
0-17 months	*	2	*	2	*	2
18-59 months	*	9	*	4	*	4
0-4 years	*	11	*	6	*	6
5-9 years	*	21	*	18	*	18
10-14 years	(72.3)	33	*	24	*	23
0-14 years	74.0	65	(97.7)	48	(74.2)	47

Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

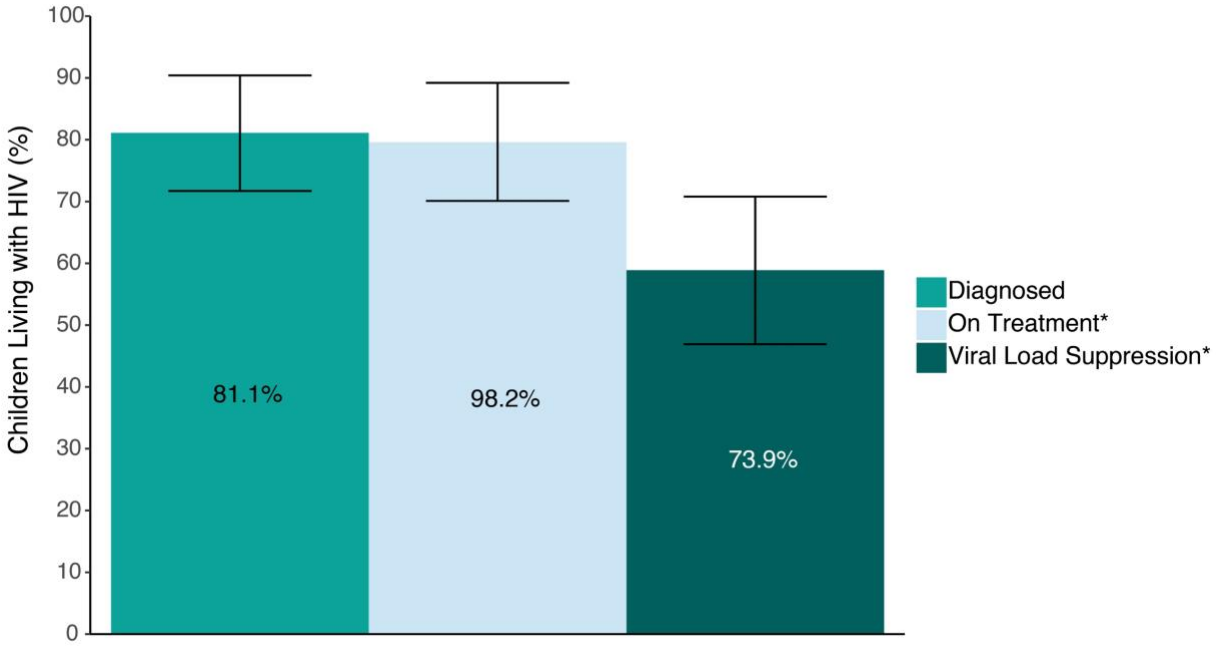
Table 14.4.B Pediatric 90-90-90 (parent-reported antiretroviral therapy (ART) data and laboratory antiretroviral (ARV) data; conditional percentages)

90-90-90 targets among children living with HIV aged 0-14 years, by age LePHIA 2016-2017

	Diagnosed		On Treatment		Viral Load Suppression (VLS)	
	Total		Total		Total	
Age	Percentage whose parent reported that the child is HIV positive AND/OR with detectable ARVs[1]	Number	Percentage with detectable ARVs AND/OR whose parent reported current ARV usage for the child[2]	Number	Percentage with VLS [3]	Number
0-17 months	*	2	*	2	*	2
18-59 months	*	9	*	4	*	4
0-4 years	*	11	*	16	*	6
5-9 years	*	23	*	22	*	22
10-14 years	(79.6)	44	(96.7)	35	(81.9)	34
0-14 years	81.1	78	98.2	63	73.9	62

[1]Relates to Global AIDS Monitoring indicator (GAM) 1.1: People living with HIV who know their HIV status, and PEPFAR DIAGNOSED_NAT; [2]Relates to GAM 1.2: People living with HIV on antiretroviral therapy, and PEPFAR TX_CURR_NAT / SUBNAT; [3]Relates to GAM 1.4: People living with HIV who have suppressed viral loads, and PEPFAR VL_SUPPRESSION_NAT
Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Figure 14.4.A Pediatric 90-90-90 (laboratory antiretroviral (ARV)-adjusted data among children aged 0-14 years), LePHIA 2016-2017



[1]In the antiretroviral (ARV)-adjusted 90-90-90, children were classified as 'aware' or 'diagnosed' if their parents or guardian reported that they were HIV positive before testing HIV positive in LePHIA or if they had detectable ARVs in their blood. Children were classified as 'on treatment' if their guardian reported that they were on treatment or if they had detectable ARVs in their blood.
*Inset numbers are conditional proportions.

14.5 Gaps and Unmet Needs

- Almost one in five children living with HIV had not been diagnosed. Programs should prioritize more efficient case finding strategies, including systematic infant HIV exposure screening and virologic testing throughout breastfeeding and index testing strategies that target biologically at-risk children or siblings of ART patients who have unknown HIV status.
- Among children living with HIV on ART, close to 30% had not achieved VLS. This indicates a need to strengthen adherence support and drug resistance screening for the pediatric population in Lesotho.

15 HIV Risk Factors

15.1 Key Findings

- HIV prevalence among those who reported an early sexual debut (before 15 years of age) was 21.4%, but was nearly three times as high for women (41.6%) as for men (14.4%).
- HIV prevalence in women who reported ever engaging in paid sexual intercourse was 48.2% and 46.2% in those who reported paid intercourse in the 12 months preceding the survey.
- Among sexually active participants, 49.6% reported having sex with a non-marital or non-cohabitating partner in the 12 months preceding the survey; this was reported by significantly more men (59.8%) than women (38.9%). Among married participants, 27.1% of men had an extra-marital partner in the past 12 months compared to 11.9% of women.
- Among adults who reported having sex with a non-marital or non-cohabitating partner in the 12 months preceding the survey, there was a higher proportion of men who reported using a condom with that partner (72.6%) than women (65.0%).
- Among men, 36.0% reported having undergone medical circumcision, 31.6% non-medical circumcision, and 30.7% reported that they were uncircumcised.

15.2 Background

The overarching goal of the Lesotho MOH HIV/AIDS program is to ensure universal access to prevention, care, and treatment for HIV/AIDS. The MOH targets are zero new infections and to reduce AIDS-related deaths by 50% by 2023. As part of the National Strategic Plan, the National AIDS Committee developed strategies to facilitate promotion and distribution of condoms, in an effort to increase condom use during high-risk sexual encounters by 80% by 2023.[1] Strategies to achieve this goal include distributing condoms at hotspots and meeting locations (health centers, shops, hotels/lodges, etc.), educational campaigns on the benefits of female condoms, and integrating condom provision into HIV testing and treatment services.

Since 2007, WHO and UNAIDS have recommended voluntary medical male circumcision (VMMC) as a strategy to lower risk of HIV transmission from women to men. Traditional male circumcision in Lesotho is often a rite of passage that young men participate in as part of initiation schools, but does not confer the same protective benefit as VMMC as there is not complete removal of the foreskin. In 2012, the MOH adopted VMMC as a preventive strategy for HIV/AIDS by providing no cost services to male participants who came to clinics.[2] Initiatives developed by the VMMC program include *Role Kati,* which aimed to educate male participants on the differences and benefits of VMMC compared to traditional circumcision, while still acknowledging the cultural sensitivities of traditional circumcision.

This chapter describes the prevalence of sexual behaviors that elevate risk of HIV. Questions about high-risk behaviors, including early sexual debut, lifetime and recent sexual partnerships, condom use at last sexual intercourse, engagement in paid sexual intercourse, and condom use at last sexual intercourse with a non-marital, non-cohabitating partner were asked in LePHIA 2016-2017 for adults (those aged 15-59 years). With this information, programs can identify and target interventions for individuals most in need of information and most at risk for HIV infection.

15.3 HIV Prevalence by Sexual Behavior

One in four (25.6%) adults were found to be HIV positive (20.8% in men and 30.4% in women). HIV prevalence among those who reported an early sexual debut (below the age of 15 years) was 21.4%, but was nearly three times as high for women (41.6%) as for men (14.4%), indicating that its role as a risk factor for HIV acquisition is primarily in women. Later sexual debut (above the age of 24 years) was associated with high prevalence in both men (31.6%) and women (38.8%).

The lifetime number of sexual partners was strongly associated with HIV prevalence; 29.8% of those with two or more partners were HIV positive, compared to 19.4% of those with only one partner. Of those who reported never having sex, 7.9% were HIV positive, which was significantly higher in men (10.8%) than in women (4.6%). Among persons reporting two or more sexual partners in the last 12 months, HIV prevalence was almost twice as high among women (37.6%) as among men (19.8%). HIV prevalence was higher among those who used a condom at last sexual intercourse during the previous 12 months (30.5%) than among those who did not use a condom (22.9%). This may be due to people who know that they are HIV-positive implementing prevention with positives steps to protect their partners (Table 15.3.A).

Almost half of women (48.2%) who reported ever having engaged in paid sexual intercourse were HIV positive, compared to 32.9% of women who had never engaged in paid sex. This pattern was also observed in men, where 30.1% who had engaged in paid sex were HIV positive, compared to 20.9% of those who had not. HIV prevalence in women who reported engaging in paid sexual intercourse in the 12 months preceding the survey was 46.2%. Of those reporting recent paid sexual intercourse, the prevalence of HIV was higher for those who did not use condom at the last time of paid sexual intercourse (42.2%) compared to those who did (28.0%) (Table 15.3.A), although not significantly higher.

Table 15.3.A HIV prevalence by sexual behavior

Prevalence of HIV among adults aged 15-59 years, by sex and sexual behavior characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Age at first sexual intercourse						
<15	14.4	628	41.6	328	21.4	956
15-19	19.5	2,234	33.6	3,991	27.0	6,225
20-24	31.4	702	30.4	1,344	30.8	2,046
≥25	31.6	283	38.8	247	34.4	530
Lifetime number of sexual partners						
0 (never had sex)	10.8	671	4.6	785	7.9	1,456
1	14.8	464	20.9	2,052	19.4	2,516
≥ 2	22.0	3,233	39.7	3,724	29.8	6,957
Number of sexual partners in the past 12 months						
0	24.7	500	42.3	1,007	35.0	1,507
1	22.5	2,307	31.4	4,378	27.5	6,685
≥2	19.8	1,195	37.6	633	24.5	1,828
Condom use at last sexual intercourse in the past 12 months						
Used condom	23.2	1,967	40.2	2,199	30.5	4,166
Did not use condom	19.5	1,513	25.6	2,783	22.9	4,296
Ever had paid sexual intercourse						
Yes[1]	30.1	394	48.2	217	34.8	611
Used condom at last paid sexual intercourse	26.9	268	47.5	132	31.9	400
Did not use condom at last paid sexual intercourse	35.5	89	47.0	78	39.7	167
No[2]	20.9	3,487	32.9	5,697	27.2	9,184

Table 15.3.A HIV prevalence by sexual behaviour (continued)

Prevalence of HIV among adults aged 15-59 years, by sex and sexual behavior characteristics, LePHIA 2016-2017

Characteristic	Male		Female		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Paid sexual intercourse in the past 12 months						
Yes[1]	24.1	154	46.2	132	31.9	286
Used condom at last paid sexual intercourse	20.4	114	42.8	87	28.0	201
Did not use condom at last paid sexual intercourse	(36.3)	39	(51.4)	42	42.2	81
No[2]	21.0	3,144	31.3	4,746	26.2	7,890
Total 15-24	3.4	1,690	11.1	2,358	7.2	4,048
Total 15-49	19.1	4,199	29.7	5,990	24.3	10,189
Total 15-59	20.8	4,762	30.4	6,920	25.6	11,682

[1]Includes persons who paid or received money for sexual intercourse.

[2]Among those who had sexual intercourse during the relevant time period.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

15.4 Condom Use at Last Sex with a Non-Marital, Non-Cohabitating Partner

Among adults who reported having sex in the past 12 months, 49.6% reported having sex with a non-marital, non-cohabitating partner, which was significantly more common in men (59.8%) than in women (38.9%). Only 69.7% used a condom the last time they had sex with such a partner. Among married participants, 27.1% of men had an extra-marital partner in the past 12 months compared to 11.9% of women; 66.8% of men and 61.5% of women reported using a condom at last sex with that partner. Approximately 95% of never married/lived together adults reported having a non-marital, non-cohabitating partner in the past 12 months. Of those, 74.1% reported condom use at last sex with this partner. Condom use at last sex with a non-marital, non-cohabitating partner was highest amongst older adolescents (aged 15-19 years) and lowest among older adults aged 50-59 years (78.3% and 55.6%, respectively) (Tables 15.4.A, 15.4.B, and 15.4.C).

Table 15.4.A Condom use at last sex with a non-marital, non-cohabitating partner: Men

Among men aged 15-59 years who reported having sex in the past 12 months, percentage who reported having a non-marital, non-cohabitating partner in the past 12 months; among those who reported having sex with a non-marital, non-cohabitating partner in the past 12 months, percentage who reported using a condom the last time they had sex with a non-marital, non-cohabitating partner, by selected demographic characteristics, LePHIA 2016-2017.

Characteristic	Among men who reported having sex in the past 12 months		Among men who reported having sex with a non-marital, non-cohabitating partner in the past 12 months	
	Percentage who reported having sex with a non-marital, non-cohabitating partner in the past 12 months	Number	Percentage who reported using a condom the last time they had sex with a non-marital, non-cohabitating partner[1]	Number
Residence				
Urban	57.6	1,581	76.0	931
Peri-urban	65.0	284	73.7	185
Rural	60.9	2,111	69.8	1,277
District				
Maseru	59.0	1,105	75.6	650
Mafeteng	60.4	382	70.1	229
Mohale's Hoek	61.9	266	63.0	168
Leribe	58.6	651	77.1	384
Berea	62.4	504	74.8	320
Quthing	69.2	183	70.7	127
Butha Buthe	65.8	270	76.5	180
Mokhotlong	56.4	237	57.6	131
Qacha's Nek	66.0	148	63.2	96
Thaba Tseka	47.8	230	60.2	108

Table 15.4.A Condom use at last sex with a non-marital, non-cohabitating partner: Men (continued)

Among men aged 15-59 years who reported having sex in the past 12 months, percentage who reported having a non-marital, non-cohabitating partner in the past 12 months; among those who reported having sex with a non-marital, non-cohabitating partner in the past 12 months, percentage who reported using a condom the last time they had sex with a non-marital, non-cohabitating partner, by selected demographic characteristics, LePHIA 2016-2017.

	Among men who reported having sex in the past 12 months		Among men who reported having sex with a non-marital, non-cohabitating partner in the past 12 months	
Characteristic	Percentage who reported having sex with a non-marital, non-cohabitating partner in the past 12 months	Number	Percentage who reported using a condom the last time they had sex with a non-marital, non-cohabitating partner[1]	Number
Marital status				
Never married / lived together	96.9	1,555	76.6	1,501
Married or living together	27.1	2,059	66.8	555
Divorced or separated	91.8	246	64.0	225
Widowed	96.2	105	66.2	101
Education				
No education	51.9	358	57.7	182
Primary	56.1	1,628	67.4	913
Secondary	66.3	1,545	78.4	1,048
College / University	58.2	385	77.1	224
Graduate / post-graduate	46.9	54	(78.4)	26
Wealth quintile				
Lowest	55.6	743	59.3	415
Second	62.9	791	69.9	496
Middle	61.3	771	76.9	483
Fourth	63.1	827	76.4	520
Highest	56.1	838	76.6	475
Religion				
Roman Catholic	59.9	1,643	72.1	982
Lesotho Evangelical	58.3	780	76.3	462
Anglican	62.7	298	75.0	188
Pentecostal	57.6	280	66.7	163
Other Christian	60.1	609	72.6	367
Other religion	62.4	254	70.7	162
Don't know	58.0	87	66.0	51
Age				
15-19	97.3	422	79.3	408
20-24	85.5	709	80.4	603
25-29	65.2	685	69.8	446
30-34	50.0	607	68.4	313
35-39	46.7	468	67.0	218
40-44	37.3	356	68.4	139
45-49	38.7	284	64.4	111
50-54	37.2	217	55.2	83
55-59	29.4	228	65.3	72
Total 15-24	89.7	1,131	79.9	1,011
Total 15-49	62.5	3,531	73.4	2,238
Total 15-59	59.8	3,976	72.6	2,393

[1]Relates to Global AIDS Monitoring indicator 3.18: Condom use at last high-risk sex.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 15.4.B Condom use at last sex with a non-marital, non-cohabitating partner: Women

Among women aged 15-59 years who reported having sex in the past 12 months, percentage who reported having a non-marital, non-cohabitating partner in the past 12 months; among those who reported having sex with a non-marital, non-cohabitating partner in the past 12 months, percentage who reported using a condom the last time they had sex with a non-marital, non-cohabitating partner, by selected demographic characteristics, LePHIA 2016-2017.

	Among women who reported having sex in the past 12 months		Among women who reported having sex with a non-marital, non-cohabitating partner in the past 12 months	
Characteristic	Percentage who reported having sex with a non-marital, non-cohabitating partner in the past 12 months	Number	Percentage who reported using a condom the last time they had sex with a non-marital, non-cohabitating partner[1]	Number
Residence				
Urban	44.3	2,207	67.0	962
Peri-urban	43.7	365	67.8	152
Rural	33.4	2,873	62.1	940
District				
Maseru	44.5	1,386	64.6	602
Mafeteng	33.4	521	67.7	172
Mohale's Hoek	38.4	422	61.9	159
Leribe	33.5	895	70.9	292
Berea	42.4	696	68.5	293
Quthing	37.9	297	55.2	114
Butha Buthe	34.6	346	76.0	116
Mokhotlong	39.6	320	49.7	124
Qacha's Nek	41.9	219	50.5	92
Thaba Tseka	26.8	343	58.2	90
Marital status				
Never married / lived together	92.0	1,094	69.0	993
Married or living together	11.9	3,599	61.5	412
Divorced or separated	87.9	347	58.5	299
Widowed	88.1	402	63.1	347
Education				
No education	44.6	82	(63.5)	34
Primary	31.9	2,201	57.5	687
Secondary	42.3	2,538	68.5	1,048
College / University	46.8	542	68.7	248
Graduate / post-graduate	47.5	80	(70.0)	36
Wealth quintile				
Lowest	30.2	1,033	53.4	309
Second	36.7	1,016	61.2	366
Middle	39.4	1,047	63.8	405
Fourth	42.1	1,121	68.3	464
Highest	43.0	1,212	70.5	505
Religion				
Roman Catholic	39.2	2,115	65.0	807
Lesotho Evangelical	38.5	905	68.9	340
Anglican	37.5	363	68.9	133
Pentecostal	35.2	545	54.8	182
Other Christian	40.6	1,075	64.1	426
Other religion	38.4	424	66.0	156
Don't know	*	14	*	8
Age				
15-19	67.4	430	76.6	282
20-24	45.9	1,095	69.0	489
25-29	35.6	1,042	61.5	350
30-34	31.8	849	62.6	267
35-39	36.5	642	61.6	233
40-44	34.8	526	63.2	179
45-49	35.7	345	60.4	119
50-54	26.2	297	56.3	76
55-59	28.4	219	42.7	59
Total 15-24	52.2	1,525	71.9	771
Total 15-49	40.0	4,929	65.9	1,919
Total 15-59	38.9	5,445	65.0	2,054

[1]Relates to Global AIDS Monitoring indicator 3.18: Condom use at last high-risk sex.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 15.4.C Condom use at last sex with a non-marital, non-cohabitating partner: Total

Among adults aged 15-59 years who reported having sex in the past 12 months, percentage who reported having a non-marital, non-cohabitating partner in the past 12 months; among those who reported having sex with a non-marital, non-cohabitating partner in the past 12 months, percentage who reported using a condom the last time they had sex with a non-marital, non-cohabitating partner; by selected demographic characteristics, LePHIA 2016-2017.

	Among adults who reported having sex in the past 12 months		Among adults who reported having sex with a non-marital, non-cohabitating partner in the past 12 months	
Characteristic	Percentage who reported having sex with a non-marital, non-cohabitating partner in the past 12 months	Number	Percentage who reported using a condom the last time they had sex with a non-marital, non-cohabitating partner[1]	Number
Residence				
Urban	51.0	3,788	72.1	1,893
Peri-urban	54.6	649	71.4	337
Rural	47.5	4,984	67.2	2,217
District				
Maseru	52.2	2,491	71.2	1,252
Mafeteng	46.8	903	69.2	401
Mohale's Hoek	49.5	688	62.6	327
Leribe	46.4	1,546	74.9	676
Berea	52.5	1,200	72.3	613
Quthing	52.1	480	64.6	241
Butha Buthe	50.9	616	76.3	296
Mokhotlong	48.3	557	54.5	255
Qacha's Nek	53.6	367	58.0	188
Thaba Tseka	36.9	573	59.5	198
Marital status				
Never married / lived together	95.2	2,649	74.1	2,494
Married or living together	18.8	5,658	65.0	967
Divorced or separated	89.8	593	61.2	524
Widowed	90.2	507	64.0	448
Education				
No education	50.9	440	58.4	216
Primary	44.4	3,829	63.9	1,600
Secondary	53.5	4,083	74.2	2,096
College / University	52.6	927	73.4	472
Graduate / post-graduate	47.2	134	74.0	62
Wealth quintile				
Lowest	43.1	1,776	57.2	724
Second	50.6	1,807	66.9	862
Middle	50.7	1,818	72.0	888
Fourth	52.8	1,948	73.3	984
Highest	49.5	2,050	73.9	980
Religion				
Roman Catholic	50.1	3,758	69.5	1,789
Lesotho Evangelical	49.5	1,685	73.7	802
Anglican	51.1	661	73.0	321
Pentecostal	44.7	825	61.3	345
Other Christian	49.2	1,684	68.8	793
Other religion	49.5	678	68.8	318
Don't know	58.4	101	67.1	59
Age				
15-19	84.1	852	78.3	690
20-24	65.2	1,804	76.3	1,092
25-29	50.1	1,727	66.8	796
30-34	41.2	1,456	66.2	580
35-39	41.8	1,110	64.8	451
40-44	36.0	882	66.0	318
45-49	37.3	629	62.5	230
50-54	31.8	514	55.6	159
55-59	29.0	447	55.6	131
Total 15-24	71.3	2,656	77.1	1,782
Total 15-49	51.5	8,460	70.5	4,157
Total 15-59	49.6	9,421	69.7	4,447

Table 15.4.C Condom use at last sex with a non-marital, non-cohabitating partner: Total (conclusion)

[1]Relates to Global AIDS Monitoring indicator 3.18: Condom use at last high-risk sex.
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

15.5 Male Circumcision

Among men, 36.0% reported having been medically circumcised. A lower percentage of HIV-positive men (18.7%) were medically circumcised compared to HIV-negative men (38.9%). Men in urban areas reported significantly higher rates of medical circumcision (49.8%) compared to rural areas (23.4%), and in the lowlands (43.6%) compared to the foothills (20.6%), mountains (18.1%) or Senqu River Valley (19.3%), where traditional circumcision was more common, particularly in the mountainous districts (54.9%). Medical circumcision was conducted for almost half the men in Berea (47.8%) and Maseru (46.1%).

Higher rates of medical circumcision were found among those never married (45.8%). Education was also strongly associated with medical circumcision, with only 9.8% of men without any education reporting medical circumcision compared to 52.0% of those with secondary education, and 69.1% of those with a tertiary education. Coverage of medical circumcision also varied substantially by socioeconomic status, ranging from 10.6% among those in the lowest wealth quintile to 61.3% among those in the highest wealth quintile. Older adolescents were far more likely to report having been medically circumcised, with more than half (53.6%) medically circumcised, compared to less than 20% of men above 45 years of age (Table 15.5.A).

Table 15.5.A Male circumcision

Percent distribution of men aged 15-59 years by self-reported circumcision status, by result of PHIA survey HIV test and selected demographic characteristics, LePHIA 2016-2017

	Circumcised[1]					
Characteristic	Medical circumcision	Non-medical circumcision	Uncircumcised	Unknown	Total	Number
Result of PHIA survey HIV test						
HIV positive	18.7	44.8	33.8	2.7	100.0	1,019
HIV negative	38.9	29.6	30.2	1.4	100.0	3,743
Not tested	46.9	22.5	28.7	1.9	100.0	599
Residence						
Urban	49.8	18.3	30.2	1.7	100.0	2,019
Peri-urban	49.8	19.4	28.2	2.6	100.0	371
Rural	23.4	43.6	31.4	1.6	100.0	2,971
Ecological zone						
Lowlands	43.6	23.8	30.9	1.8	100.0	3,450
Foothills	20.6	38.8	39.0	1.6	100.0	503
Mountains	18.1	54.9	25.4	1.6	100.0	1,000
Senqu River Valley	19.3	49.5	30.0	1.3	100.0	408
District						
Maseru	46.1	18.0	34.0	1.9	100.0	1,430
Mafeteng	31.0	38.1	29.8	1.0	100.0	528
Mohale's Hoek	23.4	44.0	30.5	2.1	100.0	376
Leribe	28.6	36.7	32.9	1.8	100.0	886
Berea	47.8	23.5	26.9	1.8	100.0	688
Quthing	19.6	53.3	25.4	1.8	100.0	275
Butha Buthe	34.1	29.7	34.1	2.1	100.0	361
Mokhotlong	20.7	59.1	18.6	1.6	100.0	289
Qacha's Nek	20.6	50.5	28.0	0.9	100.0	200
Thaba Tseka	21.9	50.8	26.3	1.1	100.0	328
Marital status						
Never married / lived together	45.8	21.8	31.2	1.3	100.0	2,530
Married or living together	29.1	38.6	30.2	2.2	100.0	2,288
Divorced or separated	21.6	45.7	31.4	1.3	100.0	340

Table 15.5.A Male circumcision

Percent distribution of men aged 15-59 years by self-reported circumcision status, by result of PHIA survey HIV test and selected demographic characteristics, LePHIA 2016-2017

Characteristic	Circumcised[1]		Uncircumcised	Unknown	Total	Number
	Medical circumcision	Non-medical circumcision				
Marital status (cont.)						
Widowed	14.8	54.9	28.8	1.5	100.0	186
Education						
No education	9.8	58.2	28.1	3.8	100.0	501
Primary	17.0	47.4	34.1	1.5	100.0	2,227
Secondary	52.0	17.2	29.4	1.4	100.0	2,121
College / University	69.1	4.6	24.4	1.9	100.0	445
Graduate / post-graduate	71.9	4.1	22.3	1.8	100.0	60
Wealth quintile						
Lowest	10.6	56.8	30.5	2.1	100.0	1,054
Second	22.7	44.8	31.2	1.3	100.0	1,105
Middle	33.0	31.5	34.1	1.4	100.0	1,058
Fourth	46.3	21.9	30.2	1.6	100.0	1,081
Highest	61.3	9.0	27.5	2.2	100.0	1,050
Religion						
Roman Catholic	36.3	30.4	31.6	1.8	100.0	2,198
Lesotho Evangelical	36.3	30.7	31.1	1.9	100.0	1,020
Anglican	38.0	32.6	28.1	1.3	100.0	392
Pentecostal	30.3	35.0	33.5	1.2	100.0	390
Other Christian	36.9	33.4	28.1	1.6	100.0	848
Other religion	40.5	29.7	28.0	1.7	100.0	348
Don't know	25.6	38.8	33.3	2.3	100.0	132
Age						
15-19	53.6	10.2	35.2	1.1	100.0	1,001
20-24	47.6	25.0	26.3	1.1	100.0	875
25-29	35.9	35.6	26.6	1.9	100.0	827
30-34	31.0	39.7	28.0	1.3	100.0	697
35-39	27.6	38.0	33.0	1.5	100.0	573
40-44	30.1	37.6	30.4	1.9	100.0	427
45-49	19.7	42.9	34.3	3.1	100.0	352
50-54	18.6	42.7	35.4	3.3	100.0	285
55-59	14.7	45.6	36.2	3.6	100.0	324
Total 15-24	50.7	17.3	30.9	1.1	100.0	1,876
Total 15-49	38.0	30.3	30.1	1.5	100.0	4,752
Total 15-59	36.0	31.6	30.7	1.7	100.0	5,361

[1]Relates to Global AIDS Monitoring indicator 3.16: Prevalence of male circumcision and PEPFAR VMMC_TOTALCIRC NAT / SUBNAT.
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

15.6 Gaps and Unmet Needs

- Extra-marital sexual partnerships were relatively common among married and cohabitating men in Lesotho. More than one in three married and cohabitating adults who engaged in extra-marital partnerships reported not using a condom. This suggests that knowledge, access, and acceptability of condoms needs further promotion.
- The low percentage of reported condom use suggests the need to promote knowledge, access and acceptability of condoms.
- Among young men aged 15-24 years, only half were medically circumcised. Further efforts to achieve greater coverage of this effective intervention should be sought, particularly in areas of traditional circumcision in the mountainous districts, and in populations with less access to education.

15.7 References

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16 VIOLENCE, INCLUDING GENDER-BASED VIOLENCE

16.1 Key Findings

- In all women, a history of having been physically forced to have sex was associated with a significantly higher prevalence of HIV (39.3%).
- More than one in ten (11.8%) young adolescent girls aged 13-14 years reported sexual harassment or violence, and one in four (25.7%) reported physical violence. Young adolescent girls who lived in urban areas experienced more physical violence than those in rural areas.

16.2 Background

In the World Report on Violence and Health (WRVH), WHO defined violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation."[1,2] Two forms of violence in particular have been associated with an increased risk of HIV: gender-based violence (GBV) and intimate partner violence (IPV).[3]

GBV is defined as “acts perpetrated against women, men, girls, and boys on the basis of their sex, which cause or could cause them physical, sexual, psychological, emotional, or economic harm, including the threat to take such acts, or to undertake the imposition of arbitrary restrictions on or deprivation of fundamental freedoms in private or public life, in peace time, and during situations of armed and other forms of conflict.”[4] Much of this violence targets girls and women, and whether sexual or not, it occurs within the context of their subordinate status in society, and serves to perpetuate gender inequality.[5] Such violence is often associated with an increased risk of psychological and behavioral problems, including depression, alcohol abuse, anxiety, and suicidal behavior. Other common health-related outcomes of GBV and sexual violence include unintended pregnancy, and infection with HIV and/or other sexually transmitted infections.[1]

IPV is defined as physical violence, sexual violence, stalking, or psychological aggression (including coercive tactics) by a current or former intimate partner (i.e., spouse, boyfriend/girlfriend, dating partner, or ongoing sexual partner).[6] Exposure to IPV has been implicated in increased risk of contracting HIV in women, through mechanisms such as forced sex with an HIV-positive partner, an increase in risky sexual behaviors, and reduced ability to negotiate forms of safe sex (e.g., condom use).[7,8] Children and adolescents girls also suffer from GBV including sexual violence. Long term effects of childhood sexual abuse can include development of obesity, early puberty, and psychiatric conditions such as depression, post-traumatic stress disorder, and suicidal behaviors in young adulthood.[9,10]

Data from LePHIA helped fill gaps in information on subnational prevalence estimates and demographic characteristics of women and young adolescents who experienced violence, including GBV and IPV. This chapter reports the prevalence of severe forms of sexual violence reported by women aged 15-59 years, including forced sex perpetrated by a live-in partner in the last 12 months among ever married or partnered women. Here, severe forms of sexual violence included having been physically forced or pressured to have sex. The association between sexual violence and women’s HIV status was also assessed.

The chapter also reports on the prevalence of violence among young adolescents aged 13-14 years, including physical violence (by any perpetrator), sexual harassment, and forced sex. Physical violence is defined as getting punched, kicked, whipped, beaten with an object, choked, smothered, drowned, or burned. It also includes getting threatened with a knife, gun, or other weapon. Sexual harassment has been defined as any form of unwanted verbal, non-verbal, or physical conduct of a sexual nature that occurs "with the purpose or effect of violating the dignity of a person, in particular when creating an intimidating, hostile, degrading, humiliating, or offensive environment."[11] The prevalence of recent violence is also broken down by age, education, region, and sociodemographic characteristics.

Violence questionnaires were administered to one randomly selected female participant aged 13-59 years in each household. Questions were adapted from the Demographic and Health Surveys, and the Violence Against Children Surveys, which measure lifetime experience of physical, emotional, and sexual violence among those aged 13-24 years. Women and adolescents reporting violence were offered referral to social services.

16.3 Recent Sexual Violence Characteristics of Adult Women

Among ever-married or partnered women, 1.0% reported having been physically forced to have sex in the past 12 months. Three times as many divorced women (3.0%) had recently experienced physically forced sex as had married women (0.9%). Women who had attended tertiary school also reported higher prevalence of recent forced sex (2.9%) compared to women with primary (0.8%) and secondary (0.9%) education. Physically forced sex was most commonly reported by older adolescents aged 15-19 years (1.8%), who also reported higher prevalence of pressured sex (4.0%) (Table 16.3.A).

Table 16.3.A Recent sexual violence among ever partnered women aged 15-59 years, by demographic characteristics

Among ever-partnered women aged 15-59 years, percentage who experienced sexual violence in the past 12 months, by woman's HIV status and selected demographic characteristics, LePHIA 2016-2017

	Self-reported experience of sexual harassment / violence			
Characteristic	Pressured to have sex	Physically forced to have sex	Physically forced by partner to have sex	Number of ever-married or partnered women
Result of PHIA survey HIV test				
HIV positive	0.9	1.1	0.8	1,369
HIV negative	1.1	1.1	0.9	2,366
Not tested	0.2	0.0	0.0	301
Residence				
Urban	1.0	1.1	1.0	1,569
Peri-urban	1.5	1.7	1.7	236
Rural	0.9	0.8	0.4	2,231
District				
Maseru	1.6	1.4	1.2	974
Mafeteng	0.2	0.2	0.2	400
Mohale's Hoek	0.1	0.0	0.0	359
Leribe	1.0	1.0	0.4	667
Berea	1.1	1.3	1.1	482
Quthing	0.7	1.4	1.1	220
Butha Buthe	0.7	1.3	1.0	238
Mokhotlong	1.0	1.0	0.6	221
Qacha's Nek	0.0	0.5	0.5	157
Thaba Tseka	0.2	0.5	0.2	318
Marital status				
Never married / lived together	*	*	*	0
Married or living together	1.0	0.9	0.8	3,075
Divorced or separated	2.0	3.0	1.9	334
Widowed	0.5	0.4	0.0	622
Education				
No education	0.0	0.0	0.0	64
Primary	0.7	0.8	0.4	1,919
Secondary	0.9	0.9	0.8	1,681
College / University	2.6	2.9	2.6	316
Graduate / post-graduate	1.5	1.5	1.5	55

Table 16.3.A Recent sexual violence among ever partnered women aged 15-59 years, by demographic characteristics

Among ever-partnered women aged 15-59 years, percentage who experienced sexual violence in the past 12 months, by woman's HIV status and selected demographic characteristics, LePHIA 2016-2017

	Self-reported experience of sexual harassment / violence			
Characteristic	Pressured to have sex	Physically forced to have sex	Physically forced by partner to have sex	Number of ever-married or partnered women
Wealth quintile				
Lowest	0.5	0.4	0.2	848
Second	1.3	0.9	0.6	789
Middle	1.1	1.2	1.1	794
Fourth	0.8	1.0	0.5	811
Highest	1.3	1.4	1.3	786
Religion				
Roman Catholic	1.4	1.3	1.1	1,601
Lesotho Evangelical	0.3	0.6	0.3	659
Anglican	1.7	1.3	1.1	256
Pentecostal	0.9	1.0	0.8	413
Other Christian	0.8	0.9	0.5	777
Other religion	0.5	0.5	0.3	316
Don't know	*	*	*	11
Age				
15-19	4.0	1.8	0.0	114
20-24	1.1	1.2	1.1	581
25-29	0.9	1.3	1.1	744
30-34	1.2	1.0	0.8	697
35-39	0.8	1.0	0.9	514
40-44	0.9	0.9	0.4	404
45-49	0.0	0.0	0.0	318
50-54	1.5	1.5	1.5	327
55-59	0.1	0.3	0.0	337
Total 15-24	1.6	1.3	0.9	695
Total 15-49	1.0	1.0	0.8	3,372
Total 15-59	1.0	1.0	0.8	4,036

[1]Relates to Global AIDS Monitoring indicator 4.3: Prevalence of recent intimate partner violence.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

16.4 HIV Prevalence by Experience of Sexual Violence

HIV prevalence among women who reported ever having experienced forced sex was 39.3%, significantly higher than in those who did not report a history of forced sex (31.0%). HIV prevalence was higher in older adolescent girls and young women, aged 15-24 years, reporting a history of forced sex (18.9% vs 12.1% in those who do not report a history of forced sex), and was very high in women aged 25-59 years who reported forced sex (47.2%). The prevalence of HIV also appeared to be higher among women who reported a greater exposure to sexual violence, although this was not significant. More than one third (36.4%) of women who reported having experienced physically forced sex in the 12 months before the survey were HIV positive.

Table 16.4.A HIV prevalence by experience of sexual violence

Prevalence of HIV among women aged 15-59 years by self-reported experience of sexual harassment/violence

	Women	
Characteristic	Percentage HIV positive	Number
Ever physically forced to have sex	39.3	521
15-24		
No	12.1	1,329
Yes	18.9	153
25-59		
No	39.0	3,111
Yes	47.2	368
In lifetime, number of times physically forced to have sex		
0	31.0	4,440
1-2	38.7	454
3-5	45.4	55
>5	*	12

Table 16.4.A HIV prevalence by experience of sexual violence (continued)

Prevalence of HIV among women aged 15-59 years by self-reported experience of sexual harassment/violence

Characteristic	Women	
	Percentage HIV positive	Number
Physically forced to have sex in the last 12 months		
In the past 12 months, physically forced to have sex	36.4	61
In the past 12 months, physically forced by partner to have sex	(39.0)	35
Total 15-24	12.8	1,482
Total 15-49	31.4	4,295
Total 15-59	31.9	4,961

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.
Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

16.5 Sexual and Physical Violence among Young Adolescent Girls

More than one tenth (11.8%) of young adolescent girls aged 13-14 years reported experiencing sexual harassment or sexual violence. Approximately a quarter (25.7%) of adolescent girls aged 13-14 years reported the experience of physical violence, which was more common in girls in urban (30.6%) than in rural areas (23.0%). Wealth quintile did not appear to be associated with risk of physical violence.

Table 16.5.A Experience of sexual and physical violence among girls aged 13-14 years

Among young adolescent girls aged 13-14 years, percentage who experienced physical or sexual violence in their lifetime, by HIV status and selected demographic characteristics, LePHIA 2016-2017

Characteristic	Self-reported experience of sexual harassment / violence and physical violence			
	Physically forced / pressured into having first time sex	Physical violence	Sexual harassment / violence	Number of young adolescent girls aged 13-14 years
Result of PHIA survey HIV test				
HIV positive	*	*	*	8
HIV negative	1.6	25.8	11.3	156
Not tested	*	*	*	11
Residence				
Urban	2.1	30.6	10.2	55
Peri-urban	*	*	*	11
Rural	1.3	23.0	12.1	109
District				
Maseru	(0.0)	(23.1)	(9.8)	38
Mafeteng	*	*	*	19
Mohale's Hoek	*	*	*	17
Leribe	(4.9)	(8.7)	(20.2)	25
Berea	*	*	*	16
Quthing	*	*	*	15
Butha Buthe	*	*	*	14
Mokhotlong	*	*	*	13
Qacha's Nek	*	*	*	6
Thaba Tseka	*	*	*	12
Education				
Currently attending school	1.5	26.5	11.8	170
Not currently attending school	*	*	*	5
Wealth quintile				
Lowest	(0.0)	(19.6)	(9.2)	49
Second	(5.8)	(32.1)	(13.6)	43
Middle	(0.0)	(25.4)	(20.0)	30
Fourth	(0.0)	(28.7)	(4.0)	29
Highest	*	*	*	24
Total 13-14	1.4	25.7	11.8	175

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

16.6 Gaps and Unmet Needs

- HIV prevalence was significantly higher in women who reported a history of sexual violence, including in young women.
- Worryingly, many girls aged 13-14 years reported already having experienced of some form of violence. Identification of those most likely to perpetrate abuse is critical in designing appropriate violence prevention interventions.
- Social support services should be promoted to women affected by violence to provide counseling and support, and mitigate consequences of abuse which appear to lead to increased HIV risk.

16.7 References

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17 DISCRIMINATORY ATTITUDES TOWARDS PEOPLE LIVING WITH HIV

17.1 Key Findings

- Among adults (aged 15-59 years) who had ever heard of HIV, 17.4% reported discriminatory attitudes towards people living with HIV.
- More adults in rural areas (21.4%) reported discriminatory attitudes towards HIV-positive people, compared to those in urban areas (13.1%).
- The largest variation in discriminatory attitudes occurred across different levels of educational attainment: 35.8% of those with no education reported discriminatory attitudes in contrast to 13.4% among those with secondary education.

17.2 Background

Previous research has shown an association between stigma and treatment non-adherence.[1] Stigma and discrimination are two of the greatest challenges to curbing the spread of HIV in Lesotho. Stigma is defined as all unfavorable attitudes and beliefs directed toward people living with HIV, and toward their significant others and communities. Discrimination refers to treatment given to individuals or groups with prejudice. In Lesotho, stigma and discrimination of people living with HIV include social exclusion, denial of health insurance, and loss of employment due to HIV status.[2] Loss of insurance and employment may have a negative impact on treatment adherence, as it becomes difficult to access treatment and care. Strategies to combat stigma in Lesotho include training of health workers, media campaigns, enactment and enforcement of laws, and implementation of a new stigma index.[3]

This chapter presents data from LePHIA 2016-2017 on discriminatory attitudes towards HIV-positive people. Participants were asked two questions to assess discriminatory attitudes. The first question was whether the participant would buy fresh vegetables from a shopkeeper or vendor if he or she knew that this person had HIV, and the second was if the participant thought that children living with HIV should be able to attend school with children who are HIV negative. Discriminatory attitudes were present if the participants responded to either question with “No.”

17.3 Discriminatory Attitudes towards People Living with HIV

Among adults who have heard of HIV, 17.4% showed discriminatory attitudes towards people living with HIV. One tenth (11.3%) reported that they did not feel children living with HIV should be allowed to attend school with HIV-negative children. A higher proportion of those in rural areas (21.4%) had discriminatory attitudes compared to those in urban areas (13.1%), with the highest proportion in Mokhotlong (23.4%). Discriminatory attitudes also varied across educational groups, where those with no (35.8%) or primary education (22.5%) had a higher prevalence of discriminatory attitudes than those with secondary (13.4%) or tertiary education (7.2%). Discriminatory attitudes decreased with increasing wealth, with the largest proportion in the lowest quintile (27.7%). They were also highest in the youngest age group, at 29.0% of older adolescents (ages 15-19 years).

Table 17.3.A Discriminatory attitudes toward people living with HIV

Among adults aged 15-59 years who have heard of HIV, percentage who report discriminatory attitudes towards people living with HIV, by selected demographic characteristics, LePHIA 2016-2017

Characteristic	Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had HIV?	Do you think that children living with HIV should be able to attend school with children who are HIV negative?	Both questions	
	Percentage who responded "No"	Percentage who responded "No"	Percentage who responded "No" to either of the two questions[1]	Number[2]
Residence				
Urban	8.0	8.4	13.1	2,475
Peri-urban	10.3	7.6	14.5	408
Rural	14.7	14.2	21.4	3,348
District				
Maseru	9.8	9.5	15.0	1,615
Mafeteng	12.3	11.0	17.5	603
Mohale's Hoek	13.4	12.5	19.4	460
Leribe	11.8	12.0	18.1	1,035
Berea	9.8	9.4	15.4	816
Quthing	15.6	13.2	19.8	341
Butha Buthe	12.4	11.2	18.9	409
Mokhotlong	14.1	16.0	23.4	335
Qacha's Nek	17.5	13.8	22.3	234
Thaba Tseka	14.2	16.8	22.5	383
Marital status				
Never married / lived together	16.4	13.2	22.1	2,317
Married or living together	8.0	9.6	14.1	3,005
Divorced or separated	9.8	12.1	16.0	384
Widowed	10.7	10.8	15.6	512
Education				
No education	24.5	25.6	35.8	291
Primary	15.8	15.4	22.5	2,512
Secondary	8.4	7.7	13.4	2,813
College / University	3.4	4.1	7.2	549
Graduate / post-graduate	5.3	8.7	10.4	63
Wealth quintile				
Lowest	18.1	19.4	27.7	1,196
Second	13.9	13.0	19.0	1,212
Middle	10.4	9.4	15.6	1,233
Fourth	10.1	9.4	15.6	1,296
Highest	7.0	7.3	11.6	1,278
Religion				
Roman Catholic	11.9	12.7	18.3	2,445
Lesotho Evangelical	9.2	9.5	14.6	1,075
Anglican	13.1	8.4	16.5	414
Pentecostal	11.7	12.7	18.5	555
Other Christian	11.8	9.9	16.9	1,169
Other religion	10.3	10.9	17.1	461
Don't know	23.1	18.3	30.1	96
Age				
15-19	22.0	17.8	29.0	1,093
20-24	11.5	9.4	16.5	1,084
25-29	8.3	9.6	14.2	964
30-34	8.5	8.8	13.4	786
35-39	6.5	8.3	12.2	662
40-44	10.3	11.1	16.2	493
45-49	8.0	11.2	14.0	372
50-54	11.6	13.5	18.5	377
55-59	12.6	11.5	18.3	400
Total 15-24	16.8	13.7	22.9	2,177
Total 15-49	11.5	11.1	17.3	5,454
Total 15-59	11.6	11.3	17.4	6,231

Table 17.3.A Discriminatory attitudes toward people living with HIV (continued)

[1]Relates to Global AIDS Monitoring indicator 4.1: Discriminatory attitudes towards people living with HIV; [2]Includes only participants who answered both questions.
The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.

17.4 Gaps and Unmet Needs

- Discriminatory attitudes are more common in rural areas, and among socio-economically disadvantaged populations. They are also most common among older adolescents, which could have far-reaching consequences due to their demographic importance. Interventions to reduce discrimination should consider hard-to-reach populations, and target venues where these young people are found, including schools and youth groups.

17.5 References

1. Katz IT, Ryu AE, Onuegbu AG, et al. Impact of HIV-related stigma on treatment adherence: systematic review and meta-synthesis. *J Int AIDS Soc.* 2013 Nov 13;16(3 Suppl 2):18640. doi: 10.7448/IAS.16.3.18640.

2. Lesotho Network of People Living with HIV and AIDS (LENEPWHA). *The People Living with HIV Stigma Index*. Maseru: LENEPWHA; 2014.

3. Lesotho Ministry of Health. *National Strategic plan for HIV and AIDS 2018/19 – 2022/23.* Maseru: Lesotho Ministry of Health; 2018.

18 TUBERCULOSIS

18.1 Key Findings

- Among all adults (those aged 15-59 years), 7.1% reported a history of TB—with a higher proportion among those who tested HIV positive (20.6%) than those who tested HIV negative (2.3%).
- TB was more common in men, in those without any education, and in older people.
- More people were diagnosed with TB in urban areas and the lowlands.
- Among self-reported HIV-positive adults, 51.9% reported having visited a clinic for TB diagnosis, 46.6% of whom were diagnosed with TB, and 97.9% of those who were diagnosed were treated for TB.

18.2 Background

People living with HIV are at risk for acquiring other diseases, including TB. Despite being preventable and curable, TB remains the leading cause of death for people living with HIV in sub-Saharan Africa. Lesotho has the second highest incidence of TB in the world, estimated at 665 cases per 100,000 per year in 2017.[1] The estimated HIV prevalence among TB incident cases is 71% (63–78%). The above rates, when translated into absolute numbers, are equivalent to 15,000 (9,600-21,000) estimated new TB cases in 2017, of whom 11,000 (6,700-15,000) are living with TB and HIV. [2] In order to gain a better understanding of the TB burden, the MOH plans to conduct a TB Prevalence Survey in 2019.

Lesotho's TB control is guided by The National TB and Leprosy Control Strategic Plan 2013-2018, which had the goals of reducing TB prevalence and mortality rates by 25% and 50%, respectively.[3] The Joint Review of HIV, TB, and Hepatitis Programs conducted by the MOH with support from the WHO during 23 October-3 November 2017 noted a 40% decrease in TB mortality (i.e., from 477 in 2008 to 287 deaths/100 000 population in 2016), which is still far from the mortality target; the limitations in estimating a TB prevalence makes the achievement of the first target uncertain. The joint review also highlighted that only 46% of the estimated TB incident cases were registered for treatment in 2016 and only 74% and 64% of the new/relapse TB cases and previously treated TB cases, respectively, were successfully treated in 2015.[4]

In its new (draft) National Tuberculosis Strategic Plan 2018-2022, Lesotho adopted two goals of the End TB Strategy, with reference to the baseline of 2016 and to be achieved by 2022; to reduce TB mortality and incidence by 75% and 50%, respectively.

This chapter describes the prevalence of ever having received a diagnosis of TB by certain demographic characteristics, as well as the TB clinical care cascade for HIV-positive individuals: received care at a TB clinic, TB diagnoses among those receiving care, and treatment among those diagnosed with TB.

18.3 Tuberculosis

Overall, 7.1% of adults reported having been diagnosed with TB during their lifetime. A higher proportion of men (8.1%) had been diagnosed with TB than women (6.0%). This number was significantly higher in those who tested HIV positive during the survey (20.6%) than in those who tested

negative (2.3%), or in those with no HIV test result (5.9%). More than one out of three people (36.2%) who visited a TB clinic were diagnosed with TB, ranging from 46% in HIV-positive to 22.6% in HIV-negative persons. The majority of people with a TB diagnosis reported having been treated (96.8%). Among those diagnosed with TB, only individuals not tested for HIV during the PHIA survey had a lower percentage (87.3%) of not being treated for TB compared to those who did get tested during the survey (Table 18.3.A).

Significantly more people in urban areas (8.1%) had been diagnosed with TB than in rural areas (6.3%), and significantly less in the mountains (4.3%) compared to the lowlands (7.9%), as significantly fewer persons in the mountains had ever visited a TB clinic (15.9% compared to 20.6% in the lowlands). The highest percentage of persons diagnosed with TB was in Maseru district (8.6%), and the lowest in Mokhotlong (4.4%). Diagnosis of TB decreased with increasing education, with 11.4% of those with no education reporting a history of TB, compared to 5.4% of those with a secondary education, and 4.9% of those with a tertiary education. It also increased rapidly with age, with only 1.5% of those aged 15-19 years reporting a TB diagnosis compared to 16.0% of those aged 55-59 years (Table 18.3.A).

Among self-reported HIV-positive adults, 51.9% reported ever visiting a TB clinic (60.9% of HIV-positive men compared to 46.6% of HIV-positive women). Among those who ever visited a TB clinic, 46.6% were diagnosed with TB (57.6% of HIV-positive men compared to 38.1% of HIV-positive women). Among those diagnosed with TB, 97.9% reported receiving TB treatment (99.0% of men and 96.7% of women) (Table 18.3.B).

Table 18.3.A Tuberculosis (TB) diagnoses and treatment characteristics of the population aged 15-59 years

Among adults aged 15-59 years, percentage who were ever diagnosed with TB or who had ever visited a TB clinic; among those who had ever visited a TB clinic, percentage who were diagnosed for TB; and among those diagnosed with TB, percentage who were treated for TB, LeP HIA 2016-2017

	Among all adults			Among adults who ever visited a TB clinic		Among adults who were diagnosed with TB	
Characteristic	Percentage diagnosed with TB	Percentage who ever visited a TB clinic	Number	Percentage who were diagnosed with TB	Number	Percentage who were treated for TB	Number
Result of PHIA survey HIV test							
HIV positive	20.6	44.8	3,193	46.0	1,402	97.7	623
HIV negative	2.3	10.3	8,466	22.6	865	97.4	190
Not tested	5.9	19.7	1,201	29.9	230	87.3	64
Sex							
Male	8.1	19.1	5,349	42.7	1,023	96.8	441
Female	6.0	19.9	7,511	29.9	1,474	96.7	436
Residence							
Urban	8.1	21.5	5,078	37.7	1,086	96.9	389
Peri-urban	6.1	19.3	880	31.4	166	94.1	51
Rural	6.3	17.8	6,902	35.5	1,245	97.0	437
Ecological zone							
Lowlands	7.9	20.6	8,286	38.1	1,710	96.5	635
Foothills	6.3	18.6	1,111	34.0	213	98.6	70
Mountains	4.3	15.9	2,453	26.8	397	96.3	108
Senqu River Valley	6.3	17.2	1,010	36.8	177	98.7	64
District							
Maseru	8.6	21.6	3,328	40.1	713	96.3	280
Mafeteng	6.6	19.9	1,261	33.2	256	100.0	84
Mohale's Hoek	6.7	20.5	961	32.8	205	97.2	64
Leribe	6.6	20.2	2,127	32.5	438	96.1	139
Berea	7.1	17.7	1,667	40.1	297	97.9	119
Quthing	6.4	16.3	689	39.3	112	(98.0)	42
Butha Buthe	5.8	19.4	816	29.7	159	(88.8)	46
Mokhotlong	4.4	15.5	714	28.3	115	(94.7)	33
Qacha's Nek	5.9	12.7	507	46.4	65	(100.0)	30
Thaba Tseka	4.9	17.3	790	28.5	137	(100.0)	40

Table 18.3.A Tuberculosis (TB) diagnoses and treatment characteristics of the population aged 15-59 years

Among adults aged 15-59 years, percentage who were ever diagnosed with TB or who had ever visited a TB clinic; among those who had ever visited a TB clinic, percentage who were diagnosed for TB; and among those diagnosed with TB, percentage who were treated for TB, LePHIA 2016-2017

	Among all adults			Among adults who ever visited a TB clinic		Among adults who were diagnosed with TB	
Characteristic	Percentage diagnosed with TB	Percentage who ever visited a TB clinic	Number	Percentage who were diagnosed with TB	Number	Percentage who were treated for TB	Number
Marital status							
Never married / lived together	3.3	10.3	4,784	32.5	493	96.2	154
Married or living together	8.0	22.6	6,170	35.3	1,337	96.6	451
Divorced or separated	12.9	31.8	829	40.5	264	96.0	104
Widowed	16.3	38.4	1,052	42.3	396	98.2	166
Education							
No education	11.4	26.6	620	42.8	161	96.6	71
Primary	8.9	21.4	5,248	41.6	1,124	96.9	452
Secondary	5.4	17.1	5,722	31.6	967	97.9	290
College / University	4.9	18.9	1,109	26.1	213	95.1	55
Graduate / post-graduate	5.9	20.1	152	(29.2)	29	*	7
Wealth quintile							
Lowest	5.7	16.9	2,479	34.0	416	97.9	142
Second	7.0	19.9	2,526	35.3	506	96.3	174
Middle	8.3	19.7	2,537	41.9	510	97.0	206
Fourth	7.0	20.3	2,594	34.6	518	95.9	170
Highest	7.1	20.1	2,692	35.0	543	96.9	184
Religion							
Roman Catholic	6.7	18.7	5,105	35.9	956	99.2	340
Lesotho Evangelical	7.5	21.0	2,254	35.7	462	96.5	160
Anglican	7.2	20.9	892	34.7	188	95.1	63
Pentecostal	8.1	20.2	1,123	40.2	226	88.8	84
Other Christian	6.8	18.9	2,366	36.0	447	98.4	152
Other religion	7.6	21.1	921	35.9	191	92.6	66
Don't know	5.7	13.1	160	*	22	*	10
Age							
15-19	1.5	4.9	2,243	30.9	106	(91.5)	29
20-24	1.6	10.0	2,170	16.3	220	(97.6)	35
25-29	3.5	14.8	1,985	23.8	301	94.7	66
30-34	7.3	22.9	1,660	32.0	388	96.9	116
35-39	11.0	27.3	1,340	40.3	363	97.8	143
40-44	14.8	35.3	1,048	42.0	356	95.4	148
45-49	14.2	31.5	820	45.1	247	94.4	111
50-54	14.7	33.7	773	43.6	251	99.2	104
55-59	16.0	33.3	821	48.0	265	100.0	125
Total 15-24	1.6	7.4	4,413	21.3	326	94.5	64
Total 15-49	6.1	17.8	11,266	34.0	1,981	95.9	648
Total 15-59	7.1	19.5	12,860	36.2	2,497	96.8	877

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution.
An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 18.3.B Tuberculosis (TB) clinic attendance and services among HIV-positive adults

Among self-reported HIV-positive adults aged 15-59 years, percentage who ever visited a TB clinic; among those who had ever visited a TB clinic, percentage who were diagnosed for TB; and among those diagnosed with TB, percentage who were treated for TB, by sex, LePHIA 2016-2017

	Among HIV-positive adults		Among HIV-positive adults who ever visited a TB clinic		Among HIV-positive adults who were diagnosed with TB	
Characteristic	Percentage who ever visited a TB clinic	Number	Percentage who were diagnosed with TB	Number	Percentage who were treated for TB	Number
Sex						
Male	60.9	785	57.6	477	99.0	280
Female	46.6	1,861	38.1	857	96.7	322
Total 15-59	51.9	2,646	46.6	1,334	97.9	602

18.4 Gaps and Unmet Needs

- TB diagnoses were relatively common in Lesotho, with one in five people living with HIV, and almost one in ten of all adults reporting a history of TB.
- The reasons for fewer clinical assessments and TB diagnoses in the mountains are not clear, therefore, access to appropriate services in these remote areas should be assessed.
- These data are limited in terms of their accuracy and completeness as they are based on self-report. The planned TB prevalence survey should provide more rigorous data on risk factors for TB, including occupational risks and barriers to accessing care.

18.5 References

1. World Health Organization. *Global tuberculosis report 2017.* Geneva: World Health Organization; 2017.

2. World Health Organization. WHO TB burden estimates, 2018. Geneva: World Health Organization, 2018. https://www.who.int/tb/country/data/download/en/. Accessed January 18, 2018.

3. Lesotho Ministry of Health. The National TB and Leprosy Control Strategic Plan 2013-2018. Maseru: Lesotho Ministry of Health; 2015.

4. Lesotho Ministry of Health. Final Report for a Review of HIV/Tuberculosis and Hepatitis Programmes. Maseru: Lesotho Ministry of Health; 2017.

19 External Migration

19.1 Key Findings

- Nearly one-quarter of all respondents had lived outside of Lesotho; 30.9% of men and 17.8% of women reported having lived outside of Lesotho.
- HIV prevalence was significantly higher in those who had ever lived outside Lesotho than those who had not.

19.2 Background

Migration has been shown as a potential bridge to HIV acquisition, due to familial disruption and increases in sexual risk behavior. HIV prevalence is often higher among migrant populations, but the exact pathway between mobility and HIV acquisition is unclear. Mobility can also lead to interruptions in treatment and care, with decreasing access to HIV testing and clinical services due to local restrictions on treating non-citizens, or stigmatization of 'outsiders.' Patterns of migration in Lesotho and their association with HIV infection are important to understand to determine what gaps in prevention or linkage to care currently exist, and what interventions are needed for this population.

19.3 External Migration Characteristics and HIV

Migration plays an important role in Lesotho's social organization; among adults (those aged 15-59 years), 30.9% of men and 17.8% of women reported having lived outside Lesotho during their lifetime. Six percent (6.0%) of participants reported that they lived outside the country for a month or more during the last 12 months. This temporary out-migration was more common in men (7.2%) than in women (4.8%). Ninety-five percent of respondents who were out of the country for a month or more during the past 12 months reported South Africa as their place of residence while away, and 84.4% of men and 58.9% of women reported "work" as their primary reason for travel. Among men travelling for work, two in five reported working in construction, followed by mining and agriculture. One in four women reported "family" as the primary reason that they were away from home for more than a month. Among women who travelled for work, retail sales, manufacturing, and agriculture were mentioned as their primary work activity (Table 19.3.A).

HIV prevalence was significantly higher in those who reported ever having lived outside Lesotho, with 39.1% of women and 27.5% of men testing HIV-positive, compared to 28.5% of women and 17.8% of men who had never lived outside Lesotho. The number of times participants had lived outside Lesotho did not appear to be associated with HIV risk, nor did recent migration (Table 19.3.B).

Table 19.3.A External migration characteristics of the population: Ages 15-59 years

Percent distribution of the population aged 15-59 years, by sex and selected migration characteristics, LePHIA 2016-2017

	Male		Female		Total	
Characteristic	Percent	Number	Percent	Number	Percent	Number
Ever lived outside Lesotho						
Yes	30.9	1,658	17.8	1,339	24.3	2,997
No	69.1	3,698	82.2	6,185	75.7	9,883
Away from home >1 month in last 12 months						
Yes	7.2	358	4.8	367	6.0	725
No	21.1	1,106	10.6	768	15.9	1,874
Never lived outside Lesotho	71.7	3,698	84.5	6,185	78.2	9,883

Table 19.3.A External migration characteristics of the population: Ages 15-59 years (continued)

Percent distribution of the population aged 15-59 years, by sex and selected migration characteristics, LePHIA 2016-2017

Characteristic	Male		Female		Total	
	Percent	Number	Percent	Number	Percent	Number
Reason away from home (> 1 month)						
Work	6.1	304	2.8	218	4.4	522
School	*	12	*	19	(0.3)	31
Family	*	17	1.1	85	0.7	102
Medical care	*	2	*	3	*	5
Travel	*	7	*	20	(0.2)	27
Other	*	16	*	22	(0.3)	38
Not away from home > 1 month in last 12 months	21.1	1,106	10.6	768	15.9	1,874
Never lived outside Lesotho	71.7	3,698	84.5	6,185	78.2	9,883
In what country, away from home						
South Africa	6.8	344	4.7	357	5.7	701
Swaziland	*	1	*	0	*	1
Mozambique	*	2	*	0	*	2
Namibia	*	0	*	0	*	0
Botswana	*	1	*	1	*	2
Zimbabwe	*	2	*	3	*	5
Other	*	7	*	6	*	13
Not away from home > 1 month in last 12 months	21.1	1,106	10.6	768	15.9	1,874
Never lived outside Lesotho	71.7	3,698	84.5	6,185	78.2	9,883
Main product/ service / activity last time outside Lesotho						
Did not work	(0.7)	37	1.0	76	0.8	113
Agriculture	(0.6)	34	*	17	0.4	51
Fishing	*	1	*	0	*	1
Mining	(0.7)	37	*	3	(0.4)	40
Manufacturing	*	19	*	19	(0.3)	38
Electricity	*	3	*	0	*	3
Construction	2.7	133	*	2	1.4	135
Wholesale	*	16	*	22	(0.3)	38
Household goods Hotels	*	3	*	8	*	11
Transport and communication	*	9	*	1	*	10
Financial	*	2	*	1	*	3
Real estate	*	5	*	0	*	5
Social	*	4	*	1	*	5
Other	1.0	50	2.8	209	1.9	259
Not away from home > 1 month in last 12 months	21.1	1,106	10.7	768	15.9	1,874
Never lived outside Lesotho	71.8	3,698	84.6	6,185	78.2	9,883
Total 15-59	100.0	5,361	100.0	7,526	100.0	12,887

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable. Estimates in parentheses are based on a small number (25 to 49) of unweighted cases and should be interpreted with caution. An asterisk indicates that an estimate is based on a very small number (less than 25) of unweighted cases and has been suppressed.

Table 19.3.B HIV prevalence by external migration characteristics: Ages 15-59 years

Prevalence of HIV among adults aged 15-59 years, by sex and selected migration characteristics, LePHIA 2016-2017

Characteristic	Male		Female		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Ever lived outside Lesotho	27.5	1,440	39.1	1,224	31.8	2,664
Ever lived outside Lesotho						
Never	17.8	3,318	28.5	5,695	23.6	9,013
1 time	27.0	735	38.9	694	31.6	1,429
2-3 times	25.4	300	40.5	236	30.7	536
4 times or more	31.4	338	40.6	226	34.3	564
Away from home >1 month in last 12 months						
Yes	23.0	309	39.6	339	29.8	648
No	28.9	966	40.4	700	32.8	1,666
Never lived outside Lesotho	17.8	3,318	28.5	5,695	23.6	9,013
Total 15-24	3.4	1,690	11.1	2,358	7.2	4,048
Total 15-49	19.1	4,199	29.7	5,990	24.3	10,189
Total 15-59	20.8	4,762	30.4	6,920	25.6	11,682

Table 19.3.B	HIV prevalence by external migration characteristics: Ages 15-59 years (conclusions)

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.

19.4 Gaps and Unmet Needs

- Migration was relatively common in the survey population during the survey period, although it is likely an underestimate as only those who had returned to Lesotho during the survey were interviewed.
- The role of mobility in HIV acquisition should be further examined to determine how to diminish risk to migrants and how to encourage access to care.

DISCUSSION AND CONCLUSIONS

LePHIA provides an important snapshot of the state of the HIV epidemic in a country with one of the highest burdens of HIV in the world. HIV continues to greatly affect the people of Lesotho, with 25.6% of HIV-positive adults (those aged 15-59 years), corresponding to an estimated 306,000 people in 2017. Over the last decade, Lesotho has made great efforts to combat this epidemic, with innovative HIV testing campaigns, improved linkage to care, as well as increased ART coverage. By quantifying national population-level HIV incidence and VLS for the first time in Lesotho, LePHIA has contributed to the understanding of the epidemic. The results demonstrate that there has been remarkable progress in epidemic control as Lesotho has made considerable gains toward the achievement of the UNAIDS 90-90-90 targets in adults, with 81.0% of those living with HIV diagnosed, 91.8% of those diagnosed receiving ART, and 87.7% of those on ART had VLS.

There are persistent gaps in achievements. The LePHIA national estimate of HIV incidence in adults was amongst the highest in the world (HIV incidence: 1.1%), resulting in almost 10,000 new HIV infections in 2017.

In addition, the high prevalence of households having at least one HIV-positive member, including 36.0% with an HIV-positive head, could have economic and psycho-social impacts on other household members, as well as long-term consequences for the family structure, the health system and the economy.

Increasing coverage of diagnosis and improving adherence to treatment to improve the proportion of sexually active adults who have VLS are critical to reduce HIV incidence. However, prevention efforts such as improving condom use, limiting the number of sexual partners, increasing coverage medical male circumcision, improving HIV education in young people, and promoting pre-exposure prophylaxis (PrEP) for those at high risk should also be included in any national strategy for HIV prevention.

Priority Populations in Lesotho

Young People (ages 15-24 years) and HIV

- There are disparities by sex in HIV burden in young people, with young women acquiring HIV at a much faster rate than young men the same age, with an HIV incidence of 1.5% in young women compared to 0.1% in young men. Although this disparity subsides by the time they age into their 40s, young women were three times more likely to be living with HIV (11.1% vs 3.4% prevalence) than young men in the same age group.
- This disparity in risk was seen despite the fact that far fewer young women reported early sexual debut than young men (4.7% vs 20.6%), although there is possible reporting bias due to gender norms around sexuality. We also see that girls aged 13-14 years had already experienced high rates of sexual and physical abuse, with implications for HIV acquisition in the future, as the prevalence of HIV was higher in women with a history of sexual violence.
- The high rate of infection at young ages in the female population has consequences for both the individual as well as the health system. It has negative consequences for their own health due to the higher risk of comorbidities associated with long-term infection and the potential cumulative toxicity of treatment due to more years of ART exposure. Furthermore, as older adolescent girls and young

women had the lowest rates of VLS amongst women, with almost half without VLS, they are at higher likelihood of onward vertical and sexual transmission.

- Despite their lower prevalence of HIV, young men had established behavioral patterns which would put them at risk of HIV acquisition when they are older. This includes one in five (20.6%) reporting early sexual debut. Furthermore, despite having the highest frequency of non-marital, non-cohabitating partners in the past year (89.7%), only 79.9% reported using condoms and less than half (49.3%) reported HIV testing in the past year. And although more young men had been medically circumcised than their older counterparts, approximately half were not.
- For young men living with HIV, almost half (48.7%) did not have VLS, and, unlike young women, this low rate of VLS continues in those aged 25-34 years, where 53.9% did not have VLS. Older adolescent boys aged 15-19 also had the highest proportion who were severely immunosuppressed (24.1%), which could indicate long-standing undiagnosed HIV. However, it should be noted that the number of males in this age band was small, suggesting the need for further research in this population.
- Surprisingly, in a country with the second highest burden of HIV in the world, only 26.0% of young men and 27.8% of young women had complete and correct knowledge of HIV. Older adolescents aged 15-19 years also had the highest rates of discriminatory attitudes. Despite apparent gains in epidemic control, if this key demographic ages without an improved basic understanding of HIV transmission, additional barriers to prevention could arise.
- There were no risk factors clearly explaining the disparity in HIV in young men vs women, although in both sexes education was associated with lower prevalence of HIV. It is recommended to target this population with interventions addressing both structural and individual risk factors. Interventions in terms of sexual mores and gender norms should address some of the factors encouraging early adoption of high-risk behaviors in young men. School attendance should also be encouraged in both boys and girls. Furthermore, low rates of VLS in their male sexual partners are likely key drivers of HIV in young women, requiring further investment to determine how to best engage men in earlier testing and treatment. Finally, encouraging uptake of medical circumcision in HIV-negative young men before peak sexual activity should reduce HIV acquisition in men, interrupting the transmission cycle between men and women.

Children and HIV

- With one of the highest global burdens of HIV among children (those aged 0-14 years) (HIV prevalence of 2.1%), Lesotho has done very well in achieving almost universal treatment coverage (98.2%) amongst children whose parents or guardians are aware of their status. However, it is worrisome that 20% of children had not been previously diagnosed, reflecting gaps in infant and child HIV testing services. Lesotho is currently evaluating different strategies to improve yield and efficiency of pediatric testing to identify those children living with HIV who have not yet been identified. Another concern is that almost 30% of children on treatment did not have VLS. Current pediatric ART in Lesotho is predominantly NNRTI-based and access to more optimal ART regimens and tailored support for medication administration will be critical to address the low prevalence of VLS in this population.
- HIV prevalence was 24.5% in pregnant women in LePHIA. Although Lesotho began implementing Option B+ in 2013, and has achieved high coverage of the key intervention to reduce vertical transmission of HIV (98.5% of HIV-positive women aged 15-49 years who gave birth during the 12 months preceding the survey reported that they had received ART during pregnancy or labor and delivery), 2.8% of HIV exposed infants younger than 18 months were HIV positive.
- Furthermore, 20.9% of the HIV-positive mothers of infants tested in the survey did not have VLS at the time of the survey. Increasing coverage of virological testing continues to be a national priority.

Several system-level interventions could be useful. In the laboratory, facilitating access to testing with the potential use of POC technologies, and, in facilities, through service quality improvement initiatives, training of healthcare personnel, and additional points of entry to testing, such as immunization clinics. Furthermore, strengthening existing laboratory systems to improve access to DNA PCR testing for EID (e.g., specimen transport), maximizing lab capacity/efficiency, and implementing efficient systems to return results back to clinics could all be useful in addressing this gap.

Sex workers and their clients

- Data on sex work in Lesotho is relatively limited. LePHIA found that 3.7% of women reported ever having engaged in paid sexual intercourse, and 10.1% of men. HIV prevalence was significantly higher in this population, with almost 1 in 2 women (48.2%) reporting lifetime sex work testing HIV positive, and 46.2% of those who reported recent sex work. HIV prevalence was 51.4% in women who reported recent paid intercourse where they did not use a condom at their last paid sex act; this has serious implications for onward transmission if they did not have VLS.
- Men who had ever paid for sex were also more likely to be HIV positive, with an HIV prevalence of 30.1% in male clients and 36.3% in those who reported recent paid intercourse and who did not use a condom at their last paid sex act.
- This demonstrates that even though this is a generalized epidemic in Lesotho, there are still populations at even greater risk of HIV acquisition, who also tend to be harder to reach by many common prevention interventions. Interventions such as PrEP, cash transfers to vulnerable young women, and re-energized condom promotion should be explored within this context.

Men and HIV

- There was very high HIV incidence in men above the age of 25 years, with 1.4% of men aged 25-34 years and 2.7% of men aged 35-49 years acquiring HIV in 2017. This was also apparent in the tripling of prevalence in men aged 25-44 years (from 12.9% in adults aged 25-29 years to 46.9% in adults aged 40-44 years).
- It is difficult to ascertain exactly which risk factors are driving this later acquisition. Migration was very common in men, with 30.9% reporting having lived outside Lesotho, mainly for work purposes, with HIV prevalence significantly higher in migrants. Migrant men have been shown to engage in more high-risk partnerships, including paid sexual intercourse. Furthermore, over a quarter of married men reported having an extra-marital partner in the past year, with only 66.8% reporting condom use at last sex with that partner.
- The coverage of key care interventions such as testing, diagnosis, and ART was lower for men than for women. As a consequence, the prevalence of VLS was low in HIV-positive men (63.4%), in contrast to women (70.5%). This is likely a consequence of poor health-seeking behaviors among men, reflective of gender norms defining masculinity in ways that affect health behaviors, encourage multiple and concurrent partnerships, and promote alcohol and drug use, particularly in those away from their families for long periods.
- It is important to note though that men who were aware of their status were clearly adhering to medication, as demonstrated by high levels of VLS, and good concordance between self-reported ART use and detectable ARVs.
- To address the gap in awareness of HIV, various interventions should be considered at different life stages. Male-friendly testing and care clinics are recommended in order to better provide services geared to male health concerns and sensitivities. The intersection of employment, migration, and risky sexual behaviors should also be evaluated in older men, to generate targeted policies to better serve mobile populations.

Older people and HIV

- Although prevalence was slightly lower in those aged 50 years and older compared to those aged 40-49 years, as people living with HIV age into this range comorbidities will become more common and will increase the burden on the health system. Furthermore, although the numbers were small, a high proportion of those aged 55-59 years had severe immunosuppression (CD4 count <200 cells/µL) at diagnosis. As close to half had not tested for HIV in the past year, it is likely that many older people do not consider themselves at risk for HIV. Considering the slow immune recovery often seen in older people living with HIV, testing campaigns and HIV services, which include screening for other chronic diseases such as hypertension or diabetes mellitus, might encourage older patients to access services more regularly.
- This underestimate of risk appears to pertain to widowed people living with HIV who have lower rates of awareness, and to divorced or separated people living with HIV who have lower rates of VLS than their married counterparts, with only 52.1% of divorced men and 65.5% of women with VLS, even though they tended to be older and rates of VLS increase with age. Innovative methods to identify people living with HIV in groups, that are traditionally thought of as lower risk should be developed.

HIV services in Lesotho

- The Lesotho National HIV Program needs to implement evidence-based HIV prevention packages of interventions carefully selected to suit the epidemic setting and the target populations.
- The considerable variation observed in prevalence of HIV and in coverage of testing and male circumcision across districts, with rural areas and mountainous districts often performing less well than other regions, highlights the need to ensure accessibility and quality of services in all regions. Both geographic topography and human resource constraints contribute to the disparity in service coverage, accessibility, and uptake. Targeting additional resources to the lower performing districts should include assessments of current staffing, as well as capacity-building for monitoring, evaluation, and supervision, and should aim to address any current shortcomings and ensure more equitable distribution of resources.

HIV Testing and Counseling

- As in many other countries, the key gap in achieving the 90-90-90 targets is really in terms of awareness of status, particularly among young people overall and men aged 25-34 years. Although the majority of the population have tested for HIV at some point in their lives, the frequency of recent testing was lower than desired, particularly among young people. Identification of people living with HIV is crucial, as young men living with HIV had achieved high rates of VLS once on treatment, and there was very little discordance between reporting ART use and having detectable ARVs. Understanding barriers to testing in key populations should be prioritized, and addressing mobility and misperceptions of HIV as a female disease need to be addressed to encourage participation in testing campaigns.
- Innovative methods for improving community-based testing yield, with differentiated HIV testing services, including self-testing and decentralization of care, with task shifting of some key HIV interventions to community health workers and other cadres, might assist in reaching hard to reach populations.

Condom Promotion

- Condoms remain a key low-cost intervention for the prevention of HIV. According to our data, 72.6% of men and 65.0% of women who had a non-marital partner in the last 12 months, used a condom the last time they had sex with that partner. Although this suggests improvement in condom use for higher risk partners, there are still key demographics who are not using condoms regularly. For instance, women aged 50-59 years were less likely to use condoms with non-marital partners than their younger counterparts, suggesting that females still consider condoms primarily for pregnancy prevention, and decrease their use after ageing out of reproductive ages.

Antiretrovirals

- Lesotho has achieved enormous gain in coverage of ART, and VLS was high in those on ART. This is a credit to the adoption of the Test and Treat policy in 2016. However, there were still some gaps identified. Among adults previously diagnosed with HIV, but not on ART, the median CD4 count was 350 cells/µL and 22.7% were severely immunosuppressed. This finding highlights the need to identify pre-ART patients and prioritize initiation of treatment in this group, including through active tracking of those not engaged in care. Among those adults living with HIV but not previously diagnosed, the median CD4 count was 383 cells/µL (361 cells/µL in men and 413 cells/µL in women); 15.8% had a CD4 count less than 200 cells/µL (17.7% of men and 13.7% of women). However, the median CD4 count was over 500 cells/µL for people on ART, demonstrating that drug efficacy and adherence are very good in terms of the suppression of viremia as well as immune reconstitution.
- Almost one in eight (11.4%) adults had transmitted resistance to NNRTIs, the most commonly used class of ARVs. This pattern suggests that a significant portion of those who are newly diagnosed with HIV and initiating ART will fail treatment due to pre-existing drug resistance. However, the total number of genotyped samples was small, and further genotyping should be done on both newly diagnosed and treated individuals to assess the prevalence of primary and secondary drug resistance in Lesotho, to provide further evidence to support the shift of first-line regimens to integrase or protease inhibitor-based therapies.

Conclusions

- The fact that over one in three people in Lesotho above 30 years of age is HIV positive indicates a substantial economic burden on the country's health system. The peak HIV prevalence in adults aged 40-44 years is likely a reflection of both diagnoses of new cases of HIV and decreased mortality due to the expanded access to ART during the past 10 years. As this population ages, it is important to address the double burden of HIV and non-communicable diseases. This calls for transitioning the response from an emergency response to a chronic disease management model, including the development of differentiated care models that include the integration of non-communicable disease management in HIV care.
- Despite encouraging results in terms of VLS and approaching the 90-90-90 goals, there remain challenges in achievements. LePHIA should provide actionable policy goals for targeting of evidence-based, high-impact interventions.

APPENDIX A SAMPLE DESIGN AND WEIGHTING

Appendix A provides a high-level overview of sampling and weighting procedures for LePHIA 2016-2017. In-depth details are provided in the LePHIA 2016-2017 Sampling and Weighting Technical Report, which may be found online on the PHIA Project website.

A.1 Sample Design

Overview

The sample design for the LePHIA 2016-2017 was a stratified multistage probability sample design, with strata defined by the 10 districts of the country, first-stage sampling units defined by enumeration areas (EAs) within strata, second-stage sampling units defined by households within EAs, and finally eligible persons within households. Within each, the first-stage sampling units (also referred to as primary sampling units or PSUs) were selected with probabilities proportionate to the number of households in the PSU based on preliminary results of the 2016 Lesotho Population and Housing Census. The allocation of the sample PSUs to the 10 districts was made in a manner designed to achieve specified precision levels for (1) a national estimate of the HIV incidence rate and (2) district estimates of VLS.

The second-stage sampling units were selected from lists of dwelling units/households compiled by trained staff for each of the sampled PSUs. Upon completion of the listing process, a random systematic sample of dwelling units/households was selected from each PSU at rates designed to yield self-weighting (i.e., equal probability) samples within each district to the extent feasible.

Within the sampled households, all eligible adolescents and adults aged 15-59 years were included in the study sample for data collection. All eligible children aged 0-14 years in half of the sampled households were included in the study for data collection.

Population of Inference

The population of inference for the LePHIA 2016-2017 was comprised of the de facto household population. The de facto population is comprised of individuals who were present in households (i.e., slept in the household) on the night prior to the household interview. In contrast, the *de jure* population is comprised of individuals who are usual residents of the household, irrespective of whether or not they slept in the household on the night prior to the household interview.

Precision Specifications and Assumptions

The following specifications were used to develop the sample design for the LePHIA 2016-2017.

- The number of first-stage sampling units (EAs) to be selected was 418, with an average of 25 occupied dwelling units per EA.
- The total sample of 10,450 occupied dwelling units were allocated to the ten strata (districts) as follows: The minimum number of EAs for each stratum was determined by estimating the minimum number of HIV-positive respondents and blood tests needed (accounting for response and testing rates from previous surveys) to provide sub-national estimates of VLS with a maximum 95% CI of +/- 10.0% in each stratum. Since the denominator used for estimating VLS was HIV-positive individuals, the required minimum number of blood draws in a stratum was inversely proportional to the

expected HIV prevalence rate in that stratum. The total sample size also had to be sufficient to produce a national annual HIV incidence rate with a relative standard error (RSE) of 30% or less for persons aged 15-49 years, as well as a national annual HIV incidence rate for women aged 15-24 with an RSE of 30% or less. Based on the sample allocation given in (c) above, the RSE of the estimated incidence rate was expected be approximately 33%.

The following assumptions were used to develop the sample design for the LePHIA 2016-2017.

- An overall HIV prevalence rate of 0.23 (23%) that varies by district.
- An annual HIV incidence rate for adults aged 15-49 years of $P_a = 0.0185$ (1.85%).
- An MDRI of 130 days, yielding an annualization rate of 365/130= 2.8077. Hence, the estimated incidence rate for MDRI = 130 days is $P_m = 0.0185/2.8077$=0.0066 (0.66%).
- A VLS rate among HIV-positive adults aged 15-49 years in each district of P_{vh} = 50%. This conservative assumption overstates the actual variance of the VLS rate.
- An intra-cluster correlation (ICC) of = 0.05 for both prevalence and incidence. The ICC provides an average measure of the homogeneity of responses within the first-stage sampling units. This assumption is conservative.
- An occupancy rate of 96.0% for sampled dwellings. Note that this is not included in the calculation of the overall survey RR, but does determine the initial number of dwelling units to be sampled. A sample of 10,887 dwelling units will yield a sample of about 10,450 occupied dwelling units (households).
- The average number of persons aged 15-49 years in a household is 1.33.
- The percentage of persons in households who are aged 0-14 years is 32.9%.
- The percentage of persons in households who are aged 50-59 years is 5.9%.
- Among the individuals aged 15-59 years, an overall biomarker RR of 80.9%, reflecting sample loss due to any of the following reasons: nonparticipation (refusal) of some sample households, nonresponse to the individual interview, refusal to provide a blood sample, or providing a non-analyzable blood sample.
- Among the children in the eligible responding households, an overall biomarker RR of 75.9% for children aged 0-14 years. This value is the comparable RR for adults minus 5%.

Selection of the Primary Sampling Units

The PSUs for the LePHIA 2016-2017 were defined to be the EAs created for the 2016 Lesotho Census. The sampling frame consisted of approximately 6,000 EAs containing an estimated 570,000 households and 2,000,000 persons. The EAs varied in size from 80 to 150 households with approximately 400 persons per EA.

A stratified sample of 418 EAs was selected from the sampling frame. The ten strata specified for sampling were the ten districts of Lesotho. The EA samples were selected systematically and with probabilities proportionate to a measure of size (MOS) equal to the number of households in the EA based on preliminary results of the 2016 Lesotho Census. Prior to selection, the EAs were sorted by EA code within each stratum (district). The sorting of the EAs prior to sample selection induced an implicit geographic stratification, which included constituency, community or town council, ecological zone and type of residence. To select the sample from a particular stratum, the cumulative MOS was determined for each EA in the ordered list of EAs, and the sample selections were designated using a sampling interval equal to the total MOS of the EAs in the stratum divided by the number of EAs to be selected and a random starting point. The resulting sample had the property that the probability of selecting an EA within a particular stratum was proportional to the MOS of the EA in the stratum.

Details regarding EA substitution and segmentation may be found in the LePHIA 2016-2017 Sampling and Weighting Technical Report on the PHIA Project website.

Selection of Households

For both sampling and analysis purposes, a household is defined as a group of individuals who reside in a physical structure such as a house, apartment, compound, or homestead, and share in housekeeping arrangements. The physical structure in which people reside is referred to as the dwelling unit, which may contain more than one household meeting the above definition. Households were eligible for participation in the survey if they are located within the sampled EA.

The selection of households for the LePHIA 2016-2017 involved the following steps: (1) listing the dwelling units/households within the sampled EAs; (2) assigning eligibility codes to the listed dwelling unit/household records; (3) selecting the samples of dwelling units/households; and (4) designating a subsample of households for data collection for children.

A description of the household listing process as well as a summary of household eligibility may be found in the LePHIA 2016-2017 Sampling and Weighting Technical Report on the PHIA Project website.

Selection of households utilized an equal probability design. In order to achieve equal probability samples of households within each of the 10 districts of Lesotho, the sampling rates required to select dwelling units/households within an EA depended on the difference between the MOS used in sampling and the actual number of dwelling units/households found at the time of listing. Thus, application of these within-EA sampling rates yielded more or less than the desired 30 households in EAs where the sampling MOS differed from the actual listing count. The LePHIA 2016-2017 Sampling and Weighting Technical Report provides an in-depth description of the equal probability sample design, as well as a detailed summary of the results of the household selection.

Table A.1 Number of sampled dwelling units/households and expected unequal weighting design effects by stratum

Stratum (District)	Number of sample PSUs (clusters)	Number of sampled dwelling units/house-holds	Number of dwelling units/house-holds flagged for child data collection	Minimum PSU sample size	Maximum PSU sample size	UEW DEFF for LEPHIA household sample after capping
Butha-Buthe	27	703	352	15	34	1.00
Leribe	65	1,693	846	15	35	1.00
Berea	51	1,328	664	15	35	1.06
Maseru	102	2,657	1,329	15	35	1.02
Mafeteng	41	1,059	529	15	35	1.02
Mohale's Hoek	39	1,031	516	15	35	1.02
Quthing	26	676	338	16	35	1.01
Qacha's Nek	20	521	260	21	34	1.00
Mokhotlong	21	547	273	18	35	1.00
Thaba-Tseka	26	677	339	15	35	1.03
Total	418	10,892	5,446	15	35	1.05*

*Reflects variation in weights within and across strata.
PSU: Primary sampling unit
UEW: Unequal weighting
DEFF: Design effect

Selection of Individuals

The selection of individuals for the LePHIA 2016-2017 involved the following steps: (1) compiling a list of all individuals known to reside in the household or who slept in the household during the night prior to data collection; (2) identifying those rostered individuals who are eligible for data collection; and (3) selecting for the study those individuals meeting the age and residency requirements of the study. However, only those individuals who slept in the household the night before the household interview (i.e., the *de facto* population) were retained for subsequent weighting and analysis.

The LePHIA 2016-2017 Sampling and Weighting Technical Report on the PHIA Project website provides a brief description of the process for listing and selecting individuals for participation in the LePHIA 2016-2017, and also presents detailed summaries of the distributions of eligible individuals and participants in individual interviews and HIV testing by strata and age.

A.2 Weighting

Overview

In general, the purpose of weighting survey data from a complex sample design is to (1) compensate for variable probabilities of selection, (2) account for differential nonresponse rates within relevant subsets of the sample, and (3) adjust for possible under-coverage of certain population groups. Weighting is accomplished by assigning an appropriate sampling weight to each responding sampled unit (e.g., a household or person), and using that weight to calculate weighted estimates from the sample. The critical component of the sampling weight is the base weight, which is defined as the reciprocal of the probability of including a household or person in the sample. The base weights are used to inflate the responses of the sampled units to population levels and are generally unbiased (or consistent) if there is no nonresponse or noncoverage in the sample. When nonresponse or noncoverage occurs in the survey, weighting adjustments are applied to the base weights to compensate for both types of sample omissions.

Nonresponse is unavoidable in virtually all surveys of human populations. For LePHIA 2016-2017, nonresponse can occur at different stages of data collection, for example, (1) before the enumeration of individuals in the household, (2) after household enumeration and selection of persons but before completion of the individual interview, and (3) after completion of the interview, but before collection of a viable blood sample.

Noncoverage arises when some members of the survey population have no chance of being selected for the sample. For example, non-coverage can occur if the field operations fail to enumerate all dwelling units during the listing process, or if certain household members are omitted from the household rosters. To compensate for such omissions, post-stratification procedures are used to calibrate the weighted sample counts to available population projections. For LePHIA 2016-2017, the weights were calibrated to the 2016 Population and Housing Census.

Methods

The overall weighting approach for LePHIA 2016-2017 included several steps. Methods and results for each of the steps below are detailed in the LePHIA 2016-2017 Sampling and Weighting Technical Report.

- **Initial checks**: Checks of the data files were carried out as part of the survey and data QC, and the probabilities of selection for PSUs and households were calculated and checked.

- **Creation of jackknife replicates**: The variables needed to create the jackknife replicates for variance estimation were then established. This step can be implemented immediately after the PSU sample has been selected. All of the subsequent weighting steps described below were applied to the full sample, and to each of the jackknife replicates.

- **Calculation of PSU base weights**: The weighting process began with the calculation and checking of the sample PSU (EA) base weights as the reciprocals of the overall PSU probabilities of selection.

- **Calculation of household weights**: The next step was to calculate household weights. The household base weights were calculated as the PSU weights times the reciprocal of the within-PSU household selection probabilities. The household base weights were adjusted first to account for dwelling units for which it could not be determined whether the dwelling unit contained an eligible household and then the responding households had their weights adjusted to account for nonresponding eligible households. This adjustment was made based on the EA the households were in, and the resulting weight was the final household weight.

- **Calculation of person-level interview weights**: Once the household weights were determined, they were used to calculate the individual base weights. The individual base weights were then adjusted for nonresponse among the eligible individuals, with a final adjustment for the individual weights to compensate for under-coverage in the sampling process by post-stratifying (i.e., weighting up) to 2016 Population and Housing Census.

- **Calculation of person-level HIV testing weights**: The individual weights adjusted for nonresponse were in turn the initial weights for the HIV testing data sample, with a further adjustment for nonresponse to HIV testing, and a final post-stratification adjustment to compensate for under-coverage.

- **Application of weighting adjustments to jackknife replicates**: All of the adjustment processes were applied to the full sample and the replicate samples so that the final set of full sample and replicate weights could be used for variance estimation that accounted for the complex sample design and every step of the weighting process.

APPENDIX B HIV TESTING METHODOLOGY

B.1 Specimen Collection and Handling

Blood was collected by qualified survey staff from consenting participants: 14 milliliters (mL) of venous blood from adults (those aged 15-59 years), 6 mL of venous blood from children aged 2-14 years and 1 mL of capillary blood from children aged 0-2 years using finger-stick for children aged 6-23 months and heel-stick for children less than age six months. 1 mL using a finger prick was also collected for individuals aged 2 years and older where venous collection was not possible.

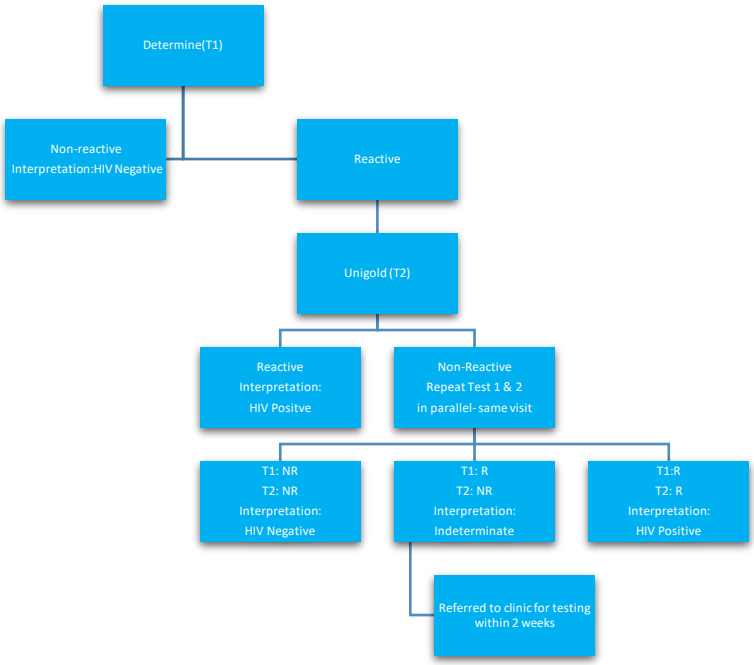
Blood samples were labeled with a unique bar-coded participant identification number and stored in temperature-controlled cooler boxes. At the end of each day, samples were transported to a satellite laboratory for registration in a laboratory information management system, processing into plasma and dried blood spots (DBS), and storage at -20°C within 24 hours of blood collection. Approximately weekly, samples were transported to the Lesotho National Reference Laboratory (NRL) for additional testing and long-term storage at -80°C.

B.2 Household-Based Procedures

HIV Rapid Testing

HIV rapid testing was conducted in each household in accordance with Lesotho's national guidelines (Figure B.2.A). HIV-positive samples underwent additional testing at a satellite laboratory, as described in Section B.3. For participants who self-reported an HIV-positive status but tested HIV negative during the survey, additional testing was conducted at NRL, as described in Section B.3. For children aged less than 18 months, only the initial rapid test was performed. If the test was reactive, the sample underwent additional testing at NRL, as described in Section B.3.

Figure B.2.A Household-based HIV testing algorithm, LePHIA 2016-2017



CD4 Testing

All participants who tested HIV positive and a random sample of two percent of participants who tested HIV negative received a CD4 T-cell count measurement in the field by qualified survey staff. The measurement was performed using a Pima™ Analyzer and Pima™ CD4 Cartridge (Abbott Molecular Inc., Chicago, IL, United States of America [USA], formerly Alere).

Counseling, Referral to Care, and Active Linkage to Care

Pre- and post-test counseling were conducted in each household in accordance with Lesotho's national guidelines. For participants age 12 years or older, results were communicated directly to the participant, while for participants aged less than 12 years, results were communicated to the participant's parent or guardian. All participants who consented to HIV testing were asked to share contact information and to select a referral health facility prior to testing. Participants with an HIV-positive test result were referred to HIV care and treatment at the health facility of their choice, while participants with an HIV-indeterminate test result were advised to seek repeated testing at the health facility of their choice in two weeks. Further, HIV-positive participants were asked to consent to be contacted by qualified healthcare personnel, in order to facilitate active linkage to HIV care and treatment in Lesotho's healthcare system.

In rare cases where participants were provided an incorrect HIV test result, self-reported an HIV-positive status but tested HIV negative during the survey, or required additional collection of blood to complete testing, households were revisited by qualified personnel to provide participants with correct information and guidance on appropriate actions.

Quality Assurance and Control

To control the quality of the performance of HIV rapid tests, field staff conducted testing of a panel of HIV-positive and HIV-negative dried tube specimens on a weekly basis. To assure the quality of the performance of field staff conducting HIV testing, proficiency testing using a panel of blinded HIV-positive and HIV-negative dried tube specimens was evaluated twice during the course of fieldwork. Additionally, sample retesting was conducted at a satellite lab for (1) the first 50 samples tested by each field staff member, (2) a random sample of five percent of HIV-negative specimens, and (3) all HIV-indeterminate specimens.

The potential limitations of rapid tests in detecting HIV antibodies among people in the serological window of infection, or in HIV-infected patients on antiretroviral therapy (ART), and in detecting maternal HIV antibodies among infants older than four months are all inherent limitations of the study. Participants in the first two categories are not expected to be a significant source of bias. Further analysis will identify how many infants born to HIV-positive women were not identified by a rapid test.

B.3 Laboratory-Based Procedures

Three survey satellite laboratories were established in existing health facility laboratories across the country. An additional two mobile satellite labs were also utilized. One central laboratory was established at NRL in Maseru, Lesotho.

Geenius Testing

All HIV-positive samples, as well as samples with discrepant or indeterminate results, were tested using the Geenius™ HIV 1/2 Supplemental Assay (Bio-Rad, Hercules, CA, USA) (Figure B.3.A). Testing was conducted at the satellite and mobile laboratories in accordance with the manufacturer's protocol.

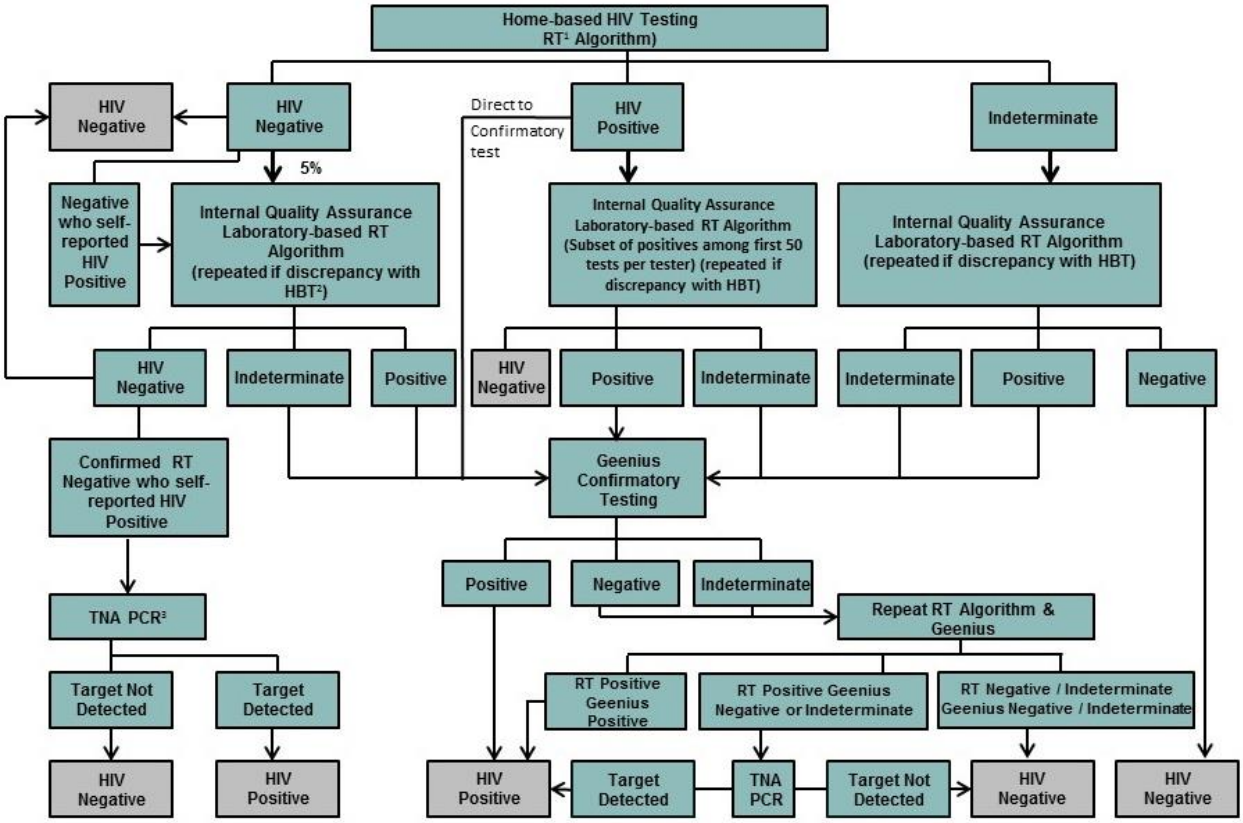
HIV TNA Polymerase Chain Reaction

HIV total nucleic acid (TNA) PCR was conducted for children aged less than 18 months who had a reactive HIV test result during household-based testing (Figure B.3.B). Additionally, HIV TNA PCR was evaluated for participants who self-reported an HIV-positive status but tested HIV negative during the survey, as well as for samples that were HIV positive by the rapid testing algorithm but were HIV negative or indeterminate by Geenius testing (Figure B.3.A). HIV TNA PCR was conducted on the Roche COBAS® AmpliPrep Instrument and COBAS® TaqMan 96 Analyzer using the COBAS® AmpliPrep/COBAS® TaqMan HIV-1 qualitative test (Roche Molecular Diagnostics, Branchburg, NJ, USA).

Classification of Final HIV Status

For participants aged 18 months or older, the algorithm for classification of final HIV status included results from HIV rapid testing, Geenius testing, and HIV TNA PCR (Figure B.3.A). For participants of ages less than 18 months, the algorithm for classification of final HIV status included results from HIV rapid testing and HIV TNA PCR (Figure B.3.B). Classification of final HIV status was used to determine estimates for HIV prevalence and to inform estimates for HIV incidence.

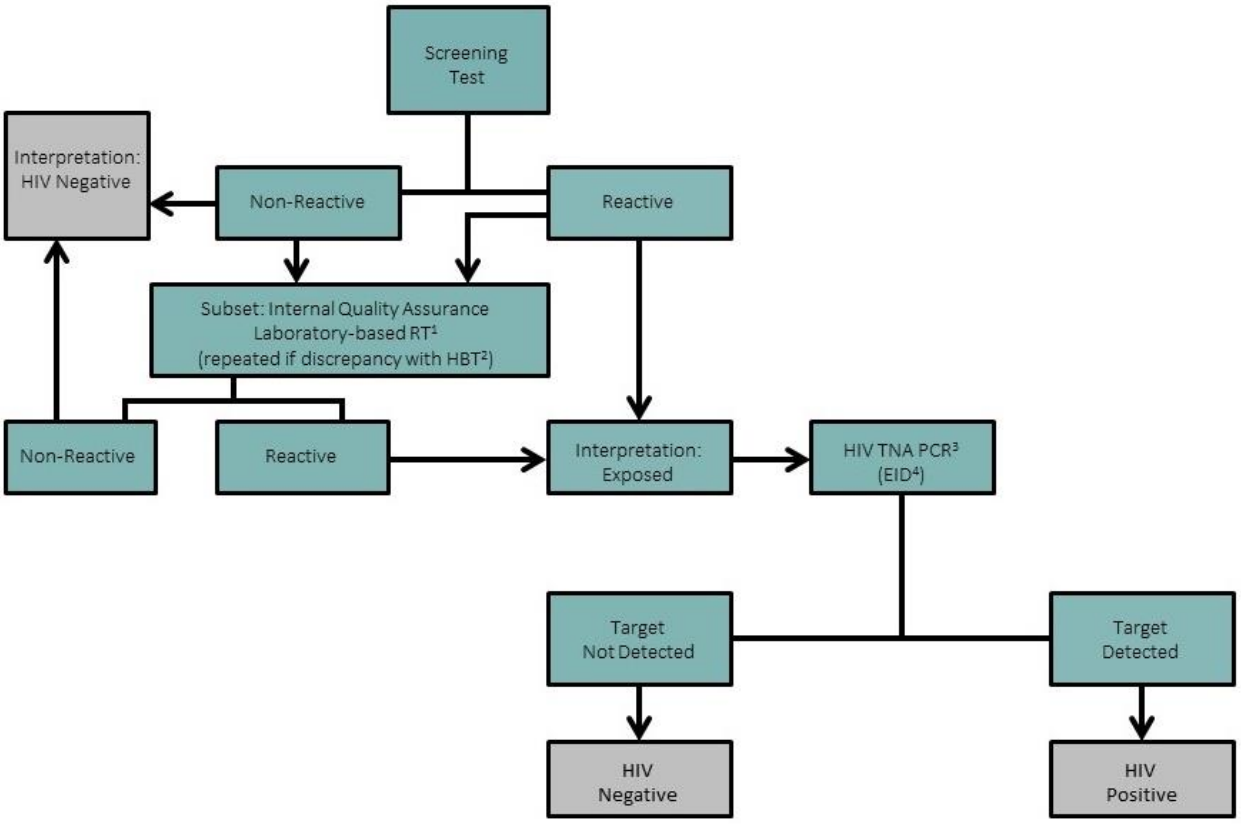
Figure B.3.A Final HIV Status Classification Algorithm (ages 18 months and older), LePHIA 2016-2017



[1]RT: rapid test; [2]HBT: home-based testing; [3]TNA PCR: total nucleic acid polymerase chain reaction

Note: Grey boxes indicate a final HIV-status determination

Figure B.3.B Final HIV Status Classification Algorithm (<18 months), LePHIA 2016-2017



¹RT: rapid testing; ²HBT: home-based testing; ³TNA PCR: total nucleic acid polymerase chain reaction; ⁴EID: early infant diagnosis

Note: Grey boxes indicate a final HIV-status determination

Viral Load Testing

HIV-1 viral load from confirmed HIV-1 positive participants was measured using the COBAS® AmpliPrep/COBAS® TaqMan HIV-1 Test, version 2.0 (v2.0) (Roche Molecular Systems, Branchburg, NJ, USA). The COBAS® Ampliprep instrument was used to prepare plasma samples for nucleic acid amplification and detection of HIV-1 RNA. The Abbott RT-PCR m2000 system (Abbott Molecular, Wiesbaden, Germany) was used to measure HIV-1 VL from DBS samples from children and from adults with insufficient volume of plasma. The DBS VL tests were performed at the National Institute of Communicable Diseases (NICD) in South Africa in accordance with the manufacturer's protocol.

VL results were returned to the health facility chosen by each HIV-positive participant. Participants were provided with a referral form during home-based testing and counseling for subsequent retrieval of their results. Survey staff also contacted participants who provided contact information, informing them that their VL results were available at the chosen facility and further advising them to seek care and treatment.

HIV Recency Testing

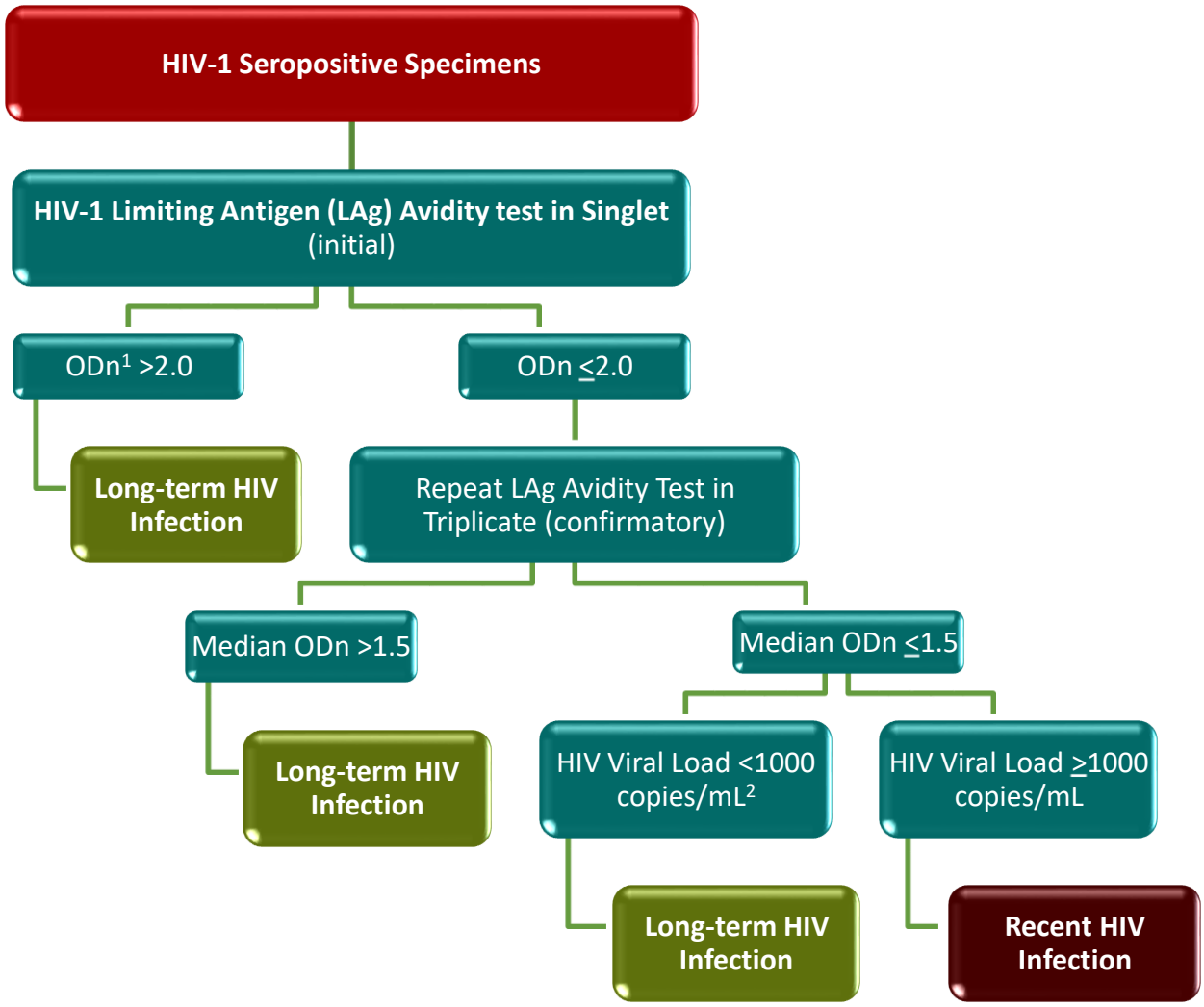
Estimation of HIV incidence was based on the classification of confirmed HIV-positive cases as recent or long-term HIV infections. The survey used two laboratory-based testing algorithms to estimate incidence. The first estimate used an algorithm that employed a combination of the HIV-1 Limiting Antigen (LAg) Avidity enzyme immunoassay (Sedia Biosciences Corporation, Portland, OR, USA) and VL

results (Figure B.3.C). Antiretroviral (ARV) detection results were added to that algorithm for the second estimate (Figure B.3.D). The HIV recent infection testing algorithms were applied to repository specimens from all confirmed HIV-positive participants aged 18 months and older.

LAg testing was performed twice, with an initial screening test followed by a confirmatory process: specimens with an ODn > 2.0 during initial testing were classified as long-term infections, while those with ODn ≤ 2.0 underwent further testing of the specimen in triplicate. Specimens with median ODn > 1.5 in confirmatory testing were classified as long-term infections. Specimens with median ODn < 0.4 were retested using the HIV diagnostic testing algorithm to confirm HIV-1 seropositivity, and samples identified as HIV-1 seronegative were excluded from the total number of HIV positives and incorporated into the total number of negative specimens for incidence estimation.

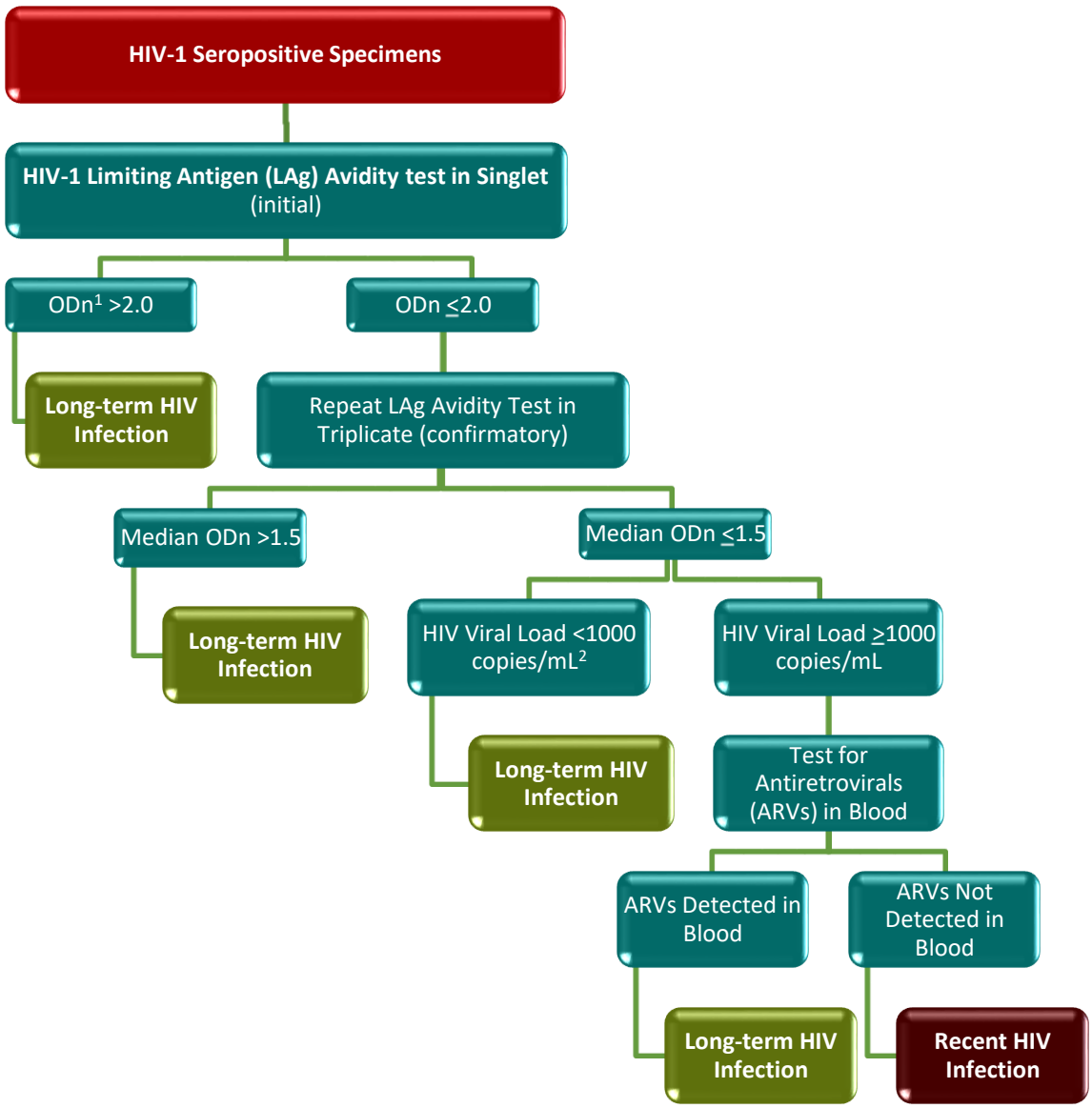
Specimens with median ODn ≤ 1.5 were classified as potential HIV-recent infections, and their VL results were assessed. For the first incidence testing algorithm, specimens with VL < 1,000 copies/mL were classified as long-term infections, while those with VL ≥ 1,000 copies/mL were classified as recent infections. For the updated incidence algorithm, those classified as recent infections by the first algorithm were reclassified using ARV detection data. Those specimens in which efavirenz (EFV), lopinavir (LPV), and nevirapine (NVP) were detected were classified as long-term infections and those in which no ARVs were detected remained classified as recent infections.

Figure B.3.C HIV-1 Recent Infection Testing Algorithm (LAg/VL algorithm), LePHIA 2016-2017



[1]ODn: normalized optical density; [2]mL: milliliter

Figure B.3.D HIV-1 Recent Infection Testing Algorithm (LAg/VL/ARV algorithm), LePHIA 2016-2017



[1]ODn: normalized optical density; [2]mL: milliliter

HIV Incidence Estimation

Incidence estimates were obtained using the formula recommended by the WHO Incidence Working Group and Consortium for Evaluation and Performance of Incidence Assays. Weighted counts for HIV-negative persons (N); HIV-positive persons (P); numbers tested on the LAg assay (Q); and numbers HIV recent (R) are provided for use in incidence calculations or the United Nations Joint Programme on HIV/AIDS Spectrum models (Tables B.3.A, B.3.B). Incidence estimates were calculated using the following parameters: mean duration recent infection (MDRI) = 130 days (95% CI: 118-142 days); PFR = 0.00; T = 1 year. In-depth details are provided in the LePHIA Technical Report on the PHIA Project website.

Table B.3.A: Annual HIV incidence auxiliary data: N, P, Q, R (LAg/VL algorithm)

Annual incidence of HIV among persons aged 15-49 and 15-59 years, by sex and age, using the limiting antigen (LAg)+viral load (VL) algorithm LePHIA 2016-2017

	Male				Female				Total			
Age	Number HIV negative[1] (N)	Number HIV positive[1] (P)	Number tested on LAg assay[1] (Q)	Number HIV recent[1] (R)	Number HIV negative[1] (N)	Number HIV positive[1] (P)	Number tested on LAg assay[1] (Q)	Number HIV recent[1] (R)	Number HIV negative[1] (N)	Number HIV positive[1] (P)	Number tested on LAg assay[1] (Q)	Number HIV recent[1] (R)
15-24	1632.88	57.12	57.12	0.73	2096.34	261.66	260.32	13.58	3755.62	292.38	291.23	12.48
25-34	1066.02	251.98	251.98	7.16	1224.49	686.51	685.40	5.15	2347.44	881.56	880.64	13.24
35-49	712.72	478.28	478.28	7.75	896.43	824.57	824.57	8.83	1631.78	1280.22	1280.22	16.97
15-49	3395.71	803.29	803.29	16.14	4211.47	1778.53	1776.06	27.36	7710.09	2478.91	2476.84	42.79
15-59	3772.51	989.49	989.49	16.55	4819.57	2100.43	2097.91	30.14	8696.30	2985.70	2983.58	45.73

[1]Weighted number

Note: mean duration recent infection (MDRI) = 130 days (95% confidence interval: 118-142 days); proportion false recent (PFR) = 0.00; time cutoff (T) = 1 year

Weighted figures calculated using (normalized) btwt0.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.

Table B.3.B: Annual HIV incidence auxiliary data: N, P, Q, R (LAg/VL/ARV algorithm)

Annual incidence of HIV among persons aged 15-49 and 15-59 years, by sex and age, using the limiting antigen (LAg)+viral load (VL)+antiretroviral (ARV) algorithm, LePHIA 2016-2017

	Male				Female				Total			
Age	Number HIV negative[1] (N)	Number HIV positive[1] (P)	Number tested on LAg assay[1] (Q)	Number HIV recent[1] (R)	Number HIV negative[1] (N)	Number HIV positive[1] (P)	Number tested on LAg assay[1] (Q)	Number HIV recent[1] (R)	Number HIV negative[1] (N)	Number HIV positive[1] (P)	Number tested on LAg assay[1] (Q)	Number HIV recent[1] (R)
15-24	1632.88	57.12	57.12	0.73	2096.34	261.66	260.32	11.15	3755.62	292.38	291.23	10.41
25-34	1066.02	251.98	251.98	5.33	1224.49	686.51	685.40	5.15	2347.44	881.56	880.64	10.94
35-49	712.72	478.28	478.28	6.81	896.43	824.57	824.57	3.58	1631.78	1280.22	1280.22	11.45
15-49	3395.71	803.29	803.29	13.23	4211.47	1778.53	1776.06	19.82	7710.09	2478.91	2476.84	32.90
15-59	3772.51	989.49	989.49	13.57	4819.57	2100.43	2097.91	21.00	8696.30	2985.70	2983.58	34.36

[1]Weighted number

Note: mean duration recent infection (MDRI) = 130 days (95% confidence interval: 118-142 days); proportion false recent (PFR) = 0.00; time cutoff (T) = 1 year

Weighted figures calculated using (normalized) btwt0.

The sum of the sample sizes for a given classification may be less than the total sample size because of missing responses to the classification variable.

Detection of Antiretrovirals

To understand recent exposure to ARVs and hence level of ART coverage, samples from all confirmed HIV-positive participants were evaluated for the presence of selected ARVs, using high-resolution liquid chromatography coupled with tandem mass spectrometry to detect ARVs from DBS specimens.[1] Three ARVs—two NNRTIs, EFV and NVP, and one PI, LPV—were used as markers for both first- and second-line regimens, based on Lesotho's national treatment guidelines. The ARVs were selected based on their long half-lives, allowing for a longer window period from drug exposure to detection.

To qualitatively detect ARVs, a single DBS was eluted, and chromatographic separation carried out on a Luna 5µm PFP column (110 Å, 50 x 2 mm) (Phenomonex, Torrance, CA, USA). Each ARV was detected using an API 4000 LC/MS/MS instrument (Applied Biosystems, Foster City, CA, USA). Internal standards and in-house QC cut-off samples including negative controls were utilized in each run. This qualitative method used a limit of detection of 0.02 µg/mL for each ARV, with a signal-to-noise ratio of at least 5:1 for all ARVs. Samples with concentrations above 0.02 µg/mL were considered positive for each ARV. Testing was conducted at University of Cape Town in South Africa.

Genotyping for Detection of Antiretroviral Drug Resistance and HIV Subtyping

To determine the extent of transmitted HIV-1 drug resistance mutations among participants in LePHIA 2016-2017, samples from confirmed HIV-positive participants aged less than 18 months and HIV-positive participants aged 18 months or older who were classified as recent infections as well as an equal or greater number of who were classified as long-term infections were evaluated using an HIV-1 Genotyping Kit (Applied Biosystems) to identify mutations within the HIV-1 *pol* gene region, which encodes amino acid substitutions known to be responsible for resistance to ARVs.

Viral TNA from plasma or DBS was extracted using the NucliSENS® easyMAG® (bioMérieux, Marcy l'Etoile, France) platform. The HIV *pol* gene was amplified by one-step reverse transcription (RT)-PCR (Invitrogen), which was followed by nested PCR. Sequencing of the approximately one-kilobase amplicons was performed on the ABI 3730 DNA Analyzer (Applied Biosystems).[4,5,6]

The customized RECall software program was used to edit raw sequences and generate consensus sequences.[2] Mutations in the protease and reverse transcriptase genes were classified as potentially associated with drug resistance, according to the Stanford University HIV Drug Resistance Database.[3] Internal QA measures and in-house QC samples were included in each run to validate the testing process and results. The assay's sensitivity has been established at 1000 copies/mL for plasma and DBS.[4] Sequences with >98% homology were flagged for potential cross-contamination or possible epidemiological links. Sequences were also analyzed for potential cross-contamination by phylogenetic analysis from codon 6 of the protease gene to codon 251 of the reverse transcriptase gene.

Subtyping of each sample was performed using the REGA HIV-1 & 2 Automated Subtyping Tool.[5,6] This BioAfrica viral subtyping tool is designed to use phylogenetic methods in order to identify the HIV-1 subtype of a specific sequence. The sequence is analyzed for recombination using boot-scanning methods.

B.4 References

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APPENDIX C ESTIMATES OF SAMPLING ERRORS

Estimates from sample surveys are affected by two types of errors: non-sampling errors and sampling errors. Non-sampling errors result from mistakes made during data collection (e.g., misinterpretation of an HIV test result) and data management (e.g., transcription errors in data entry). While LePHIA 2016-2017 implemented numerous QA and QC measures minimize non-sampling errors, these errors are impossible to avoid and difficult to evaluate statistically.

In contrast, sampling errors can be evaluated statistically. The sample of respondents selected for LePHIA 2016-2017 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 between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

The standard error, which is the square root of the variance, is the usual measurement of sampling error for a particular statistic (e.g., proportion, mean, rate, count). In turn, 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 approximately plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

LePHIA 2016-2017 utilized a multi-stage stratified sample design, which required complex calculations to obtain sampling errors. Specifically, a variant of the Jackknife replication method was implemented in SAS to estimate variance for proportions (e.g., HIV prevalence), rates (e.g., annual HIV incidence), and counts (e.g., numbers of people living with HIV). Each replication considered all but one cluster in the calculation of the estimates. Pseudo-independent replications were thus created. In LePHIA 2016-2017 a Jackknife replicate was created by randomly deleting one cluster from each variance-estimation stratum and retaining all of the clusters in the remaining strata. A total of 206 variance-estimation strata were created by pairing (or occasionally tripling) the sample clusters in the systematic order in which they had been selected . Hence, 206 replications were created. The variance of a sample-based statistic, *y*, was calculated as follows:

$$var(y) = \sum_{k=1}^{K} (y_k - y)^2$$

where y is the full-sample estimate, and y_k is the corresponding estimate for jackknife replicate k (k = 1, 2, ..., K).

In addition to the standard error, the design effect for each estimate was also calculated. The design effect is defined as the ratio of the standard error using the given sample design to the standard error that would result if a simple random sample had been used. A design effect 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. Confidence limits for the estimates, which are calculated as

$$\mathrm{y} \pm t(0.975;\, K)\sqrt{var(y)}\,,$$

where $t(0.975; K)$ is the 97.5th percentile of a *t*-distribution with *K* degrees of freedom, were also computed.

Sampling errors for selected variables from the LePHIA 2016-2017 are presented in tables C.1 through C.8, and sampling errors for all survey estimates may be found online on the PHIA website. For each variable, sampling error tables include the weighted estimate, unweighted denominator, standard error, design effect, and lower and upper 95 percent confidence limits.

Table C.1 Sampling errors: Annual HIV incidence by age, LePHIA 2016-2017

Age (years)	Weighted estimate (%)	Design effect	Lower confidence limit (%)	Upper confidence limit (%)
		TOTAL		
15-24	0.78	0.93	0.31	1.25
25-34	1.30	1.09	0.53	2.07
35-49	1.95	1.23	0.82	3.07
15-49	1.19	1.22	0.77	1.61
15-59	1.10	1.23	0.72	1.48
		MALE		
15-24	0.13	0.72	0.00	0.41
25-34	1.39	1.14	0.22	2.56
35-49	2.65	1.11	0.66	4.59
15-49	1.09	1.16	0.50	1.67
15-59	1.00	1.19	0.47	1.54
		FEMALE		
15-24	1.49	1.10	0.62	2.35
25-34	1.18	0.70	0.16	2.18
35-49	1.11	0.95	0.00	2.26
15-49	1.31	0.94	0.73	1.90
15-59	1.22	0.95	0.69	1.74

Table C.2 Sampling errors: HIV prevalence by age, LePHIA 2016-2017

Ages	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)
			TOTAL		
0-17 months	0.8	315	0.5	0.0	1.7
18-59 months	1.1	824	0.3	0.4	1.8
5-9	1.9	1,339	0.3	1.2	2.6
10-14	3.2	1,488	0.5	2.1	4.2
Total 0-4	1.0	1,139	0.3	0.5	1.6
Total 0-14	2.1	3,966	0.3	1.5	2.6
15-19	4.2	2,077	0.5	3.3	5.2
20-24	10.4	1,971	0.7	9.0	11.8
25-29	22.0	1,761	1.0	19.9	24.0
30-34	33.3	1,468	1.3	30.6	36.0
35-39	41.5	1,200	1.5	38.3	44.7
40-44	47.6	953	2.0	43.5	51.6
45-49	43.6	759	1.8	40.0	47.2
50-54	38.8	720	2.0	34.8	42.9
55-59	32.0	773	1.8	28.3	35.7
Total 15-24	7.2	4,048	0.4	6.4	8.0
Total 15-49	24.3	10,189	0.4	23.4	25.2
Total 15-59	25.6	11,682	0.4	24.7	26.4
			MALE		
0-17 months	0.6	157	0.6	0.0	1.7
18-59 months	0.6	423	0.4	0.0	1.3
5-9	0.9	663	0.4	0.1	1.6
10-14	3.1	760	0.6	1.7	4.4
Total 0-4	0.6	580	0.3	0.0	1.2
Total 0-14	1.5	2,003	0.3	1.0	2.1
15-19	2.8	921	0.5	1.8	3.8
20-24	4.0	769	0.6	2.7	5.3
25-29	12.9	707	1.3	10.2	15.6
30-34	26.0	611	1.9	22.0	30.0
35-39	33.9	497	2.1	29.5	38.3
40-44	46.9	379	2.9	40.9	52.9
45-49	43.0	315	2.6	37.7	48.3
50-54	38.7	261	3.2	32.1	45.3
55-59	33.3	302	2.8	27.6	39.1
Total 15-24	3.4	1,690	0.4	2.6	4.2
Total 15-49	19.1	4,199	0.6	18.0	20.3
Total 15-59	20.8	4,762	0.6	19.6	22.0
			FEMALE		
0-17 months	1.0	158	0.7	0.0	2.5
18-59 months	1.6	401	0.6	0.5	2.8
5-9	2.9	676	0.6	1.7	4.1
10-14	3.3	728	0.7	1.8	4.8
Total 0-4	1.5	559	0.5	0.5	2.4
Total 0-14	2.6	1,963	0.4	1.8	3.3
15-19	5.7	1,156	0.8	4.1	7.2
20-24	16.7	1,202	1.1	14.4	19.0
25-29	31.4	1,054	1.5	28.3	34.4
30-34	41.2	857	1.8	37.5	44.9
35-39	49.9	703	1.9	46.0	53.8
40-44	48.3	574	2.3	43.5	53.1
45-49	44.2	444	2.3	39.4	49.0
50-54	38.9	459	2.2	34.5	43.4
55-59	31.0	471	2.3	26.2	35.7
Total 15-24	11.1	2,358	0.7	9.7	12.5
Total 15-49	29.7	5,990	0.6	28.5	30.9
Total 15-59	30.4	6,920	0.5	29.2	31.5

Table C.3 Sampling errors: HIV prevalence by residence and region, ages 15-59 years, LePHIA 2016-2017

Characteristic	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)
			TOTAL		
Residence					
Urban	26.9	4,438	0.7	25.4	28.3
Peri-urban	23.1	781	1.9	19.1	27.1
Rural	24.9	6,463	0.6	23.6	26.2
Region					
Maseru	27.8	2,899	0.8	26.1	29.4
Mafeteng	26.3	1,199	1.2	23.9	28.8
Mohale's Hoek	29.3	889	1.6	26.0	32.5
Leribe	23.7	1,955	1.0	21.6	25.7
Berea	23.0	1,477	1.4	20.2	25.8
Quthing	26.5	642	2.3	21.7	31.2
Butha Buthe	17.8	715	1.5	14.8	20.8
Mokhotlong	26.1	679	2.1	21.8	30.5
Qacha's Nek	25.9	458	3.2	19.4	32.4
Thaba Tseka	26.2	769	1.8	22.5	29.9
			MALE		
Residence					
Urban	21.7	1,709	1.0	19.7	23.8
Peri-urban	19.0	328	2.9	13.0	25.1
Rural	20.3	2,725	0.8	18.7	21.9
Region					
Maseru	24.0	1,215	1.1	21.7	26.2
Mafeteng	19.8	498	1.9	15.9	23.8
Mohale's Hoek	25.1	341	2.7	19.6	30.7
Leribe	18.5	803	1.5	15.3	21.7
Berea	16.8	599	1.5	13.7	19.9
Quthing	21.1	243	3.3	14.3	27.8
Butha Buthe	12.6	299	1.8	9.0	16.2
Mokhotlong	23.2	274	2.5	18.1	28.3
Qacha's Nek	21.5	174	3.3	14.8	28.2
Thaba Tseka	22.1	316	2.5	17.0	27.3
			FEMALE		
Residence					
Urban	31.6	2,729	0.9	29.7	33.4
Peri-urban	27.1	453	1.5	24.0	30.3
Rural	29.8	3,738	0.8	28.2	31.4
Region					
Maseru	31.7	1,684	1.2	29.2	34.2
Mafeteng	32.9	701	1.4	30.0	35.8
Mohale's Hoek	33.0	548	2.0	29.0	37.1
Leribe	29.1	1,152	1.1	26.8	31.4
Berea	29.1	878	1.7	25.6	32.6
Quthing	31.0	399	3.1	24.6	37.3
Butha Buthe	23.3	416	1.8	19.6	27.1
Mokhotlong	29.0	405	3.3	22.2	35.8
Qacha's Nek	29.7	284	4.0	21.5	37.9
Thaba Tseka	30.3	453	2.2	25.7	34.9

Table C.4 Sampling errors: Viral load suppression by age, LePHIA 2016-2017

Age (years)	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)
			TOTAL		
0-14	62.7	83	5.9	50.6	74.8
15-24	51.0	330	2.7	45.5	56.5
25-34	57.9	974	1.8	54.3	61.6
35-44	71.5	1,003	1.5	68.3	74.7
45-59	80.8	890	1.3	78.1	83.6
Total 15-24	51.0	330	2.7	45.5	56.5
Total 15-49	65.0	2,649	1.0	62.9	67.1
Total 15-59	67.6	3,197	0.9	65.7	69.5
			MALE		
0-14	51.9	32	9.2	33.0	70.8
15-24	51.3	58	6.7	37.4	65.1
25-34	46.1	259	3.3	39.4	52.8
35-44	64.1	352	2.6	58.7	69.4
45-59	81.4	350	2.1	77.1	85.8
Total 15-24	51.3	58	6.7	37.4	65.1
Total 15-49	59.2	810	1.7	55.8	62.6
Total 15-59	63.4	1,019	1.5	60.4	66.4
			FEMALE		
0-14	69.3	51	7.3	54.3	84.4
15-24	50.9	272	3.0	44.8	57.1
25-34	64.6	715	2.1	60.3	69.0
35-44	77.8	651	1.7	74.3	81.2
45-59	80.3	540	1.7	76.9	83.7
Total 15-24	50.9	272	3.0	44.8	57.1
Total 15-49	68.9	1,839	1.2	66.4	71.3
Total 15-59	70.5	2,178	1.1	68.3	72.7

Table C.5 Sampling errors: Viral load suppression by residence and region, ages 15-59 years, LePHIA 2016-2017

Characteristic	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)
			TOTAL		
Residence					
Urban	66.0	1281	1.4	63.2	68.9
Peri-urban	68.7	195	3.1	62.3	75.1
Rural	68.8	1721	1.3	66.1	71.6
Region					
Maseru	64.8	863	1.6	61.4	68.2
Mafeteng	67.6	337	2.5	62.4	72.9
Mohale's Hoek	69.4	279	3.9	61.3	77.6
Leribe	70.8	497	2.0	66.7	74.8
Berea	71.7	379	2.9	65.8	77.6
Quthing	66.4	176	2.8	60.7	72.1
Butha Buthe	68.5	146	3.1	62.1	74.9
Mokhotlong	58.8	185	5.3	47.9	69.8
Qacha's Nek	69.7	125	3.0	63.5	75.9
Thaba Tseka	70.9	210	3.8	63.2	78.6
			MALE		
Residence					
Urban	62.8	379	2.4	57.9	67.6
Peri-urban	68.5	63	4.6	59.0	78.0
Rural	63.2	577	2.1	58.9	67.5

Table C.5 Sampling errors: Viral load suppression by residence and region, ages 15-59 years, LePHIA 2016-2017 (continued)

Characteristic	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)
			MALE (cont.)		
Region					
Maseru	60.8	301	2.6	55.4	66.2
Mafeteng	64.4	101	4.2	55.7	73.1
Mohale's Hoek	61.7	91	6.1	49.2	74.2
Leribe	65.7	153	3.5	58.5	72.9
Berea	71.8	106	5.2	61.2	82.5
Quthing	65.9	50	4.6	56.4	75.4
Butha Buthe	68.8	41	5.5	57.5	80.1
Mokhotlong	49.5	64	7.1	34.9	64.1
Qacha's Nek	58.5	38	5.8	46.6	70.4
Thaba Tseka	67.3	74	5.2	56.5	78.0
			FEMALE		
Residence					
Urban	68.1	902	1.8	64.3	71.9
Peri-urban	68.8	132	4.0	60.5	77.0
Rural	73.0	1144	1.3	70.2	75.7
	0.0	0	0.0	0.0	0.0
Region					
Maseru	68.0	562	2.1	63.6	72.3
Mafeteng	69.6	236	2.9	63.6	75.6
Mohale's Hoek	74.8	188	3.6	67.4	82.2
Leribe	74.1	344	2.9	68.1	80.2
Berea	71.6	273	2.5	66.4	76.9
Quthing	66.7	126	4.2	58.0	75.3
Butha Buthe	68.4	105	3.7	60.7	76.1
Mokhotlong	66.2	121	5.3	55.3	77.1
Qacha's Nek	76.9	87	4.3	68.0	85.7
Thaba Tseka	73.5	136	3.9	65.6	81.4

Table C.6 Sampling errors: ARV-adjusted 90-90-90 by age (conditional percentages), LePHIA 2016-2017

	Diagnosed					On Treatment					Viral Load Suppression				
Age (years)	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)
								TOTAL							
15-24	67.6	330	2.2	62.3	72.8	90.6	227	2.2	86.1	95.2	77.2	208	2.9	71.1	83.2
25-34	73.9	973	1.3	71.0	76.9	88.8	743	1.3	86.2	91.4	83.6	663	1.6	80.3	86.9
35-49	86.3	1344	0.9	84.2	88.4	92.3	1179	0.9	90.4	94.2	89.9	1089	1.0	87.7	92.0
15-49	79.5	2647	0.7	77.9	81.1	90.9	2149	0.7	89.4	92.4	86.5	1960	0.9	84.6	88.4
15-59	81.0	3195	0.6	79.5	82.5	91.8	2638	0.6	90.5	93.1	87.7	2435	0.8	86.1	89.3
								MALE							
15-24	71.3	58	6.3	58.4	84.2	84.1	41	6.8	70.1	98.1	78.3	35	6.4	65.1	91.6
25-34	58.7	258	3.2	52.1	65.3	88.3	149	2.3	83.6	93.1	83.5	132	3.3	76.7	90.2
35-49	82.2	493	1.8	78.5	85.8	91.5	409	1.5	88.4	94.6	88.1	373	1.7	84.5	91.7
15-49	73.5	809	1.4	70.6	76.5	90.2	599	1.2	87.7	92.7	86.3	540	1.6	83.0	89.5
15-59	76.6	1018	1.2	74.0	79.1	91.6	788	1.0	89.5	93.6	87.7	724	1.3	85.0	90.3
								FEMALE							
15-24	66.4	272	3.0	60.2	72.6	92.8	186	2.0	88.8	96.8	76.8	173	3.2	70.1	83.5
25-34	82.5	715	1.5	79.4	85.6	89.0	594	1.4	86.2	91.8	83.6	531	1.8	80.0	87.2
35-49	89.8	851	1.2	87.4	92.3	92.9	770	1.1	90.6	95.1	91.3	716	1.1	89.1	93.5
15-49	83.5	1838	1.0	81.5	85.5	91.3	1550	0.8	89.6	93.1	86.6	1420	1.0	84.6	88.7
15-59	84.0	2177	0.9	82.3	85.8	92.0	1850	0.7	90.4	93.5	87.7	1711	0.9	85.9	89.5

Table C.7 Sampling errors: ARV-adjusted 90-90-90 by age (unconditional percentages), LePHIA 2016-2017

	Diagnosed					On Treatment					Viral Load Suppression				
Age (years)	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)	Weighted estimate (%)	Unweighted number	Standard error (%)	Lower confidence limit (%)	Upper confidence limit (%)
							TOTAL								
15-24	67.6	330	2.6	62.3	72.8	61.2	330	2.9	55.4	67.1	47.3	330	2.8	41.4	53.1
25-34	73.9	973	1.4	71.0	76.9	65.7	973	1.7	62.2	69.1	54.9	973	1.9	51.1	58.7
35-49	86.3	1344	1.0	84.2	88.4	79.6	1344	1.2	77.1	82.1	71.6	1344	1.3	68.8	74.3
15-49	79.5	2647	0.8	77.9	81.1	72.3	2647	1.0	70.3	74.3	62.5	2647	1.1	60.3	64.8
15-59	81.0	3195	0.7	79.5	82.5	74.4	3195	0.9	72.6	76.2	65.2	3195	1.0	63.2	67.2
							MALE								
15-24	71.3	58	6.3	58.4	84.2	60.0	58	8.1	43.2	76.8	47.0	58	8.1	30.3	63.7
25-34	58.7	258	3.2	52.1	65.3	51.8	258	3.2	45.3	58.4	43.3	258	3.2	36.6	49.9
35-49	82.2	493	1.8	78.5	85.8	75.2	493	2.0	71.2	79.2	66.2	493	2.1	61.9	70.6
15-49	73.5	809	1.4	70.6	76.5	66.3	809	1.6	63.1	69.5	57.2	809	1.7	53.7	60.7
15-59	76.6	1018	1.2	74.0	79.1	70.1	1018	1.4	67.3	72.9	61.5	1018	1.5	58.4	64.5
							FEMALE								
15-24	66.4	272	3.0	60.2	72.6	61.6	272	3.0	55.5	67.7	47.3	272	2.9	41.3	53.4
25-34	82.5	715	1.5	79.4	85.6	73.4	715	1.7	69.8	77.0	61.4	715	2.1	57.0	65.8
35-49	89.8	851	1.2	87.4	92.3	83.5	851	1.4	80.6	86.4	76.2	851	1.5	73.2	79.2
15-49	83.5	1838	1.0	81.5	85.5	76.3	1838	1.1	74.0	78.5	66.1	1838	1.2	63.6	68.6
15-59	84.0	2177	0.9	82.3	85.8	77.3	2177	1.0	75.2	79.3	67.8	2177	1.1	65.5	70.1

Table C.8 Sampling errors: Number of new infections annually and number of people living with HIV (ages 15-59 years) LePHIA 2016-2017

	Weighted estimate	Standard error	Lower confidence limit	Upper confidence limit
Number of new infections annually (using the limiting antigen [LAg]/viral load [VL] algorithm)	13,066	2,259	8,405	17,727
Number of new infections annually (using LAg/VL/antiretroviral [ARV] algorithm)	9,835	1,827	6,066	13,605
Number of people living with HIV	305,853	5,101	295,347	316,359

APPENDIX D SURVEY PERSONNEL

Her Majesty Queen
'Masenate Mohato Seeiso

Ministry of Health
Baroane Phenethi
Keletso Ntene Sealiete
Kyaw Thin
Limpho Maile
Mahlape Ramoseme
'Masebeo Koto
Mosilinyane Letsie

Quality Assurence Officers
Monkoe Leqheka
Kolisang Phatšoane

Laboratory Director
Tsietso Motšoane

NRL Lab Managers
David Mothabeng
'Mathabo Mareka

Central Lab supervision
Mamakhetha Phalatse
Kellelo Mapolosi

Lag Avidity Testing
Lula Budiaki
Lilyan Tlapana

Satellite Lab Supervisors
Thuso Mphokoro
Moroesi Masoaka
Posi Napo

ICAP in Lesotho
Koen Frederix
Lavert Remhunga
Lenao Mohapi
Maema Ramaema
Moeketsi Ntoane (RIP)
Moipone Mashale
Molibeli Lethoko
Mphonyane Tuoane
Reaboka Maraisane
Sakhile Sithole
Salome Manyau
Tlotliso Moshoeshoe
Makhate Makhate
Moeti Mphoso
Mamontsi Manyeli
Seema Maleke
Thato Mosaase

CDC Lesotho
Amee Schwitters
Stefania Davia
Yohannes Eshete
Martha Conkling
Andy Pelletier

Bureau of Statistics in Lesotho
'Malehloa Molato
Lehlohonolo Takalimane
Mothoweso Lefosa
Tšiu Litšiba

Ministry of Development Planning
Mpho Mosili

National University Lesotho
Sunny Aiyuk

UNAIDS
Puleng Letsie

EGPAF
Morongoe Masilo

Jhpiego
Nkomile Mpooa

CDC Atlanta
Bharat Parekh
Carin Molchan
Carole Moore
Christine West
Daniel Williams
Drew Voetsch
Hetal Patel
Katina Pappas-Deluca
Katrina Sleeman
Kristin Brown
Laura Porter
Linda Fleming
Melissa Cates
Mervi Dattorio
Nikhil Kothegal
Paul Stupp
Sehin Birhanu
Stephen McCracken
Steven Kinchen
Trudy Dobbs
William Levine
Wolfgang Hladik

ICAP in New York
Andrea Low
Chelsea Solmo
David Hoos
Elizabeth Radin
Hannah Chung
Jessica Justman
Joseph Elias
Katherine Johnson
Kiwon Lee
Larkin Callaghan
Melissa Metz
Nahima Ahmed
Neena Philip
Sally Findley
Stephen Arpadi
Stephen Delgado
Suzue Saito
Theo Smart
Yen Pottinger

ICAP in South Africa

Belete Tegbaru Erkyhun
Blanche Pitt
Bright Phiri
Charles Wentzel
Herbert Longwe
Oliver Murangandi
Pule Mphohle
Takura Kupamupindi
Yvonne Mavengere

Laboratory Team Lesotho

Satellite and Mobile Lab Staff

Bonang Sylvia Ntsielo
Kamohelo Sello
Kekeletso Elliot Mofoka
Lebohang Nteso
Lerato Motseki
Liteboho Letumanyane
Malichaba Catheine Moseli
Mamello Mary-patience Motlomelo
Mojabeng Adelaide Mokoaleli
Moliehi Lerotholi
Mosa Nephtali Lefoka
Nkhala Rose Makhetha
Refuoe Ramoroke
Rethabile Leseeka
Selloane Motaba
Teba David Tšepang
Tefo Ebenezer Libate
Thabiso Azael Matšoha

Central Lab Staff

Lerato Joyce Moteane
Mahlape Khaketla
Moletsane Lincoln Mokokoane

Field Teams

'Mabokang Tšehla
'Machere Seutloali
'Mafusi Boopa
'Mafusi Motlomelo
'Mahopolang Lehata
'Maleaooa Chaole
'Malehloa Mahooana
'Malehlohonolo Kolobe
'Malereko Moffman
'Maleronti Mafisa
'Malesiamo Mathata
'Maletsatsi Lejakane
'Maliakae Lekhula
'Malinkeng Mohale
'Malithlong Seisa
'Mamakoli Senauoane
'Mamatlatse Mochecha
'Mamofelehetsi Moerane
'Mamokoli Sekantši
'Mamosa Semelane
'Mamotšoane Lekhoele
'Mankoe Makakane
'Mankoe Mphokoro
'Mankuebe Nkuebe
'Mantaoleng Kocha
'Mantebete Lerotholi
'Mantila Khaahloe
'Manyalleng Letsie
'Mapalo Mahloane
'Maphoka Qhobela
'Mareentseng Lerotholi
'Maretšepile Ntsau
'Maseabata Machai
'Maseabata Mochochoko
'Masehloho Moahloli
'Masenate Mohale
'Masentle Makhetha
'Mashale Rabeleng
'Matlhalefo Sekhonyana
'Mazwakala Zwakala
'Neuoe Maqache
Arabang Motjolopane
Arabang Nkhabu
Atang Tlopo
Balekile Adontsi
Belice Thato
Bokang Lebatama
Bokang Monare Maloisane
Bonang Mohapi
Bulane Lebohang
Dora Kaaba
Emily Hlalele
Felleng Joele
Fusi Maseru
Hlatsi Thetsane
Hlomisi Maleshoane
Hlomohang Letsie
Kamohelo Maoela
Kananelo Maanela
Kasa Matekane
Katleho Makautse
Katleho Makhaba
Katleho Ramalefane
Kekeletso Mahula
Keneuoe Melato
Ketjane Matseliso
Khahliso Khabo
Khahliso Tšoaeli
Khantši Lineo
Khetheng Tšele
Khoete Relebohile
Khopotso Majara
Khotso Tšenyeletso
Khunyane Mohapi
Leah Masia
Lefalamang Koaleli
Lefulesele Tjellane
Lehana Sehleke
Lehlohonolo Kotseli
Lehlohonolo Matekane
Lehlohonolo Sootho
Lekolantšo Remaketse
Leloko Khoiti
Leloko Lisanyane
Lerata Lerata
Lerato Mote
Lesia Seetsetsa
Letšikhoana Nkeka
Libuseng Marekimane
Lieketseng Pholoana
Likhapa Libete
Limakatso Seboka
Limpho Leche
Limpho Makhele
Limpho Rantsiane
Limpho Sethabathaba
Lindiwe Qhojeng
Lineo Masaile
Linkeng Monkhi
Litšoanelo Makoa Mahloane
Lomile Ramalefane

Field Teams (continued)

Losholopina Motsamai
Mabula Khetheng
Mafika Matlotlo
Mafonase Phakoe
Mahlatsinyane Lesaoana
Mahloli Majara
Mahou Malefane
Maile Phoofolo
Makuili Zwane
Malebane Lesihla
Malebohang Matekane
Malefetsane Masasa
Maleshoane Seutloali
Mamello Khetheng
Masesi Paulina Mngomezulu
Masingoaneng Lekhooana
Matla Lesala
Matobako Makhabane
Meisi Sootho
Metsing Tšehla
Mofoleng Mokopotsa
Mohapi Seemiso
Mohapi Tšolo
Mohlomi Sello
Mokete Ranyali
Mokhantšo Mokhothu
Mokheseng Mpooa
Moleboheng ‘Neko
Moliehi Motsatse
Montšeng Mohasi
Monyane Mohale
Mookho Maabe
Mookho Ntšoeu
Morapeli Kompi
Moroesi Mohlomi
Mosa Thamae
Mothebesoane Thato
Motheo Majoro
Motjoboko Lindiwe
Motlatsi Kose
Motlatsi Rampa
Motloi Moleli
Motsatsi Molapo
Motselisi Tšita
Mpeli Moshoeshoe
Mpho Seephephe
Mphoko Matete
Mphokoletse Makhetha
Mphonyane Mahlako
Mphoroane Malise
Mphunyetsane
Mphunyetsane
Mpinane Malekhokolo
Mpopo Mariti-Kutloano
Mporoane Motloheloa
Mthandazo Magadela
Nana Molise
Ndlobo Leteka
Ndombikayese Moloi
Neo Motsiba
Neoa Phoofolo
Nkemele Nkemele
Nomhle Spelemane
Nomthetho Thafene
Notembiso Matooane
Nteboheleng Molise
Nteboheleng Ramoshabe
Nthabeleng Liphoto
Nthuseng Sehlala
Ntona Maphomene
Ntsejoa Tšukulu
Ntšekhe Mokhesi
Ntšeliseng Nyabela
Ntsoaki Mabohla
Ntsoaki Monyamane
Paballo Khama
Paballo Maphea
Palesa Jasong
Palesa Sello
Paulinah Moreira
Pelaelo Majara
Phole Taole
Poloko Hloele
Poloko Mosito
Puleng Kamele
Puleng Lenkoane
Puleng Likhale
Puseletso Ntomane
Ramorena Pulane
Rapelang Lethoko
Reabetsoe Motloi
Refiloe Keketsi
Refiloe Mohale
Reitumetse Sekorobele
Relebohile Mphole
Relebohile Putsoane
Relebohile Sebusi
Renang Lieta
Rethabile Lebusa
Rethabile Mponye
Rethabile Phomane
Rethabile Ramabolu
Rethusitsoe Mphokoro
Retšelitsoe Polane
Rorisang Mpharoe
Sebili Maoatsa
Selloane Pitso
Seme Tšoepho
Sempe Lerotholi
Senate Mokobocho
Senate Moshoeshoe
Senekane Sehloho
Site Khomo-ea-Majoe Kinela
Tebello Mokonyana
Teboho Maqoabikane
Teboho Mojaki
Teboho Pitso
Tefo ‘Malane
Thabang Damazene
Thabang Mokobocho
Thabelang Raboholo
Thabiso Mochesane
Thabo Makholela
Thabo Mosebekoa
Thapelo Molete
Thato Mosese
Thelisi Lenoesa
Thembile Badela
Thulo Ramalebo
Thuso Makhorole
Thuso Makoko
Tiisetso Sekhonyana
Tipe Seetsi
Tlali Mothobi
Tlalinyane Tapisa
Tokelo Nyelele
Tsebo Lehloa
Tšehla Tšepiso
Tseki Bokang
Tselane Pule
Tselanyane Moeti

Field Teams (continued)
Tšepang Thahanyane
Tšepiso Pule
Tšepo Napo
Tšobotsi Mokatsanyane
Tšolo Thabana
Tumisang Mathafeng

Drivers
Bokang Bernard Motumi
Bulara Ntsalong
Chaka Mahooana
Fokoane Makhakhe
Halejoetsoe Polisa
Hlomelang J Lebona
Kalinyane Ramolibeli
Kantoro C Rampai
Katiso Moleko
Kemelo V Lebesa
Khabane Lepatoa
Khoase Mphuthing
Khutlang Mokone
Kolotsane Ntsapi
Lebohang Makosholo
Lefa Mahlomola
Lehlohonolo Hlongwane
Lekhotla Matela
Letsika Maofane
Lisema Moahloli
Machabe Matsau
Maethola Mapepesa
Maisa Maope
Malefane Stephen Wall
Malefetsane Baji
Maranzo Mavumengwane
Masupha D Nena
Matona Rantekoa
Mohale Mohale
Mohlomi Ramakatsa
Mojari John Kojoana
Mokhele Mokhele
Mokhoele Mahao
Molahlehi C Tlali
Mopeli S Ramakhula
Morero Mahooana
Mosoeu Mabote
Mosoeunyane Thapelo
Motaba Ndlela
Motebang Ramokoatsi
Motlalepula Phuthehang
Motsomi Makhalanyane
Mphafi Lebina
Neo Ntsau
Njabulo Moshabesha
Pitso E Mothobi
Pule Mosunkuthu
Qobete Mopeli
Ramajake Leoli
Reitumetse Liefo
Seetsi Kabi
Sekaleli Koloko
Seleso Lephosa
Sello Lempe
Seutloali Seitlheko
Tekano Kolobe
Thabang Molelle
Thabelo Mohapi
Thabiso Makhetha
Thato Adoro
Theko Raphael Molapo
Thoola Tseko
Tšepo Letsika Matela
Tšepo Makepe
Tumisang Rantlo
Tumo Motšoene

Final Report Workshop Contributors
Amee Schwitters
Andrea Low
Felix Ndagije
Keletso Ntene Sealiete
Koen Frederix
Kyaw Thin
Limpho Maile
Martha Conkling
Nahima Ahmed
Refiloe Mpholo
Stephen McCracken

APPENDIX E HOUSEHOLD QUESTIONNAIRE

ENGLISH

CONFIDENTIAL

MINISTRY OF HEALTH
LESOTHO POPULATION-BASED HIV IMPACT ASSESSMENT (LePHIA 2016-2017)
HOUSEHOLD QUESTIONNAIRE

TICK IF HOUSEHOLD SELECTED FOR CHILDREN'S SURVEY ☐

HOUSEHOLD IDENTIFICATION

[THIS PAGE AUTOPOPULATED WITH HOUSEHOLD LISTING INFORMATION]

DISTRICT NAME: _____ DISTRICT CODE ☐☐

ZONE NAME: _____ ZONE CODE ☐☐

WARD NAME: _____ WARD NUMBER ☐☐

CONSTITUENCY NAME: _____ HH NUMBER ☐☐

NAME OF HOUSEHOLD HEAD: _____

TOTAL PERSONS IN HOUSEHOLD	TOTAL ELIGIBLE WOMEN:	TOTAL ELIGIBLE MEN:	TOTAL ELIGIBLE CHILDREN:	LINE NO. OF RESPONDENT TO HOUSEHOLD QUESTIONNAIRE
☐☐	☐☐	☐☐	☐☐	☐☐

LANGUAGE OF INTERVIEW: ☐☐

NATIVE LANGUAGE OF RESPONDENT: ☐☐

TRANSLATOR USED? (Y/N) ☐

LANGUAGE CODES:
(01) ENGLISH
(02) SESOTHO

SUPERVISOR: _____ SUPERVISOR CODE: ☐☐☐☐ OFFICE EDITOR: ☐☐ KEYED BY: ☐☐

DATE OF COMPLETING QUESTIONNAIRE: _____

* RESULTS CODES:

(1) COMPLETED
(2) NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT
(3) ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME
(4) POSTPONED
(5) REFUSED
(6) DWELLING VACANT OR ADDRESS NOT A DWELLING
(7) DWELLING DESTROYED
(8) DWELLING NOT FOUND
(9) PARTLY COMPLETED
(96) OTHER (SPECIFY)

START TIME			
START	Record the start time. USE 24-HOUR TIME.	HOUR:	☐☐
	IF START TIME IS 3:12 PM, RECORD 15 HOURS, 12 MINUTES, NOT 03 HOURS, 12 MINUTES.	MINUTES:	☐☐

HOUSEHOLD SCHEDULE

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	
	Please give me the names of the persons who usually lives in your household or guests of the household who stayed here last night, starting with the head of the household. AFTER LISTING THE NAME AND RECORDING THE RELATIONSHIP AND SEX FOR EACH PERSON ASK QUESTIONS 2A-2C BELOW TO BE SURE THAT THE SCHEDULE IS COMPLETE.	What is the relationship of (**NAME**) to the head of the household? SEE CODES BELOW	Is (**NAME**) Male or Female?	Does (**NAME**) usually live here?	Did (**NAME**) sleep here last night?	How old is (**NAME**)?	IF LESS THAN 2 YEARS, RECORD IN MONTHS. Is age of (**NAME**) recorded in MONTHS/ YEARS?
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1		☐☐	M F	Y N	Y N	☐☐	MONTHS ☐ YEARS ☐
2		☐☐	M F	Y N	Y N	☐☐	MONTHS ☐ YEARS ☐
3		☐☐	M F	Y N	Y N	☐☐	MONTHS ☐ YEARS ☐
4		☐☐	M F	Y N	Y N	☐☐	MONTHS ☐ YEARS ☐
5		☐☐	M F	Y N	Y N	☐☐	MONTHS ☐ YEARS ☐
6		☐☐	M F	Y N	Y N	☐☐	MONTHS ☐ YEARS ☐
7		☐☐	M F	Y N	Y N	☐☐	MONTHS ☐ YEARS ☐
8		☐☐	M F	Y N	Y N	☐☐	MONTHS ☐ YEARS ☐

9	☐☐	M	F	Y	N	Y	N	☐☐	MONTHS	☐
									YEARS	☐
10	☐☐	M	F	Y	N	Y	N	☐☐	MONTHS	☐
									YEARS	☐

☐ TICK HERE IF CONTINUATION SHEET USED

2A) Just to make sure I have a complete listing, are there any other persons such as small children or infants that we have not listed? YES ☐ NO ☐

2B) Are there any other people who may not be members of your household such as domestic servants, lodgers, of friends who usually live here? YES ☐ NO ☐

2C) Are there any guests or temporary visitors staying here, or anyone else who stayed here last night who we have not seen? YES ☐ NO ☐

ADD TO SCHEDULE

CODES FOR COLUMN 3: RELATIONSHIP TO HOUSEHOLD HEAD

01 = HEAD
02 = WIFE/HUSBAND/PARTNER
03 = SON OR DAUGHTER
04 = SON-IN-LAW/ DAUGHTER-IN-LAW
05 = GRANDCHILD
06 = PARENT
07 = PARENT-IN-LAW
08 = BROTHER/SISTER
09 = CO-WIFE
10 = OTHER RELATIVE
11 = ADOPTED/ FOSTER/STEPCHILD
12 = NOT RELATED
98 = DON'T KNOW

HOUSEHOLD SCHEDULE

LINE NO.	IF (NAME) IS **0-17 YEARS** EMANC STATUS	ORPHAN STATUS/PARENT OR GUARDIAN		IF (NAME) IS 0-14 YEARS					
	Is (**NAME**) emancipated? [INSERT DEFINITION OF EMANCIPATED MINOR]	Is (**NAME**)'s natural mother alive?	Does (**NAME**)'s natural mother usually live in this household or was a guest last night? IF YES: RECORD MOTHER'S LINE NUMBER. IF NO: RECORD **FEMALE** GUARDIAN'S LINE NUMBER OR '00' IF FEMALE PARENT OR GUARDIAN NOT PRESENT IN HH.	Is (**NAME**)'s natural father alive?	Does (**NAME**)'s natural father usually live in this household or was a guest last night? IF YES: RECORD FATHER'S LINE NUMBER. IF NO: SKIP TO QUESTION 14.	Does (NAME*) have a male guardian who usually lives in this household or was a guest last night? IF YES: RECORD MALE GUARDIAN'S LINE NUMBER. IF NO: Skip to question 17.	RECORD LINE NUMBER OF PARENT/GUARDIAN WHO WILL FILL OUT CHILDREN'S MODULE FOR **(NAME)**	You said that (NAME*) does not have a parent or guardian living in the household. Is this correct?	DO NOT READ: IS (**NAME**) ELIGIBLE FOR SURVEY?
(1)	(9)	(10)	(11)	(12)	(13)	(14)	(16)	(17)	(18)
1	Y N DK	Y N DK → 12	☐☐	Y N DK → 16	☐☐	☐☐	Y N	Y N	Y N
2	Y N DK	Y N DK → 12	☐☐	Y N DK → 16	☐☐	☐☐	Y N	Y N	Y N
3	Y N DK	Y N DK → 12	☐☐	Y N DK → 16	☐☐	☐☐	Y N	Y N	Y N

4	Y N DK	Y N DK → 12		Y N DK → 16			Y N	Y N	Y N	
5	Y N DK	Y N DK → 12		Y N DK → 16			Y N	Y N	Y N	
6	Y N DK	Y N DK → 12		Y N DK → 16			Y N	Y N	Y N	
7	Y N DK	Y N DK → 12		Y N DK → 16			Y N	Y N	Y N	
8	Y N DK	Y N DK → 12		Y N DK → 16			Y N	Y N	Y N	
9	Y N DK	Y N DK → 12		Y N DK → 16			Y N	Y N	Y N	
10	Y N DK	Y N DK → 12		Y N DK → 16			Y N	Y N	Y N	

TOTAL ELIGIBLE MEN (ADULTS 15+ YEARS AND EMANCIPATED MINORS)	
TOTAL ELIGIBLE WOMEN (ADULTS 15+ YEARS AND EMANCIPATED MINORS)	
TOTAL ELIGIBLE CHILDREN (10 TO 14 YEARS)	
TOTAL ELIGIBLE CHILDREN (0 MONTHS TO 9 YEARS)	

HOUSEHOLD SCHEDULE

LINE NO.	IF (**NAME**) is 18+ SICK PERSON	IF (**NAME**) is 0-17 years SICKNESS AND RESIDENCE OF BIOLOGICAL PARENTS				**MOTHER DEAD OR SICK**	**FATHER DEAD OR SICK**
	CHECK COLUMNS 7 AND 8, IF UNDER 18 → 17	CHECK COLUMN 10, IF COLUMN 10 'N' OR 'DK' → 21		CHECK COLUMN 12, IF COLUMN 12 'N' OR 'DK' → 23			
	IF 18 YEARS OR MORE: Has (**NAME**) been very sick for at least 3 months during the past 12 months, that is (**NAME**) was too sick to work or do normal activities?	IF COLUMN 10 'Y': Has (**NAME**)'s natural mother been very sick for at least 3 months during the past 12 months, that is she was too sick to work or do normal activities?	IF MOTHER SICK: Does (**NAME**)'s natural mother have HIV/AIDS?*	IF COLUMN 12 'Y': Has (**NAME**)'s natural father been very sick for at least 3 months during the past 12 months, that is he was too sick to work or do normal activities?	IF FATHER SICK: Does (**NAME**)'s natural father have HIV/AIDS?*	IF CHILD'S NATURAL MOTHER HAS DIED (COLUMN 10 'N') OR BEEN SICK (COLUMN 18 'Y'), SELECT Y.	IF CHILD'S NATURAL FATHER HAS DIED (COLUMN 12'N') OR BEEN SICK (COLUMN 20 'Y'), SELECT Y.
(1)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
1	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N
2	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N
3	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N
4	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N
5	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N
6	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N
7	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N
8	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N
9	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N
10	Y N DK	Y N DK → 22	Y N DK	Y N DK → 24	Y N DK	Y N	Y N

HOUSEHOLD SCHEDULE

Thank you for completing the questions regarding the Household members who are 0-17 years old. The next step will be to answer some additional questions regarding the men who live in the household.

LINE NO.	SPOUSES AND CO-HABITATING PARTNERS							
	Does (**NAME**) have a spouse or co-habitating partner who usually lives in the household or was a guest last night?	How many spouses or co-habitating partners (those who usually live in the household or stayed here last night) does (**NAME**) have?	Record the LINE NUMBER (**NAME**)'s of spouse or partner. If no spouse or partner leave blank.	Record the LINE NUMBER (**NAME**)'s of spouse or partner. If no spouse or partner leave blank.	Record the LINE NUMBER (**NAME**)'s of spouse or partner. If no spouse or partner leave blank.	Record the LINE NUMBER (**NAME**)'s of spouse or partner. If no spouse or partner leave blank.	Record the LINE NUMBER (**NAME**)'s of spouse or partner. If no spouse or partner leave blank.	Record the LINE NUMBER (**NAME**)'s of spouse or partner. If no spouse or partner leave blank.
(1)	(26)	(27)	(28a)	(28b)	(28c)	(28d)	(28e)	(28f)
1	Y N DK							
2	Y N DK							
3	Y N DK							
4	Y N DK							
5	Y N DK							
6	Y N DK							
7	Y N DK							
8	Y N DK							
9	Y N DK							
10	Y N DK							

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
	HOUSEHOLD CHARACTERISTICS		
	➢ **INTERVIEWER SAYS: "Thank you for completing the questions for the household's women. The next step will be to complete some additional questions regarding the household itself. Now I would like to ask you more questions about your household."**		
201	What is the <u>main</u> source of drinking water for members of your household?	**PIPED WATER** PIPED INTO DWELLING……11 PIPED TO YARD/PLOT……12 PUBLIC TAP/STANDPIPE……13 TUBE WELL OR BOREHOLE……21 **DUG WELL** PROTECTED WELL……31 UNPROTECTED WELL……32 **WATER FROM SPRING** PROTECTED SPRING……41 UNPROTECTED SPRING……42 RAINWATER……51 TANKER TRUCK……61 CART WITH SMALL TANK……71 SURFACE WATER (RIVER / DAM / LAKE/ POND / STREAM/CANAL)……81 BOTTLED WATER……91 OTHER……96 _____ (SPECIFY)	
202	Do you do anything to the water to make it safer to drink?	YES……1 NO……2 DON'T KNOW……8	NO, DK→204
203	What do you do to make your water safe for drinking?	BOILING……1 FILTRATION (CHARCOAL FILTER……2 SEDIMENTATION……3 DISINFECTION (WATERGUARD, CHLORINE)……4 USE BOTTLED WATER……5 OTHER……96 _____ (SPECIFY)	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
	HOUSEHOLD CHARACTERISTICS (continued)		
204	What kind of toilet facility do members of your household usually use?	FLUSH OR POUR FLUSH TOILET.....11 TRADITIONAL PIT LATRINE.....21 VENTILATED IMPROVED PIT LATRINE (VIP).....22 NO FACILITY/BUSH/FIELD.....61 OTHER.....96 _____ (SPECIFY)	NO FACILITY, OTHER → 207
205	Do you share this toilet facility with other households?	YES.....1 NO.....2	NO→207
206	How many households use this toilet facility?	NO. OF HOUSEHOLD IF LESS THAN 10 _____ 10 OR MORE HOUSEHOLDS .....96 DON'T KNOW 98	
PREFACE BEFORE QUESTIONS 207-214: Does your household have:			
207	Electricity?	YES.....1 NO.....2	
208	A radio?	YES.....1 NO.....2	
209	A television?	YES.....1 NO.....2	
210	A telephone/mobile telephone	YES.....1 NO.....2	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
	HOUSEHOLD CHARACTERISTICS (continued)		
211	A refrigerator	YES.....1 NO.....2	
212	Battery/Generator?	YES.....1 NO.....2	
213	A computer?	YES.....1 NO.....2	
214	Internet access?	YES.....1 NO.....2	
215	What type of fuel does your household mainly use for cooking?	ELECTRICITY.....1 LPG / NATURAL GAS.....2 BIOGAS.....3 PARAFFIN / KEROSENE.....4 COAL, LIGNITE.....5 CHARCOAL FROM WOOD.....6 FIREWOOD / STRAW.....7 DUNG.....8 NO FOOD COOKED IN HOUSEHOLD.....95 OTHER.....96 _____ (SPECIFY)	
216	MAIN MATERIAL OF FLOOR RECORD OBSERVATION.	**NATURAL FLOOR** EARTH / SAND.....11 DUNG.....12 **RUDIMENTARY FLOOR** WOOD PLANKS.....21 ...PALM / BAMBOO.....22 **FINISHED FLOOR** PARQUET OR POLISHED WOOD.....31 VINYL OR ASPHALT STRIP.....32 CERAMIC TILES.....33 CEMENT/TERAZO.....34 CARPET.....35 OTHER.....96 _____ (SPECIFY)	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
	HOUSEHOLD CHARACTERISTICS (continued)		
217	MAIN MATERIAL OF THE ROOF RECORD OBSERVATION.	**NATURAL ROOFING** NO ROOF.....11 THATCH/PALM LEAF (MAKUTI).....12 DUNG / MUD.....13 **RUDIMENTARY ROOFING** CORRUGATED IRON (MABATI).....21 TIN CANS.....22 **FINISHED ROOFING** ASBESTOS SHEET.....31 CONCRETE.....32 TILES.....33 OTHER.....96 _____ (SPECIFY)	
218	MAIN MATERIAL OF THE EXTERIOR WALLS RECORD OBSERVATION.	**NATURAL WALLS** NO WALLS.....11 CANE/PALM/TRUNKS.....12 DUNG / MUD.....13 **RUDIMENTARY WALLS** BAMBOO WITH MUD.....21 STONE WITH MUD.....22 PLYWOOD/CARDBOARD.....23 CARTON.....24 REUSED WOOD.....25 **FINISHED WALLS** CEMENT.....31 STONE WITH LIME/CEMENT.....32 BRICKS.....33 CEMENT BLOCKS.....34 WOOD PLANKS/SHINGLES.....35 OTHER.....96 _____ (SPECIFY)	
219	How many rooms are used for sleeping?	NUMBER OF ROOMS: ☐☐	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
	HOUSEHOLD CHARACTERISTICS (continued)		
	PREFACE BEFORE QUESTIONS 220-223: Does any member of your household own:		
220	A bicycle?	YES.....1 NO.....2	
221	A motorcycle or motor scooter?	YES.....1 NO.....2	
222	A car or truck?	YES.....1 NO.....2	
223	Scotch cart?	YES.....1 NO.....2	
	PREFACE BEFORE QUESTIONS 219-223: Does any member of your household own:		
224	Does any member of your household own any agricultural land?	YES.....1 NO.....2	
225	Does your family own any livestock, herds, other farm animals, or poultry?	YES.....1 NO.....2	IF NO → skip these questions
226	How many cows does your family own?	##	
227	Goats?	##	
228	Sheep?	##	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
	HOUSEHOLD CHARACTERISTICS (continued)		
229	Poultry (e.g., ducks, chickens)?	##	
230	Pigs?	##	
231	Horses?	##	
232	Donkeys?	##	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
	FOOD SECURITY		
233*	In the past 4 weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	YES……1 NO……2 DON'T KNOW……8	NO, DK→235
234*	How often did this happen in the past 4 weeks?	RARELY (1-2 TIMES)……1 SOMETIMES (3-10 TIMES)……2 OFTEN (MORE THAN 10 TIMES)……3	
235*	In the past 4 weeks, did you or any household member go to sleep at night hungry because there was not enough food?	YES……1 NO……2 DON'T KNOW……8	NO, DK→237
236*	How often did this happen in the past 4 weeks?	RARELY (1-2 TIMES)……1 SOMETIMES (3-10 TIMES)……2 OFTEN (MORE THAN 10 TIMES)……3	
237*	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	YES……1 NO……2 DON'T KNOW……8	NO, DK→301
238*	How often did this happen in the past 4 weeks?	RARELY (1-2 TIMES)……1 SOMETIMES (3-10 TIMES)……2 OFTEN (MORE THAN 10 TIMES)……3	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
	ECONOMIC SUPPORT		
Now I will ask you questions on economic support you have received.			
301	Has your household received any of the following forms of external economic support in the last 12 months? SELECT ALL THAT APPLY.	NOTHING……A CASH TRANSFER (E.G. PENSIONS, DISABILITY GRANTS, CHILD GRANT)……..B ASSISTANCE FOR SCHOOL FEES……..C MATERIAL SUPPORT FOR EDUCATION (E.G. UNIFORMS, SCHOOL BOOKS, EDUCATION, TUITION SUPPORT, BURSARIES)……..D INCOME GENERATION SUPPORT IN CASH OR KIND (E.G. AGRICULTURAL INPUTS)….E FOOD ASSISTANCE PROVIDED AT THE HOUSEHOLD OR EXTERNAL INSTITUTION……..F MATERIAL OR FINANCIAL SUPPORT FOR SHELTER……..G SOCIAL PENSION……..H REMITTANCES……..I OTHER……..X _____ (SPECIFY) DON'T KNOW ……..Y REFUSED……Z	NOTHING, DON'T KNOW→END OF SECTION
302	Has your household received any of the following forms of external economic support in the last 3 months? SELECT ALL THAT APPLY.	NOTHING……..A CASH TRANSFER (E.G. PENSIONS, DISABILITY GRANTS, CHILD GRANT) …….B ASSISTANCE FOR SCHOOL FEES……..C MATERIAL SUPPORT FOR EDUCATION (E.G. UNIFORMS, SCHOOL BOOKS, EDUCATION, TUITION SUPPORT, BURSARIES)……..D INCOME GENERATION SUPPORT IN CASH OR KIND (E.G. AGRICULTURAL INPUTS)..E FOOD ASSISTANCE PROVIDED AT THE HOUSEHOLD OR EXTERNAL INSTITUTION……..F MATERIAL OR FINANCIAL SUPPORT FOR SHELTER……..G SOCIAL PENSION……..H REMITTANCES……..I OTHER……..X _____ (SPECIFY) DON'T KNOW ……..Y REFUSED……..Z	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
	MOBILITY AND MIGRATION		
	Now I will ask you questions about individuals who are part of your household, but may not be living with you right now.		
401	Are there any members of your household who are not in the country right now because of work?	YES.....1 NO.....2 DON'T KNOW .....-8	YES → 402 NO, DON'T KNOW→END OF SECTION

HOUSEHOLD SCHEDULE – MIGRATION AND MOBILITY

IF (NAME) IS USUAL MEMBER BUT DID NOT SLEEP IN HOUSEHOLD AND IS 18 YEARS OR OLDER

LINE NUMBER AND NAME	When was the last time (**NAME**) slept the night in the household?	**IF < 30 DAYS: ASK** When do you expect (**NAME**) to return? **IF 401 plus 402 < 30 DAYS, skip TO 405. If >30 days 403-404:**	Is **(NAME)** in another district or country	Which district or country is **(NAME)** in currently? BUTHA-BUTHE=01 LERIBE=02 BEREA=03 MASERU=04 MAFETENG=05 MOHALE'S HOEK=06 QUTHING=07 QACHA'S NEK=08 MOKHOTLONG=09 THABA-TSEKA=10 SOUTH AFRICA=11 SWAZILAND = 12 MOZAMBIQUE = 13 NAMIBIA = 14 BOTSWANA = 15 ZIMBABWE = 16 OTHER = 96	What is **(NAME's)** primary activity while away? NONE= 0 AGRICULTURE=1 FISHING= 2 MINING/QUARRYING= 3 MANUFACTURING/PROCESSING= 4 ELECTRICITY= 5 CONSTRUCTION= 6 WHOLESALE & RETAIL, REPAIR OF MOTOR VEHICLES & PERSONAL & HOUSEHOLD GOODS= 7 HOTELS & RESTAURANTS= 8 TRANSPORT, STORAGE, & COMMUNICATION= 9 FINANCIAL INTERMEDIATION= 10 REAL ESTATE, RENDING & BUSSINESS ACTIVITIES= 11 PUBLIC ADMIN, DEFENCE, COMP. SOCIAL SERVICE= 12 EDUCATION= 13 HEALTH & SOCIAL WORK= 14 OTHER COMMUNITY, SOCIAL & PERS. SERVICES= 15 PRIVATE HOUSEHOLD= 16 EXTRA TERRITORIAL ORGANISATIONS BODIES= 17 OTHER (SPECIFY)= 96 DON'T KNOW= -8 REFUSED= -9
(1)	(401)	(402)	(403)	(404)	(405)
— _____ Name	DAYS ☐ WEEKS ☐ MONTHS ☐	DAYS ☐ WEEKS ☐ MONTHS ☐	Y N DK → Next Line	☐☐	☐☐
— _____ Name	DAYS ☐ WEEKS ☐ MONTHS ☐	DAYS ☐ WEEKS ☐ MONTHS ☐	Y N DK → Next Line	☐☐	☐☐
— _____ Name	DAYS ☐ WEEKS ☐ MONTHS ☐	DAYS ☐ WEEKS ☐ MONTHS ☐	Y N DK → Next Line	☐☐	☐☐
— _____ Name	DAYS ☐ WEEKS ☐ MONTHS ☐	DAYS ☐ WEEKS ☐ MONTHS ☐	Y N DK → Next Line	☐☐	☐☐

LINE NO.	HOUSEHOLD MEMBERS WHO LIVE ABROAD (OUTSIDE LESOTHO)	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	LENGTH OF TIME AWAY	PLACE / COUNTRY	PRIMARY ACTIVITY
	Please give me the names of the any other persons (not noted above) who have lived with you (as household members) during the past 3 years who currently live outside the country.	What is the relationship of (**NAME**) to the head of the household? SEE CODES BELOW	Is (**NAME**) Male or Female?	How long has he/she been away? (MONTHS)	Where (What country) does **(NAME)** live?	What is **(NAME's)** primary activity while away?
(406)	(407)	(408)	(409)	(410)	(411)	(412)
1			M F			
2			M F			
3			M F			
4			M F			

CODES FOR COLUMN 3: RELATIONSHIP TO HOUSEHOLD HEAD

01 = HEAD
02 = WIFE/HUSBAND/PARTNER
03 = SON OR DAUGHTER
ADOPTED/FOSTER/STEPCHILD
04 = SON/DAUGHTER-IN-LAW
05 = GRANDCHILD
06 = PARENT
07 = PARENT-IN-LAW
08 = BROTHER/SISTER
09 = CO-WIFE
10 = OTHER RELATIVE
11 =
12 = NOT RELATED
-8 = DON'T KNOW

SOUTH AFRICA=11
SWAZILAND = 12
MOZAMBIQUE = 13
NAMIBIA = 14
BOTSWANA = 15
ZIMBABWE = 16
OTHER = 96

NONE= 0
AGRICULTURE= 1
FISHING= 2
MINING/QUARRYING= 3
MANUFACTURING/PROCESSING= 4
ELECTRICITY= 5
CONSTRUCTION= 6
WHOLESALE & RETAIL, REPAIR OF MOTOR VEHICLES & PERSONAL & HOUSEHOLD GOODS= 7
HOTELS & RESTAURANTS= 8
TRANSPORT, STORAGE, & COMMUNICATION= 9
FINANCIAL INTERMEDIATION= 10
REAL ESTATE, RENDING & BUSSINESS ACTIVITIES= 11
PUBLIC ADMIN, DEFENCE, COMP. SOCIAL SERVICE= 12
EDUCATION= 13
HEALTH & SOCIAL WORK= 14
OTHER COMMUNITY, SOCIAL & PERS. SERVICES= 15
PRIVATE HOUSEHOLD= 16
EXTRA TERRITORIAL ORGANISATIONS BODIES= 17
OTHER (SPECIFY)= 96
DON'T KNOW= -8
REFUSED= -9

END OF HOUSEHOLD INTERVIEW

- **INTERVIEWER SAY: "This is the end of the household survey. Thank you very much for your time and for your responses. Do you have any questions for me at this time?"**

	END TIME	
END	Record the end time. USE 24 HOUR TIME. IF START TIME IS 3:12 PM, RECORD 15 HOURS, 12 MINUTES, NOT 03 HOURS, 12 MINUTES.	HOUR: ☐☐ MINUTES: ☐☐

INTERVIEWER OBSERVATIONS:
TO BE COMPLETED AFTER THE INTERVIEW:

COMMENTS ABOUT RESPONDENT:

_____

_____

_____

COMMENTS ABOUT SPECIFIC QUESTIONS:

_____

_____

_____

ITEMS FOR THE ATTENTION OF THE SUPERVISOR:

_____

_____

_____

GENERAL QUESTIONS:

_____

_____

_____

APPENDIX F ADULT QUESTIONNAIRE

NO	QUESTIONS	CODING CATEGORIES	SKIPS
MODULE 1: RESPONDENT BACKGROUND			
Interviewer says: "Thank you for agreeing to participate in this survey. The first set of questions is about your life in general. Afterwards, we will move on to other topics."			
L1	DO NOT READ: LANGUAGE OF QUESTIONNAIRE	SESOTHO = 1 ENGLISH = 2	
L2	DO NOT READ: LANGUAGE OF INTERVIEW	SESOTHO = 1 ENGLISH = 2 OTHER = 96 SPECIFY: _____	
L3	DO NOT READ: NATIVE LANGUAGE OF PARTICIPANT	SESOTHO = 1 ENGLISH = 2 OTHER = 96 SPECIFY: _____	
L4	DO NOT READ: TRANSLATION USED	YES = 1 NO = 2	
101	DO NOT READ: IS THE RESPONDENT MALE OR FEMALE?	MALE = 1 FEMALE = 2	
102	What is your religion?	ROMAN CATHOLIC = 1 LESOTHO EVANGELICAL = 2 ANGLICAN = 3 PENTECOSTAL = 4 OTHER CHRISTIAN = 5 OTHER RELIGION = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	
103	Have you ever attended school?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED →113
104	What is the highest level of school you attended: primary, secondary, or higher?	PRIMARY = 1 VOCATIONAL/TECHNICAL TRAINING AFTER PRIMARY = 2 SECONDARY/HIGH = 3 VOCATIONAL/TECHNICAL TRAINING AFTER SECONDARY/HIGH = 4 COLLEGE/UNIVERSITY = 5 GRADUATE/POST GRADUATE = 6 DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
105	What is the highest [standard/form/year] you completed at that level? (IF ATTENDING FORM 1 OF SECONDARY SCHOOL AND HAS/DID NOT COMPLETE THE SCHOOL YEAR, ENTER "0")	STANDARD/FORM/YEAR _____ DON'T KNOW = -8 REFUSED = -9	
	FOLLOWING QUESTIONS ON SCHOOLING ARE FOR ADOLESCENT/YOUNG ADULTS AGES 15-18		IF > 18, GO TO 113
106	Are you enrolled in school?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	DK, REFUSED → 113
107	What grade/form/year are you in now?	STANDARD/FORM/YEAR _____ DON'T KNOW = -8 REFUSED = -9	
108	During the last school week, did you miss any school days for any reason?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 107
109	Why did you miss school?	I HAVE BEEN SICK = 1 I DON'T FEEL SAFE TRAVELING TO SCHOOL = 2 I DON'T FEEL SAFE WHILE IN SCHOOL = 3 I DON'T LIKE SCHOOL = 4 I HAVE TO LOOK AFTER MY FAMILY = 5 THERE'S NOT ENOUGH MONEY TO SEND ME TO SCHOOL = 6 SCHOOL IS TOO FAR AWAY = 7 I HAVE TO WORK = 8 I HAVE A CHILD OR I AM PREGNANT (GIRLS ONLY) = 9 I MISSED TOO MUCH SCHOOL BECAUSE OF MY PERIOD (MENSTRUATION) (GIRLS ONLY) = 10 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	
110	What grade/form/year were you in last year?	STANDARD/FORM/YEAR _____ DON'T KNOW = -8 REFUSED = -9	ALL → 113

111	Why do you NOT go to school?	I HAVE BEEN SICK = 1 I DON'T FEEL SAFE TRAVELING TO SCHOOL = 2 I DON'T FEEL SAFE WHILE IN SCHOOL = 3 I DON'T LIKE SCHOOL = 4 I HAVE TO LOOK AFTER MY FAMILY = 5 THERE'S NOT ENOUGH MONEY TO SEND ME TO SCHOOL = 6 SCHOOL IS TOO FAR AWAY = 7 I HAVE TO WORK = 8 I HAVE A CHILD OR I AM PREGNANT (GIRLS ONLY) = 9 I MISSED TOO MUCH SCHOOL BECAUSE OF MY PERIOD (MENSTRUATION) (GIRLS ONLY) = 10 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	
112	When was the last time you regularly attended school? Would you say it was less than a year ago or more than a year ago?	LESS THAN 1 YEAR = 1 1 YEAR OR LONGER = 2 DON'T KNOW = -8 REFUSED = -9	
113	Have you done any work in the last 12 months for which you received cash or goods as payment?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → SKIP TO END OF MODULE
114	Have you done any work in the last seven days for which you received cash or goods as payment?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
115	What is your main product/service/activity of your place of work?	AGRICULTURE = 1 FISHING = 2 MINING/QUARRYING = 3 MANUFACTURING/PROCESSING = 4 ELECTRICITY = 5 CONSTRUCTION = 6 WHOLESALE & RETAIL, REPAIR OF MOTOR VEHICLES & PERSONAL & HOUSEHOLD GOODS = 7 HOTELS & RESTAURANTS = 8 TRANSPORT, STORAGE, & COMMUNICATION = 9 FINANCIAL INTERMEDIATION = 10 REAL ESTATE, RENDING & BUSINESS ACTIVITIES = 11 PUBLIC ADMIN, DEFENCE, COMP. SOCIAL SERVICE = 12 EDUCATION = 13 HEALTH & SOCIAL WORK = 14 OTHER COMMUNITY, SOCIAL & PERS. SERVICES = 15 PRIVATE HOUSEHOLD = 16 EXTRA TERRITORIAL ORGANISATIONS BODIES = 17 OTHER = 96 SPECIFY = _____ DON'T KNOW = -8 REFUSED = -9	

MODULE 2: MOBILITY/MIGRATION			
Interviewer says: "Now I would like to ask you questions about where you have lived."			
201	How long have you lived in Lesotho? ONLY ONE OPTION MAY BE SELECTED. FOR EXAMPLE, ANSWER ONLY IN MONTHS OR IN YEARS. CODE '0' IN MONTHS IF LESS THAN 1 MONTH.	MONTHS _____ YEARS _____ MY ENTIRE LIFE/BORN HERE= 96 DON'T KNOW = -8 REFUSED=-9	ENTIRE LIFE/BORN HERE/DK/REF → OUTSIDE
202	What was your main reason for moving to Lesotho?	TO JOIN FAMILY= 1 FOR MARRIAGE = 2 TO FIND WORK = 3 TO GO TO SCHOOL = 4 TO ESCAPE INSECURITY/CONFLICT = 5 TO ESCAPE DROUGHT, FLOOD, ETC= 6 TO ESCAPE VIOLENCE IN HOUSEHOLD = 7 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
203	Have you ever lived outside Lesotho?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DK, REFUSED → END OF MODULE
204	How old were you the first time you lived outside Lesotho?	AGE IN YEARS ___ ___ DON'T KNOW = -8 REFUSED = -9	
205	How many times in your life have you ever lived outside of Lesotho?	NUMBER OF TIMES _____ DON'T KNOW = -8 REFUSED = -9	
206	What was the longest period of time you spent living outside Lesotho since you were 18 years old?	WEEKS __ __ MONTHS __ __ YEARS __ __ DON'T KNOW = -8 REFUSED = -9	
207	In the last 12 months, have you been away from home for more than one month at a time?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → END OF MODULE
208	For what reason were you away from home for longer than one month?	WORK = 1 SCHOOL = 2 FAMILY OBLIGATIONS = 3 MEDICAL CARE = 4 TRAVEL = 5 OTHER = 6 SPECIFY = _____ DON'T KNOW = -8 REFUSED = -9	
209	In what country/countries did you spend more than one month living in during the past year?	SOUTH AFRICA = A SWAZILAND = B MOZAMBIQUE = C NAMIBIA = D BOTSWANA = E ZIMBABWE = F OTHER = G SPECIFY = _____ DON'T KNOW = Y REFUSED = Z	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
210	What was your main product/service/activity of your place of work the last time you lived outside of Lesotho?	DID NOT WORK = 0 AGRICULTURE = 1 FISHING = 2 MINING/QUARRYING = 3 MANUFACTURING/PROCESSING = 4 ELECTRICITY = 5 CONSTRUCTION = 6 WHOLESALE & RETAIL, REPAIR OF MOTOR VEHICLES & PERSONAL & HOUSEHOLD GOODS = 7 HOTELS & RESTAURANTS = 8 TRANSPORT, STORAGE, & COMMUNICATION = 9 FINANCIAL INTERMEDIATION = 10 REAL ESTATE, RENDING & BUSS. ACTIVITIES = 11 PUBLIC ADMIN, DEFENCE, COMP. SOCIAL SERVICE = 12 EDUCATION = 13 HEALTH & SOCIAL WORK = 14 OTHER COMMUNITY, SOCIAL & PERS. SERVICES = 15 PRIVATE HOUSEHOLD = 16 EXTRA TERRITORIAL ORGANISATIONS BODIES = 17 OTHER = 96 SPECIFY = _____ DON'T KNOW = -8 REFUSED = -9	

MODULE 3: MARRIAGE			
Interviewer says: "Now I would like to ask you about your current and previous relationships and/or marriages."			
301	Have you ever been married or lived together with a [man/woman] as if married?	YES = 1 NO = 2 DON'T KNOW =-8 REFUSED = -9	NO, DK, REFUSED → SKIP TO END OF MODULE
302	How old were you the first time you married or started living with a [man/woman] as if married?	AGE IN YEARS ___ ___ DON'T KNOW = -8 REFUSED = -9	
303	What is your marital status now: are you married, living together with someone as if married, widowed, divorced, or separated?	MARRIED = 1 LIVING TOGETHER = 2 WIDOWED = 3 DIVORCED = 4 SEPARATED = 5 DON'T KNOW = -8 REFUSED = -9	WIDOWED, DIVORCED, SEPARATED, DK, REFUSED → SKIP TO END OF MODULE
304	Altogether, how many wives or live-in partners do you have?	NUMBER OF WIVES OR LIVE-IN PARTNERS _____ DON'T KNOW = -8 REFUSED = -9	DK, REFUSED → SKIP TO END OF MODULE SKIP IF FEMALE

NO	QUESTIONS	CODING CATEGORIES	SKIPS
305	The Household Schedule listed [INSERT NUMBER OF REPORTED PARTNERS] household members as your wives/partners. Please review the list below. Are all of the listed household members your wives/partners who live in the household?	YES = 1 NO = 2	NO → 308 SKIP IF FEMALE
306	Is [HHRNAME**] your wife/partner?	YES = 1 NO = 2	SKIP IF FEMALE
307	Does [HHRNAME**] live in the household?	YES = 1 NO = 2	SKIP IF FEMALE
308	Do you have additional spouse(s)/partner(s) that live with you?	YES = 1 NO = 2	SKIP IF FEMALE
309	How many additional spouse(s)/partners(s) live with you?	NUMBER OF SPOUSES OR LIVE-IN PARTNERS _ _	SKIP IF FEMALE
310	Please enter the name of your spouse/partner that lives with you.	NAME OF SPOUSE/PARTNER ____ DON'T KNOW = -8 REFUSED = -9	SKIP IF FEMALE
311	How many wives or live-in partners do you have who live elsewhere?	NUMBER OF ADDITIONAL SPOUSE(S)/PARTNERS ____ DON'T KNOW = -8 REFUSED = -9	SKIP IF FEMALE
312	Is your husband or partner living with you now or is he staying elsewhere?	LIVING TOGETHER = 1 STAYING ELSEWHERE = 2 DON'T KNOW = -8 REFUSE TO ANSWER = -9	STAYING ELSEWHERE, DK, REFUSED →316 STAYING ELSEWHERE & LISTED PARTNER IN HH ROSTER→ 313 SKIP IF MALE
313	The household schedule listed [NAME OF HUSBAND/PARTNER] as your husband/partner who is living here. Is that correct?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES DK, REF→316 SKIP IF MALE
314	Please select the spouse/partner that lives with you.	[LIST OF PERSONS ON HH ROSTER] NOT LISTED IN HOUSEHOLD = 96	LISTED →316 SKIP IF MALE
315	Please enter the name of your spouse/partner that lives with you.	NAME OF SPOUSE/PARTNER ____ DON'T KNOW = -8 REFUSED = -9	SKIP IF MALE
316	Does your husband or partner have other wives or does he live with other women as if married?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSE TO ANSWER = -9	NO, DK, REFUSED→ SKIP TO END OF MODULE SKIP IF MALE
317	Including yourself, in total, how many wives or live-in partners does your husband or partner have?	NUMBER OF WIVES OR LIVE-IN PARTNERS _ _ DON'T KNOW = -8 REFUSE TO ANSWER = -9	SKIP IF MALE

NO	QUESTIONS	CODING CATEGORIES	SKIPS
MODULE 4: REPRODUCTION			
Interviewer says: "Now I would like to ask you questions about your pregnancies and your children."			IF MALE SKIP TO 439.
401	How many times have you been pregnant including a current pregnancy? CODE '00' IF NONE.	NUMBER OF TIME(S) ____ DON'T KNOW = -8 REFUSED = -9	NONE, DK, REFUSED → 439
402	Have you ever had a pregnancy that resulted in a live birth? A live birth is when the baby shows signs of life, such as breathing, beating of the heart or movement.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 438
403	In total, how many children have you given birth to who were born alive? These include children who were born alive but later died. They could have been children who have lived with you or have not lived with you.	NUMBER OF CHILDREN ____ DON'T KNOW = -8 REFUSED = -9	NONE, DK, REFUSED → 404
404	How many live births have you had since the 1st of January, 2013? CODE '00' IF NONE.	NUMBER OF CHILDREN ____ DON'T KNOW = -8 REFUSED = -9	NONE, DK, REFUSED → 438 YEAR IS SURVEY YEAR – 3 YEARS
405	Did your last pregnancy result in birth to twins or more?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REF → 406
	What is the name of the [BIRTHORDER*] born child from your last pregnancy that resulted in a live birth? A live birth is when the baby shows signs of life, such as breathing, beating of the heart or movement. DO NOT READ: IF THE CHILD WAS NOT NAMED BEFORE DEATH, INPUT BIRTH AND THE BIRTH ORDER NUMBER. FOR EXAMPLE, "BIRTH 1". DO NOT READ: WAS THERE ANOTHER MULTIPLE BORN ALIVE?	NAME _____	WILL BE REPEATED FOR EACH MULTIPLE BIRTH
406	What is the name of the child from your last pregnancy that resulted in a live birth? A live birth is when the baby shows signs of life, such as breathing, beating of the heart or movement. IF THE CHILD WAS NOT NAMED BEFORE DEATH, INPUT BIRTH 1.	NAME _____ ID NUMBER_____	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
407	When you were pregnant with [CHILDLAST/PRGTWINNAME*], did you plan to get pregnant at that time?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES, NO, DK, REFUSED → 408
408	When you were pregnant with [CHILDLAST/PRGTWINNAME*], did you visit a health facility for antenatal care?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 410
409	At what months in your pregnancy [CHILDLAST/PRGTWINNAME*] did you first attend the antenatal clinic? DO NOT READ: SELECT ALL THAT APPLY. SHOW AID IF UNSURE	0-3 MONTHS/1ST TRIMESTER = A 4-6 MONTHS/2ND TRIMESTER = B 7-9 MONTHS/3RD TRIMESTER = C DON'T KNOW = Y REFUSED = Z	ELECTRONIC AID IF DON'T KNOW
410	What is the <u>main</u> reason you did not visit a clinic for antenatal care when you were pregnant with [CHILDLAST/PRGTWINNAME*]?	CLINIC WAS TOO FAR AWAY = 1 COULD NOT TAKE TIME OFF WORK/TOO BUSY = 2 COULD NOT AFFORD TO PAY FOR THE VISIT = 3 DID NOT TRUST THE CLINIC STAFF = 4 RECEIVED CARE AT HOME = 5 DID NOT WANT AN HIV TEST DONE = 6 HUSBAND/FAMILY WOULD NOT LET ME GO = 7 USED TRADITIONAL BIRTH ATTENDANT/HEALER = 8 COST OF TRANSPORT = 9 RELIGIOUS REASONS = 10 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	ALL→ 420 ADAPT RESPONSES TO LOCAL CONTEXT.
411	Have you ever tested for HIV before your pregnancy with [CHILDLAST/PRGTWINNAME*]?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 414
412	Did you test positive for HIV before your pregnancy with [CHILDLAST/PRGTWINNAME*]?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 414
413	At the time of your first antenatal care visit when you were pregnant with [CHILDLAST/PRGTWINNAME*], were you taking ARVs, that is, antiretroviral medications to treat HIV?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES → BIRTHWHR NO, DK, REFUSED → 418 ELECTRONIC AID IF DON'T KNOW
414	During any of your visits to the antenatal care clinic when you were pregnant with [CHILDLAST/PRGTWINNAME*], were you <u>offered</u> an HIV test?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
415	Were you tested for HIV during any of your antenatal care clinic visits when you were pregnant with [CHILDLAST/PRGTWINNAME*]?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES →417 DK, REFUSED →420
416	What is the main reason you were not tested for HIV during antenatal care with [CHILDLAST/PRGTWINNAME*]?	DID NOT WANT AN HIV TEST DONE / DID NOT WANT TO KNOW MY STATUS = 1 DID NOT RECEIVE PERMISSION FROM SPOUSE/FAMILY = 2 AFRAID OTHERS WOULD KNOW ABOUT TEST RESULTS = 3 DID NOT NEED TEST/LOW RISK = 4 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	ALL→SKIP TO 420 ADAPT RESPONSES BASED ON LOCAL CONTEXT.
417	What was the result of your last HIV test during your pregnancy with [CHILDLAST/PRGTWINNAME*]?	POSITIVE = 1 NEGATIVE = 2 UNKNOWN/INDETERMINATE = 3 DID NOT RECEIVE RESULTS = 4 DON'T KNOW = -8 REFUSED = -9	NEGATIVE, UNK, NO RESULTS, DK, REF → 420
418	Did you take ARVs during your pregnancy with [NAME] to stop [CHILDLAST/PRGTWINNAME*] from getting HIV?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES, DK, REFUSED → 420
419	What was the main reason you did not take ARVs while you were pregnant with [CHILDLAST/PRGTWINNAME*]?	WAS NOT PRESCRIBED = 1 I FELT HEALTHY/NOT SICK = 2 COST OF MEDICATIONS = 3 COST OF TRANSPORT = 4 RELIGIOUS REASONS = 5 WAS TAKING TRADITIONAL MEDICATIONS = 6 MEDICATIONS OUT OF STOCK = 7 DID NOT WANT PEOPLE TO KNOW HIV STATUS = 8 DID NOT RECEIVE PERMISSION FROM SPOUSE/FAMILY = 9 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	
420	Where did you give birth to [CHILDLAST/PRGTWINNAME*]?	AT HOME = 1 AT A HEALTH FACILITY = 2 IN TRANSIT = 3 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	HOME, TRANSIT, OTH, DK, REFUSED → 429
421	What health facility or hospital did you deliver [CHILDLAST/PRGTWINNAME*] at?	PICK FROM LIST ENTER NAME _____ DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
422	Were you offered an HIV test during labor?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
423	Did you test for HIV during labor?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 429 SKIP IF HIV POSITIVE
424	What was the result of that test?	POSITIVE = 1 NEGATIVE = 2 UNKNOWN/INDETERMINATE = 3 DID NOT RECEIVE RESULTS = 4 DON'T KNOW = -8 REFUSED = -9	NEG, UNK/INDET, NO RESULTS, DK, REFUSED → 429 SKIP IF HIV POSITIVE
425	During labor, were you offered ARVs to protect [NAME] against HIV? DO NOT READ: SHOW ARV GRAPHIC IF PARTICIPANT IS UNSURE	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	SKIP IF ALREADY ON ARVS
426	During labor, did you take ARVs to protect [CHILDLAST/PRGTWINNAME*] against HIV? DO NOT READ: SHOW ARV GRAPHIC IF PARTICIPANT IS UNSURE	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9 NO, DK, REFUSED → CHILDBDATE ADAPT BASED ON COUNTRY CONTEXT ELECTRONIC AID IF DON'T KNOW SKIP IF ALREADY ON ARVS	
427	Did you continue to take ARVs after delivery?	YES = 1 NO= 2 DON'T KNOW =8 REFUSED = -9	ADAPT TO LOCAL COUNTRY CONTEXT. SKIP IF ALREADY ON ARVS.
428	For how many months after delivery did you continue to take ARVs?	MONTH __ __ STILL TAKING ARVS = 95 DON'T KNOW = -8 REFUSED = -9	
429	When did you give birth to [CHILDLAST/PRGTWINNAME*]? Please give your best guess.	DAY __ __ DON'T KNOW DAY= -8 REFUSED DAY= -9 MONTH __ __ DON'T KNOW MONTH= -8 REFUSED MONTH= -9 YEAR __ __ __ __ DON'T KNOW YEAR=-8 REFUSED YEAR= -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
430	Is [CHILDLAST/PRGTWINNAME*] still alive?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES, DK, REFUSED →433 NO→431
431	How old was [CHILDLAST/PRGTWINNAME*] when he/she died? KEY '0' IF CHILD WAS LESS THAN ONE YEAR OLD	COMPLETED YEARS _____ DON'T KNOW = -8 REFUSED = -9	>0, DK, REF →432
432	How old was [CHILDLAST/PRGTWINNAME*] in months when he/she died? KEY '0' IF LESS THAN ONE MONTH OLD.	COMPLETED MONTHS _____ DON'T KNOW = -8 REFUSED = -9	
433	Is [CHILDLAST/PRGTWINNAME*] living with you?	YES = 1 NO = 2	NO →435
434	Please select [CHILDLAST/PRGTWINNAME*] that lives with you. RECORD '0' IF CHILD NOT LISTED IN HOUSEHOLD	[LIST OF CHILDREN IN HOUSEHOLD] NOT LISTED IN HOUSEHOLD = 96	
435	Did you ever breastfeed [CHILDLAST/PRGTWINNAME*]?	YES = 1 NO, NEVER BREASTFED = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 438
436	For how long did you breastfeed [CHILDLAST/PRGTWINNAME*]? ONLY ONE OPTION MAY BE SELECTED. FOR EXAMPLE, ANSWER ONLY IN WEEKS OR IN MONTHS. CODE '00' IF LESS THAN 1 WEEK.	WEEKS ____ MONTHS ____ STILL BREASTFEEDING = 96 DON'T KNOW = -8 REFUSED = -9	
437	Thank you for the information regarding [CHILDLAST/PRGTWINNAME*].		IF 405 = 1 RETURN TO CHILDALIVE* FOR EACH VALUE OF PRGTWINNAME*
438	Are you pregnant now?	YES = 1 NO = 2 DON'T KNOW/UNSURE = -8 REFUSED = -9	YES → SKIP TO END OF MODULE
439	Are you or your partner currently doing something or using any method to delay or avoid getting pregnant?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED→SKIP TO END OF MODULE

NO	QUESTIONS	CODING CATEGORIES	SKIPS
440	Which method are you or your partner using? SELECT ALL THAT APPLY.	FEMALE STERILIZATION = A MALE STERILIZATION = B PILL = C IUD/"COIL" = D INJECTIONS = E IMPLANT = F CONDOM = G FEMALE CONDOM = H RHYTHM/NATURAL METHODS = I WITHDRAWAL = J NOT HAVING SEX = K OTHER = X SPECIFY: _____ DON'T KNOW = Y REFUSED = Z	

MODULE 5: CHILDREN			
Interviewer says: "I am going to ask you a number of questions about your child/children regarding their health and where they get their health services. I will begin with your youngest child."			
	LIST OF CHILDREN < 14 ASSIGNED TO [INNAME]		
	Now I am going to ask you questions for [CHILD*].		
501	How old is [CHILD*] in years? IF [CHILD*] IS LESS THAN 1 YEAR OLD, KEY 0 HERE AND KEY AGE IN MONTHS ON NEXT SCREEN.	YEARS ___ DON'T KNOW =-8 REFUSED = -9	>5, DK, REF →504 1-5 → 503 AGE CANNOT BE GREATER THAN 14 YEARS.
502	How old is [CHILD*] in months?	MONTHS ___ DON'T KNOW =-8 REFUSED = -9	ALL → 504
503	You said that [CHILD*] was [KIDAGEY]. How many months over [KIDAGEY] is [CHILD*].	MONTHS ____ DON'T KNOW = -8 REFUSED = -9	
504	Is [CHILD*] a boy or girl?	BOY = 1 GIRL = 2 DON'T KNOW = -8 REFUSED = -9	
505	Is [CHILD*] enrolled in school?	YES = 1 NO, CURRENTLY NOT IN SCHOOL = 2 NO, TOO YOUNG TO BE IN SCHOOL = 3 DON'T KNOW = -8 REFUSED = -9	NO, CURR NOT IN SCHOOL→ 508 NO, TOO YOUNG, DK, REFUSED → 510
506	What is the highest level of school [CHILD*] has attended: primary or secondary?	NURSERY = 1 PRIMARY = 2 SECONDARY = 3 DON'T KNOW = -8 REFUSED = -9	NURSERY, DK, REF → 510

NO	QUESTIONS	CODING CATEGORIES	SKIPS
507	What standard/form/year is [CHILD*] in now?	STANDARD/FORM/YEAR _____ DON'T KNOW = -8 REFUSED = -9	ALL → 510
508	Was [CHILD*] enrolled in school during the previous school year?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REF → 510
509	What standard/form/year was [CHILD*] during the previous school year?	STANDARD/FORM/YEAR _____ DON'T KNOW = -8 REFUSED = -9	
510	Is [CHILD*] circumcised? Circumcision is the complete removal of the foreskin from the penis. If you feel comfortable, I can show you a picture of a completely circumcised penis.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REF → 511 SKIP IF FEMALE CHILD. ELECTRONIC AID IF REQUESTED.
511	Why is [CHILD*] not circumcised?	DON'T KNOW WHERE TO GET CIRCUMCISED = A HAD TO TRAVEL TOO FAR TO GET CIRCUMCISED = B CHILD WAS AFRAID TO GET CIRCUMCISED = C DO NOT HAVE A REASON TO CIRCUMCISE THE CHILD = D WAITING UNTIL CHILD IS OLDER TO GET HIM CIRCUMCISED = E RELIGIOUS REASONS = F OTHER = G SPECIFY: _____ DON'T KNOW = Y REFUSED = Z	
512	Who circumcised [CHILD*]?	DOCTOR, CLINICAL OFFICER, OR NURSE = 1 TRADITIONAL PRACTITIONER / CIRCUMCISER =2 MIDWIFE = 3 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSE TO ANSWER=-9	SKIP IF FEMALE CHILD. ADAPT RESPONSES BASED ON COUNTRY CONTEXT
513	Has [CHILD*] ever been tested for HIV?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES → 515 DK, REFUSED → 532

NO	QUESTIONS	CODING CATEGORIES	SKIPS
514	Why has [CHILD*] never been tested for HIV? SELECT ALL THAT APPLY.	DON'T KNOW WHERE TO TEST = A TEST COSTS TOO MUCH = B TRANSPORT COSTS TOO MUCH = C TOO FAR AWAY = D AFRAID OTHERS WILL KNOW ABOUT TEST RESULTS = E DON'T NEED TEST/LOW RISK = F DID NOT RECEIVE PERMISSION FROM SPOUSE/FAMILY = G AFRAID SPOUSE/PARTNER/FAMILY WILL KNOW RESULTS = H DON'T WANT TO KNOW CHILD HAS HIV = I CANNOT GET TREATMENT FOR HIV = J TEST KITS NOT AVAILABLE = K RELIGIOUS REASONS = L OTHER = X SPECIFY: _____ DON'T KNOW = Y REFUSED = Z	ALL-> 532
515	What month and year was [CHILD*]'s last HIV test done?	MONTH ___ ___ DON'T KNOW MONTH = -8 REFUSED MONTH = -9 YEAR ___ ___ ___ ____ DON'T KNOW YEAR = -8 REFUSED YEAR = -9	DATE RESTRAINTS
516	What was [CHILD*]'s last HIV test result?	POSITIVE = 1 NEGATIVE = 2 UNKNOWN/INDETERMINATE = 3 DID NOT RECEIVE RESULTS = 4 DON'T KNOW = -8 REFUSED = -9	IF NEG, UNK/INDET, DID NOT RECEIVE, DK, REFUSED → 532
517	What was the month and year of [CHILD*]'s first HIV positive test result? Please give your best guess. This will be the very first HIV-positive test result that you have received. PROBE TO VERIFY DATE.	MONTH ___ ___ DON'T KNOW MONTH = -8 REFUSED MONTH = -9 YEAR ___ ___ ___ ____ DON'T KNOW YEAR = -8 REFUSED YEAR = -9	
518	Has [CHILD*] ever received HIV medical care from a doctor, clinical officer or nurse?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES → 520 DK, REFUSED → 523 ADAPT HEALTHCARE PROVIDER TERMS BASED ON LOCAL CONTEXT.

NO	QUESTIONS	CODING CATEGORIES	SKIPS
519	What is the main reason why [CHILD*] has never seen a doctor, clinical officer, or nurse for HIV medical care?	FACILITY IS TOO FAR AWAY = 1 I DON'T KNOW WHERE TO GET HIV MEDICAL CARE FOR CHILD = 2 COST OF CARE = 3 COST OF TRANSPORT = 4 I DON'T THINK CHILD NEEDS IT, HE/SHE IS NOT SICK = 5 I FEAR PEOPLE WILL KNOW THAT CHILD HAS HIV IF I TAKE HIM/HER TO A CLINIC = 6 RELIGIOUS REASONS = 7 CHILD IS TAKING TRADITIONAL MEDICINE = 8 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	ALL→ 523 ADAPT RESPONSES TO LOCAL CONTEXT. ADAPT HEALTHCARE PROVIDER TERMS BASED ON LOCAL CONTEXT.
520	What month and year did [CHILD*] <u>first</u> see a doctor, clinical officer or nurse for HIV medical care? PROBE TO VERIFY DATE.	MONTH _____ DON'T KNOW MONTH = -8 REFUSED MONTH= -9 YEAR _____ DON'T KNOW YEAR =-8 REFUSED YEAR = -9	
521	What month and year did [CHILD*] <u>last</u> see a doctor, clinical officer or nurse for HIV medical care?	MONTH _____ DON'T KNOW MONTH = -8 REFUSED MONTH= -9 YEAR _____ DON'T KNOW YEAR =-8 REFUSED YEAR = -9	IF <7 MONTHS, DK, REFUSED, MISSING DATE → 523
522	What is the <u>main</u> reason for [CHILD*] not seeing a doctor, clinical officer or nurse for HIV medical care for more than 6 months?	FACILITY IS TOO FAR AWAY = 1 I DON'T KNOW WHERE TO GET HIV MEDICAL CARE FOR CHILD = 2 COST OF CARE = 3 COST OF TRANSPORT = 4 I DON'T THINK CHILD NEEDS IT, HE/SHE IS NOT SICK = 5 I FEAR PEOPLE WILL KNOW THAT CHILD HAS HIV IF I TAKE HIM/HER TO A CLINIC = 6 RELIGIOUS REASONS = 7 CHILD IS TAKING TRADITIONAL MEDICINE = 8 NO APPOINTMENT SCHEDULED/DID NOT MISS MOST RECENT APPOINTMENT= 9 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	
523	Has [CHILD*] ever had a CD4 count test? The CD4 count tells you how sick you are with HIV and if you need to take any HIV medications. All HIV infected people need to take ARVs.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 525 NO, DK, REFUSED & NEVER IN HIV CARE → 532

NO	QUESTIONS	CODING CATEGORIES	SKIPS
524	What month and year was [CHILD*] last tested for his/her CD4 count?	MONTH ___ ___ DON'T KNOW MONTH = -8 REFUSED MONTH = -9 YEAR ___ ___ ___ ___ DON'T KNOW YEAR = -8 REFUSED YEAR = -9	SKIP TO 532 IF NEVER IN HIV CARE.
525	Has [CHILD*] ever taken ARVs, that is, antiretroviral medications to treat his/her HIV infection?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES → 527 DK, REFUSED → 531 ELECTRONIC AID IF DON'T KNOW
526	What is the main reason [CHILD*] has never taken ARVs?	CHILD IS NOT ELIGIBLE FOR TREATMENT=1 HEALTH CARE PROVIDER DID NOT PRESCRIBE = 2 HIV MEDICINES NOT AVAILABLE = 3 DO NOT THINK CHILD NEEDS IT, HE/SHE IS NOT SICK = 4 COST OF MEDICATIONS = 5 COST OF TRANSPORT = 6 RELIGIOUS REASONS = 7 CHILD IS TAKING TRADITIONAL MEDICATIONS = 8 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	ALL→SKIP TO 531 ADAPT RESPONSES BASED ON COUNTRY CONTEXT.
527	What month and year did [CHILD*] first start taking ARVs? PROBE TO VERIFY DATE.	MONTH = ____ DON'T KNOW MONTH = -8 REFUSED MONTH = -9 YEAR = ____ DON'T KNOW YEAR = -8 REFUSED YEAR = -9	
528	Is [CHILD*] currently taking ARVs, that is, antiretroviral medications? By currently, I mean that [CHILD*] may have missed some doses but [CHILD* is still taking ARVs.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES → 530 DK, REFUSED → 531

NO	QUESTIONS	CODING CATEGORIES	SKIPS
529	Can you tell me the main reason why [CHILD*] is not currently taking ARVs?	I HAVE TROUBLE GIVING CHILD A TABLET EVERYDAY = 1 CHILD HAD SIDE EFFECTS/RASH = 2 FACILITY/PHARMACY TOO FAR AWAY TO GET MEDICATION REGULARLY = 3 COST OF MEDICATIONS = 4 COST OF TRANSPORT = 5 CHILD IS HEALTHY/HE/SHE IS NOT SICK = 6 FACILITY WAS OUT OF STOCK = 7 RELIGIOUS REASONS= 8 **CHILD** IS TAKING TRADITIONAL MEDICATIONS = 9 OTHER =96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	ALL →531 ADAPT RESPONSES BASED ON COUNTRY CONTEXT.
530	People sometimes forget to take all their ARVs every day. In the last 30 days, how many days has [CHILD*] missed taking any ARV pills? CODE '00' IF NONE.	DAYS ___ ___ DON'T KNOW = -8 REFUSED = -9	
531	Is [CHILD*] currently taking Septrin, Dapsone or cotrimoxazole? Septrin, Dapsone or cotrimoxazole is a medicine recommended for people with HIV, even if they have not started treatment for HIV. It helps prevent certain infections but it is not treatment for HIV. By currently, I mean that [CHILD*] may have missed some doses but is still taking Septrin, Dapsone or cotrimoxazole.	YES = 1 NO = 2 I DON'T KNOW WHAT IT IS = 3 REFUSED = -9	ADAPT TERM 'SEPTRIN' BASED ON COUNTRY CONTEXT. ELECTRONIC AID IF DON'T KNOW
532	Has [CHILD*] ever visited a clinic for tuberculosis for TB diagnosis or treatment?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → SKIP TO END OF MODULE
533	Have you ever been told by a doctor, clinical officer or nurse that [CHILD*] had TB?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → SKIP TO END OF MODULE ADAPT TERMS FOR HEALTHCARE PROVIDER TO COUNTRY CONTEXT.
534	Was [CHILD*] ever treated for TB?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → SKIP TO END OF MODULE

NO	QUESTIONS	CODING CATEGORIES	SKIPS
535	Is [CHILD*] currently on treatment for TB?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 537
536	The last time [CHILD*] was treated for TB, did [CHILD*] complete at least 6 months of treatment?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
537	Thank you for the information about [CHILD*]. DOES THE RESPONDENT HAVE ANOTHER CHILD AGED 0-14 YEARS?	YES = 1 NO = 2	YES→RETURN TO START OF MODULE 5
MODULE 6: MALE CIRCUMCISION			
Interviewer says: "I will be asking a few questions about circumcision. Circumcision is the removal of the foreskin from the penis. If you feel comfortable, I can show you a picture of circumcised penis."			ELECTRONIC AID IF REQUESTED. IF FEMALE → 609
601	Some men are uncomfortable talking about circumcision but it is important for us to have this information. Some men are circumcised. Are you circumcised?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED=9	YES→604 NO → 606 DK, REF → 609
602	If so, were you medically circumcised, traditionally circumcised, or both? By medically, we mean that your circumcision was done at the hospital or clinic, while traditional circumcision is done by a traditional doctor at the initiation school.	MEDICAL = 1 TRADITION = 2 BOTH = 3 DON'T KNOW = -8 REFUSED = -9	DK, REF → 609
603	Are you completely or partially circumcised? In partial circumcision, a small part of the foreskin is removed from the penis while in complete circumcision, the entire foreskin is removed. If you allow me, I can show you a picture that shows a partially and a completely circumcised penis.	COMPLETELY = 1 PARTIALLY = 2 DON'T KNOW = -8 REFUSED = -9	DK, REF → 609
604	How old were you when you were medically circumcised? Please give your best guess. How old were you when you were traditionally circumcised? Please give your best guess. IF LESS THAN ONE YEAR, CODE '00'.	MEDICAL: COMPLETED AGE IN YEARS _____ DON'T KNOW = -8 REFUSED = -9 TRADITIONAL: COMPLETED AGE IN YEARS _____ DON'T KNOW = -8 REFUSED= -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
605	Who did the circumcision?	DOCTOR, CLINICAL OFFICER, OR NURSE = 1 RELIGIOUS LEADER = 2 TRADITIONAL PRACTITIONER, CIRCUMCISER/INITIATION SCHOOL PERSONNEL = 3 MIDWIFE = 4 FAMILY MEMBER/RELATIVE = 5 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	
606	Are you planning to get circumcised?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED= -9	YES → 607 NO → 608 DK, REF → 609
607	What type of circumcision are you planning to get?	MEDICAL = 1 TRADITIONAL = 2 DON'T KNOW = -8 REFUSED = -9	ALL → 609
608	Why are you not planning to get circumcised?	DON'T KNOW WHERE TO GET CIRCUMCISED = A HAD TO TRAVEL TOO FAR TO GET CIRCUMCISED = B AFRAID TO GET CIRCUMCISED = C DO NOT HAVE A REASON TO GET CIRCUMCISED = D RELIGIOUS REASONS = E NO REASON = F OTHER = X SPECIFY: _____ DON'T KNOW = Y REFUSED = Z	
609	Does male circumcision alone reduce the risk, or chance, of a man getting HIV completely, somewhat or not at all?	PROTECTS COMPLETELY = 1 PROTECTS SOMEWHAT = 2 NOT AT ALL = 3 DON'T KNOW = 4 REFUSED = -9	

MODULE 7: SEXUAL ACTIVITY

Interviewer says: "In this part of the interview, I will be asking questions about your sexual relationships and practices. These questions will help us have a better understanding of how they may affect your life and risk for HIV.

Let me assure you again that your answers are completely confidential and will not be shared with anyone. If there are questions that you do not want to answer, we can go to the next question."

701	How old were you when you had vaginal sex for the very <u>first</u> time? Vaginal sex is when a penis enters a vagina. IF UNSURE, ASK THEM TO MAKE A BEST GUESS USING OTHER EVENTS IN THEIR LIFE THAT HAPPENED AROUND THE SAME TIME. IF THE PARTICIPANT HAS NEVER HAD SEX, REFUSES, OR DOES NOT KNOW, SWIPE THROUGH WITHOUT ENTERING ANY RESPONSE. YOU WILL BE ABLE TO RECORD THESE RESPONSES ON THE SCREEN THAT FOLLOWS.	AGE IN YEARS _ _ NEVER HAD VAGINAL SEX = 96 DON'T KNOW = -8 REFUSED = -9	IF NEVER HAD VAGINAL SEX → SKIP TO 704
702	The first time you had vaginal sex was a condom used?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
703	The first time you had vaginal sex, was it because you wanted to or because you were forced?	WANTED TO = 1 FORCED = 2 DON'T KNOW = -8 REFUSED = -9	
704	People have sex in different ways. Some have vaginal sex. Some have anal sex. Anal sex is when a penis enters a person's anus. Have you ever had anal sex?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED NEVER ANAL SEX __> 708 NEVER VAGINAL OR ANAL SEX__> NEXT MODULE
705	How old were you when you had anal sex for the very <u>first</u> time?	AGE IN YEARS _ _ DON'T KNOW = -8 REFUSED = -9	
706	The first time you had anal sex was a condom used?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
707	The first time you had anal sex, was it because you wanted to or because you were forced?	WANTED TO = 1 FORCED = 2 DON'T KNOW = -8 REFUSED = -9	
708	How old was the person you first had vaginal or anal sex with? Please give your best guess.	AGE IN YEARS _____ DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
709	People often have sex with different people over their lifetime. In total, with how many different people have you had vaginal or anal sex in your lifetime? Please give your best guess. IF NUMBER OF PARTNERS IS GREATER THAN 100, WRITE ' 100'.	NUMBER OF SEXUAL PARTNERS IN LIFETIME ____ DON'T KNOW = -8 REFUSED = -9	
710	People often have sex with different partners over their lifetime. In total, with how many different people have you had vaginal or anal sex in the last 12 months? IF NONE CODE '00'. IF NUMBER OF PARTNERS IS GREATER THAN 100, WRITE ' 100'.	NUMBER OF SEXUAL PARTNERS IN LAST 12 MONTHS _____ DON'T KNOW = -8 REFUSED = -9	IF 00 PARTNERS IN LAST 12 MONTHS → SKIP TO 728
711	Does [INITIALS] live in this household?	YES = 1 NO = 2	NO→713
712	DO NOT READ: HOUSEHOLD LINE NO. for [INITIALS] CODE '0' IF NOT LISTED IN HOUSEHOLD ROSTER.	[LIST OF PERSONS FROM HOUSEHOLD] NOT LISTED IN HOUSEHOLD = 96	LISTED → 714
713	I would like to ask you for the initials of this person so I can keep track. They do not have to be the actual initials of this person.	INITIALS ____ ____	
714	What is your relationship with (INITIALS)?	HUSBAND/WIFE = 1 LIVE-IN PARTNER = 2 PARTNER, NOT LIVING WITH RESPONDENT = 3 EX-SPOUSE/EX-PARTNER = 4 FRIEND/ACQUAINTANCE = 5 SEX WORKER = 6 SEX WORKER CLIENT =7 STRANGER = 8 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	
715	Is (INITIALS) male or female?	MALE = 1 FEMALE = 2 DON'T KNOW = -8 REFUSED = -9	
716	How old is (INITIALS)? Please give your best guess.	AGE IN YEARS ____ DON'T KNOW = -8 REFUSED = -9	
717	The <u>last</u> time you had sex with (INITIALS) was a condom used?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
718	Did you enter into a sexual relationship with (INITIALS) because (INITIALS) provided you with or you expected that (INITIALS) would provide you gifts, help you to pay for things, or help you in other ways?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 720 SKIP IF SEX WORKER OR CLIENT
719	In the <u>last 12 months</u>, what have you received from (INITIALS)? READ RESPONSES ALOUD. SELECT ALL THAT APPLY.	DID NOT RECEIVE ANYTHING = A MONEY = B FOOD = C SCHOOL FEES = D EMPLOYMENT = E GIFTS/FAVORS = F TRANSPORT = G SHELTER/RENT = H PROTECTION = I OTHER = X SPECIFY: _____ DON'T KNOW = Y REFUSED = Z	SKIP IF SPOUSE, LIVE-IN PARTNER, SEX WORKER OR CLIENT
720	Do you expect to have sex with (INITIALS) again?	YES =1 NO =2 DON'T KNOW = -8 REFUSED = -9	
721	Does (INITIALS) know your HIV status? HIV status could mean you are HIV negative or HIV positive.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
722	What is the HIV status of (INITIALS)? READ RESPONSES ALOUD	I THINK (INITIALS) IS POSITIVE = 1 (INTIALS) TOLD ME HE/SHE IS POSITIVE = 2 (INITIALS) IS POSITIVE, TESTED TOGETHER = 3 I THINK (INITIALS) IS NEGATIVE = 4 (INITIALS) TOLD ME HE/SHE IS NEGATIVE = 5 (INITIALS) IS NEGATIVE, TESTED TOGETHER=6 DON'T KNOW STATUS = 7 REFUSED = -9	
723	How long has it been since you <u>last</u> had sex with (INITIALS)? DO NOT READ: IF LESS THAN ONE WEEK RECORD IN DAYS, IF LESS THAN ONE MONTH, RECORD IN WEEKS, OTHERWISE RECORD IN MONTHS.	DAYS _ _ WEEKS _ _ MONTHS _ _ DON'T KNOW = -8 REFUSED = -9	
724	How long has it been since you <u>first</u> had sex with (INITIALS)? DO NOT READ: IF LESS THAN ONE WEEK RECORD IN DAYS, IF LESS THAN ONE MONTH, RECORD IN WEEKS. IF LESS THAN ONE YEAR, RECORD, IN MONTHS, OTHERWISE RECORD IN YEARS.	DAYS _ _ WEEKS _ _ MONTHS _ _ YEARS _ _ DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
725	In the last 4 weeks, what is the total number of times you had sex with (INITIALS)? By "times" we mean number of sex acts. For example, you could have sex 5 times with the same partner. CODE '00' IF NONE.	NUMBER OF TIMES ____ DON'T KNOW = -8 REFUSED = -9	
726	In the last 12 months, how often did you use condoms with (INITIALS) when having vaginal sex? Was it always, most of the time, sometimes, rarely or never?	ALWAYS = 1 MOST OF THE TIME = 2 SOMETIMES = 3 RARELY = 4 NEVER = 5 NO VAGINAL SEX IN THE LAST 12 MONTHS = 3 DON'T KNOW = -8 REFUSED = -9 SKIP IF NEVER HAD VAGINAL SEX.	
727	DOES THE RESPONDENT HAVE ANOTHER PARTNER IN THE LAST 12 MONTHS? I will now ask you about the person you have had sex with previous to (initials).	YES = 1 NO = 2	YES → 711
728	Have you ever <u>had</u> sex for money and/or gifts?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 731
729	In the last 12 months, have you <u>had</u> sex for money and/or gifts?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 731
730	The last time you had sex for money and/or gifts, was a condom used?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
731	Have you <u>ever</u> paid money or given gifts for sex?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → ENDOFMODULE
732	In the last 12 months, have you paid money or given gifts for sex?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → ENDOFMODULE
729	The last time you paid money or gave gifts for sex, was a condom used?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
MODULE 8: HIV KNOWLEDGE			
Interviewer says: "Now I will ask you questions on your knowledge of HIV."			SELECT A SUBSET (I.E. HALF) OF PARTICIPANTS
801	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
802	Can a person get HIV from mosquito bites?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
803	Can a person reduce their risk of getting HIV by using a condom every time they have sex?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
804	Can a person get HIV by sharing food with someone who has HIV?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
805	Can a healthy-looking person have HIV?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
806	Would you buy fresh vegetables from a shop keeper or vendor if you knew the person had HIV?	YES = 1 NO = 2 DON'T KNOW/NOT SURE/DEPENDS = -8 REFUSED = -9	
807	Do you think children living with HIV should be allowed to attend school with children who do not have HIV?	YES = 1 NO = 2 DON'T KNOW/NOT SURE/DEPENDS = -8 REFUSED = -9	
808	Do you think people hesitate to take an HIV test because they are afraid of how other people will react if the test result is positive for HIV?	YES = 1 NO = 2 DON'T KNOW/NOT SURE/DEPENDS = -8 REFUSED = -9	
809	Do people talk badly about people who are living with HIV, or who are thought to be living with HIV?	YES = 1 NO = 2 DON'T KNOW/NOT SURE/DEPENDS = -8 REFUSED = -9	
810	Do people living with HIV, or thought to be living with HIV, lose the respect of other people?	YES = 1 NO = 2 DON'T KNOW/NOT SURE/DEPENDS = -8 REFUSED = -9	
811	Do you fear that you could get HIV if you come into contact with the saliva of a person living with HIV?	YES = 1 NO =2 ALREADY HAS HIV = 3 DON'T KNOW/NOT SURE/DEPENDS = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
812	Do you agree or disagree with the following statement: I would be ashamed if someone in my family had HIV.	AGREE = 1 DISAGREE = 2 DON'T KNOW/NOT SURE/DEPENDS = -8 REFUSED = -9	
MODULE 9: HIV TESTING			
Interviewer says: "I would now like to ask you some questions about HIV testing."			
901	Have you <u>ever</u> **tested** for HIV?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES → 903 DK, REFUSED→SKIP TO END OF MODULE CONSTRAINT IF REPORTED TESTING
902	Why have you never been tested for HIV? SELECT ALL THAT APPLY. READ ALL RESPONSE CATEGORIES	DON'T KNOW WHERE TO TEST = A TEST COSTS TOO MUCH = B TRANSPORT COSTS TOO MUCH = C TOO FAR AWAY = D AFRAID OTHERS WILL KNOW ABOUT TEST RESULTS = E DON'T NEED TEST/LOW RISK = F DID NOT RECEIVE PERMISSION FROM SPOUSE/FAMILY = G AFRAID SPOUSE/PARTNER/FAMILY WILL KNOW RESULTS = H DON'T WANT TO KNOW I HAVE HIV = I CANNOT GET TREATMENT FOR HIV = J TEST KITS NOT AVAILABLE = K RELIGIOUS REASONS = L OTHER = X SPECIFY: _____ DON'T KNOW = Y REFUSED = Z	
903	In your lifetime, how many times have you been tested for HIV?	NUMBER OF TIMES TESTED FOR HIV __ __ DON'T KNOW = -8 REFUSED = -9	CONSTRAINT SHOULD BE >=1
904	What month and year was your last HIV test?	CALENDER MONTH _____ _____ DON'T KNOW MONTH= -8 REFUSED MONTH= -9 CALENDER YEAR ____ DON'T KNOW YEAR = -8 REFUSED YEAR= -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
905	Where was your last test done?	VCT FACILITY = 1 MOBILE VCT = 2 AT HOME = 3 HEALTH CLINIC/FACILITY = 4 HOSPITAL OUTPATIENT CLINIC = 5 TB CLINIC = 6 STI CLINIC = 7 HOSPITAL INPATIENT WARDS = 8 BLOOD DONATING CENTER = 9 ANC CLINIC = 10 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	
906	What was the result of that HIV test?	POSITIVE = 1 NEGATIVE = 2 UNCERTAIN/INDETERMINATE = 3 DID NOT RECEIVE THE RESULT = 4 DON'T KNOW = -8 REFUSED = -9	NEG, UNCERTAIN/IND, NO RESULT, DK, REF→SKIP TO END OF MODULE
907	What was the month and year of your first HIV-positive test result? Please give your best guess. This will be the very first HIV-positive test result that you have received. DO NOT READ; PROBE TO VERIFY DATE.	CALENDER MONTH ___ ___ DON'T KNOW MONTH = -8 REFUSED MONTH = -9 CALENDER YEAR ___ ___ ___ ____ DON'T KNOW YEAR = -8 REFUSED YEAR = -9	
908	Of the following people, to whom have you told that you are HIV positive? CHECK ALL THAT APPLY. READ ALL RESPONSE CATEGORIES ALOUD.	NO ONE = A SPOUSE/SEX PARTNER = B DOCTOR = C FRIEND = D FAMILY MEMBER = E OTHER = X SPECIFY: _____ DON'T KNOW = Y REFUSED = Z	SKIP TO NEXT QUESTION IF NO ONE, DK OR REFUSED.
			SKIP TO END OF MODULE IF NOT HIV POSITIVE.
909	In the last 12 months, when you sought health care in a facility where your HIV status is not known, did you feel you needed to hide your HIV status?	YES = 1 NO, NO NEED TO HIDE = 2 NO, DID NOT ATTEND HEALTH FACILITY IN LAST 12 MONTHS =3 DON'T KNOW = -8 REFUSED = -9	NO, DID NOT ATTEND HEALTH FACILITY→SKIP TO NEXT MODULE
910	In the last 12 months, have you been denied health services including dental care, because of your HIV status?	YES = 1 NO = 2 NO ONE KNOWS MY STATUS = 3 DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
MODULE 10: HIV STATUS, CARE AND TREATMENT			
Interviewer says: "Now I'm going to ask you more about your experience with HIV support, care and treatment."			SKIP TO NEXT MODULE IF NOT HIV POSITIVE
1001	After learning you had HIV, have you ever received HIV medical care from a doctor, clinical officer or nurse?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES → 1003 DK, REFUSED → SKIP TO END OF MODULE ADAPT HEALTHCARE PROVIDER TERMS TO LOCAL CONTEXT.
1002	What is the main reason why you have never received HIV medical care from a doctor, clinical officer, or nurse?	FACILITY IS TOO FAR AWAY = 1 I DON'T KNOW WHERE TO GET HIV MEDICAL CARE = 2 COST OF CARE = 3 COST OF TRANSPORT = 4 I DO NOT NEED IT/I FEEL HEALTHY/NOT SICK = 5 I FEAR PEOPLE WILL KNOW THAT I HAVE HIV IF I GO TO A CLINIC = 6 RELIGIOUS REASONS = 7 I'M TAKING TRADITIONAL MEDICINE= 8 DO NOT TRUST THE STAFF/QUALITY OF CARE = 9 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	SKIP TO 1006
1003	What month and year did you first see a doctor, clinical officer or nurse for HIV medical care? DO NOT READ; PROBE TO VERIFY DATE.	CALENDER MONTH ___ ___ DON'T KNOW MONTH = -8 REFUSED MONTH = -9 CALENDER YEAR ___ ___ ___ DON'T KNOW YEAR = -8 REFUSED YEAR = -9	
1004	What month and year did you last see a doctor, clinical officer or nurse for HIV medical care?	CALENDER MONTH ___ ___ DON'T KNOW MONTH = -8 REFUSED MONTH= -9 CALENDER YEAR ___ ___ ___ DON'T KNOW YEAR = -8 REFUSED = -9	IF <7 MONTHS, DK, REFUSED → 1006

NO	QUESTIONS	CODING CATEGORIES	SKIPS
1005	What is the main reason for not seeing a doctor, clinical officer or nurse for HIV medical care for more than 6 months?	THE FACILITY IS TOO FAR AWAY = 1 I DON'T KNOW WHERE TO GET HIV MEDICAL CARE = 2 COST OF CARE = 3 COST OF TRANSPORT = 4 I DO NOT NEED IT/I FEEL HEALTHY/NOT SICK = 5 I FEAR PEOPLE WILL KNOW THAT I HAVE HIV IF I GO TO A CLINIC = 6 I'M TAKING TRADITIONAL MEDICINE = 7 RELIGIOUS REASONS = 8 NO APPOINTMENT SCHEDULED/DID NOT MISS MOST RECENT APPOINTMENT = 9 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	ADAPT TIME BASED ON COUNTRY LOST-TO-FOLLOW-UP FOR PRE-ART HIV CARE.
1006	Have you ever had a CD4 count test? The CD4 count tells you how sick you are with HIV and if you need to take ARVs or other HIV medications.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 1008 NO, DK, REFUSED & NEVER IN HIV CARE → SKIP TO END OF MODULE
1007	What month and year were you last tested for your CD4 count?	CALENDAR MONTH ___ ___ DON'T KNOW MONTH = -8 REFUSED MONTH = -9 CALENDAR YEAR ___ ___ ___ DON'T KNOW YEAR = -8 REFUSED YEAR = -9	
1008	Have you ever taken ARVs, that is, antiretroviral medications to treat HIV infection?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES→ 1010 DK, REFUSED → SKIP TO END OF MODULE
1009	What is the main reason you have never taken ARVs?	NOT ELIGIBLE FOR TREATMENT=1 HEALTH CARE PROVIDER DID NOT PRESCRIBE = 2 HIV MEDICINES NOT AVAILABLE = 3 I FEEL HEALTHY/NOT SICK = 3 COST OF MEDICATIONS = 4 COST OF TRANSPORT = 5 RELIGIOUS REASONS = 6 TAKING TRADITIONAL MEDICATIONS = 7 NOT ATTENDING HIV CLINIC = 8 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	ALL→SKIP TO END OF MODULE ADAPT RESPONSES BASED ON COUNTRY CONTEXT.

NO	QUESTIONS	CODING CATEGORIES	SKIPS
1010	What month and year did you <u>first</u> start taking ARVs? DO NOT READ; PROBE TO VERIFY DATE.	CALENDER MONTH _____ DON'T KNOW MONTH = -8 REFUSED MONTH = -9 CALENDER YEAR _____ DON'T KNOW YEAR = -8 REFUSED YEAR = -9	
1011	Are you <u>currently</u> taking ARVs, that is, antiretroviral medications? By currently, I mean that you may have missed some doses but you are still taking ARVs.	YES = 1 NO=2 DON'T KNOW = -8 REFUSED = -9	YES→1013 DK, REFUSED → SKIP TO END OF MODULE
1012	Can you tell me the <u>main</u> reason why you are <u>not</u> currently taking ARVs?	I HAVE TROUBLE TAKING A TABLET EVERYDAY = 1 I HAD SIDE EFFECTS = 2 FACILITY TOO FAR AWAY FOR ME TO GET MEDICINE REGULARLY = 3 COST OF MEDICATIONS = 4 COST OF TRANSPORT = 5 I FEEL HEALTHY/NOT SICK =6 FACILITY WAS OUT OF STOCK = 7 RELIGIOUS REASONS = 8 TAKING TRADITIONAL MEDICATIONS = 9 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	ALL → SKIP TO END OF MODULE ADAPT RESPONSES BASED ON COUNTRY CONTEXT.
1013	People sometimes forget to take all of their ARVs every day. In the last 30 days, how many days have you missed taking any of your ARV pills? DO NOT READ; CODE '00' IF NONE.	NUMBER OF DAYS _____ DON'T KNOW = -8 REFUSED = -9	

MODULE 11: TUBERCULOSIS AND OTHER HEALTH ISSUES			
Interviewer says: "Now we will ask you about tuberculosis or TB."			
1101	Have you ever visited a clinic for TB diagnosis or treatment?	YES = 1 NO=2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → SKIP TO END OF MODULE
1102	Have you ever been told by a doctor, clinical officer or nurse that you had TB?	YES = 1 NO=2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → SKIP TO END OF MODULE ADAPT TERMS FOR HEALTHCARE PROVIDER TO COUNTRY CONTEXT.
1103	Were you <u>ever</u> treated for TB?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → SKIP TO END OF MODULE

NO	QUESTIONS	CODING CATEGORIES	SKIPS
1104	Are you currently on treatment for TB?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	YES →SKIP TO END OF MODULE
1105	The last time you were treated for TB, did you complete at least 6 months of treatment?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	

MODULE 12: GENDER NORMS			
Interviewer says: "Now I would like to ask you questions on attitudes and decision-making in your home."			
1201	Who usually makes decisions about health care for yourself: you, your (spouse/partner), you and your (spouse/partner) together, or someone else?	I DO = 1 SPOUSE/PARTNER = 2 WE BOTH DO = 3 SOMEONE ELSE = 4 DON'T KNOW = -8 REFUSED = -9	SKIP IF NOT MARRIED/LIVING TOGETHER
1202	Who generally decides about how the money you receive is spent? READ ANSWER CHOICES ALOUD.	I DO = 1 SPOUSE/PARTNER = 2 WE BOTH DO = 3 SOMEONE ELSE = 4 DON'T KNOW = -8 REFUSED = -9	SKIP IF NOT MARRIED/LIVING TOGETHER
1203	Who usually makes decisions about making major household purchases: you, your (spouse/partner), you and your (spouse/partner) together or someone else?	I DO = 1 SPOUSE/PARTNER = 2 WE BOTH DO = 3 SOMEONE ELSE = 4 DON'T KNOW = -8 REFUSED = -9	SKIP IF NOT MARRIED/LIVING TOGETHER
1204	Do you believe it is right for a man to hit or beat his wife if she goes out without telling him?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
1205	Do you believe a person should tolerate violence from a spouse/partner to keep the family together?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
1206	Who should decide when to have sex—only the man, only the woman, or the man and woman together?	MEN ONLY = 1 WOMEN ONLY = 2 TOGETHER = 3 DON'T KNOW = -8 REFUSED = -9	
1207	Do you believe women who carry condoms have sex with a lot of men?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
MODULE 13: VIOLENCE			
	Interviewer says: "You have been selected to be asked questions on other important aspects of a person's life. I know that some of these questions are very personal. However, your answers are important for helping to understand the condition of men and women in Lesotho. You will be the only person in your household who is asked these questions. Let me assure you that your answers are completely confidential and will not be told to anyone and no one in your household will know that you were asked these questions. **By sex, I mean vaginal, anal, oral sex or the insertion of an object into your vagina or anus. Vaginal sex is when a penis enters a vagina. Anal sex is when a penis enters an anus (butt). Oral sex is when a partner puts his/her mouth on his/her partner's penis or vagina."**		SELECT ONLY 1 PERSON PER HOUSEHOLD. SHOULD ALWAYS BE LAST MODULE IN QUESTIONNAIRE
1301	How many times in your life has someone <u>pressured</u> you to have sex through harassment, threats and tricks and did succeed? Being pressured can include being worn down by someone who repeatedly asks for sex, feeling pressured by being lied to, being told promises that were untrue, having someone threaten to end a relationship or spread rumors or sexual pressure due to someone using their influence or authority. CODE '00' IF NONE.	NUMBER OF TIMES____ DON'T KNOW = -8 REFUSED = -9	NONE, DK, REFUSED→ END OF MODULE
1302	How old were you the <u>first time</u> someone pressured you to have sex and did succeed?	AGE IN YEARS ____ DON'T KNOW = -8 REFUSED = -9	
1303	In the last 12 months, did someone pressure you to have sex and did succeed?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 1305
1304	What was this person's relationship to you? If it was more than one person, what was your relationship with the person you knew the best?	BOYFRIEND/GIRLFRIEND/LIVE-IN PARTNER/SPOUSE = 1 EX-BOYFRIEND/GIRLFRIEND/PARTNER/SPOUSE = 2 RELATIVE/FAMILY MEMBER = 3 CLASSMATE/SCHOOLMATE = 4 TEACHER = 5 POLICE/SECURITY OFFICER/MILITARY= 6 EMPLOYER = 7 NEIGHBOR = 8 COMMUNITY/ RELIGIOUS LEADER = 9 FRIEND = 10 STRANGER = 11 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	SKIP IF ONLY HAPPENED ONCE.

NO	QUESTIONS	CODING CATEGORIES	SKIPS
1305	How many times in your life have you been physically forced to have sex? CODE '00' IF NONE.	NUMBER OF TIMES ____ DON'T KNOW = -8 REFUSED = -9	NONE, DK, REFUSED→ 1307
1306	How old were you the first time someone physically forced you to have sex?	AGE IN YEARS _____ DON'T KNOW = -8 REFUSED = -9	
1307	In the last 12 months, did someone physically force you to have sex?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	NO, DK, REFUSED → 1309
1308	What was this person's relationship to you? If it was more than one person, what was the relationship with the person you knew the best?	BOYFRIEND/GIRLFRIEND/LIVE-IN PARTNER/SPOUSE = 1 EX-BOYFRIEND/GIRLFRIEND/PARTNER/SPOUSE = 2 RELATIVE/FAMILY MEMBER = 3 CLASSMATE/SCHOOLMATE = 4 TEACHER = 5 POLICE/SECURITY OFFICER/MILITARY= 6 EMPLOYER = 7 NEIGHBOR = 8 COMMUNITY/ RELIGIOUS LEADER = 9 FRIEND = 10 STRANGER = 11 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	SKIP IF ONLY HAPPENED ONCE.
1309	In the last 12 months, did a partner physically force you to have sex? By partner, I mean a live-in partner whether or not you were married at the time.	YES =1 NO, DID NOT FORCE = 2 NO, DID NOT HAVE A LIVE-IN PARTNER IN THE LAST 12 MONTHS = 3 DON'T KNOW = -8 REFUSED = -9	
1310	After any of these unwanted sexual experiences, did you try to seek professional help or services from any of the following? SELECT ALL THAT APPLY.	I DID NOT TRY TO SEEK HELP = A HEALTHCARE PROFESSIONAL = B POLICE OR OTHER SECURITY PERSONNEL = C SOCIAL WORKER, COUNSELOR OR NON-GOVERNMENTAL ORGANIZATION = D RELIGIOUS LEADER = E OTHER = X SPECIFY: _____ DON'T KNOW = Y REFUSED = Z	DID NOT TRY TO SEEK HELP → END OF MODULE SKIP IF NEVER EXPERIENCED SEXUAL VIOLENCE.

NO	QUESTIONS	CODING CATEGORIES	SKIPS
1311	What was the main reason that you did not try to seek professional help or services?	DID NOT KNOW SERVICES WERE AVAILABLE = 1 SERVICES NOT AVAILABLE = 2 AFRAID OF GETTING IN TROUBLE = 3 ASHAMED FOR SELF/FAMILY = 4 COULD NOT AFFORD SERVICES = 5 DID NOT THINK IT WAS A PROBLEM = 6 FELT IT WAS MY FAULT = 7 AFRAID OF BEING ABANDONED = 8 DID NOT NEED/WANT SERVICES = 9 AFRAID OF MAKING SITUATION WORSE = 10 OTHER = 96 SPECIFY: _____ DON'T KNOW = -8 REFUSED = -9	SKIP IF NEVER EXPERIENCED SEXUAL VIOLENCE.
	Thank you for sharing your personal experiences with me. I know it may have been difficult for you to talk about your experiences with me. If you would like to talk further about these experiences, I can refer you to a place that can provide you with help. PROVIDE PARTICIPANT WITH LIST OF ORGANIZATIONS.		SKIP IF NEVER EXPERIENCED SEXUAL OR PHYSICAL VIOLENCE.
	You mentioned earlier that you have sold sex for money. Thank you for sharing your personal experiences with me. If you want to talk further about these experiences, I can refer you to a place that can provide you with help. FILL OUT REFERRAL FORM FOR CHILDREN IDENTIFIED AS TRAFFICKED MINORS. FILL OUT SUMMARY OF REFERRED TRAFFICKED MINORS. PROVIDE PARTICIPANT WITH LIST OF ORGANIZATIONS, IF NOT ALREADY GIVEN.		SKIP IF >18 YEARS OLD SKIP IF NEVER SOLD SEX

APPENDIX G YOUNG ADOLESCENT QUESTIONNAIRE

THIS QUESTIONNAIRE IS ADMINISTERED TO ELIGIBLE YOUNG ADOLESCENTS AGED BETWEEN 10-14 YEARS AFTER INFORMED PARENTAL/GUARDIAN CONSENT AND MINOR ASSENT.

NO	QUESTIONS	CODING CATEGORIES	SKIPS
MODULE 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS			
101	IS THE RESPONDENT MALE OR FEMALE?	MALE =1 FEMALE =2	
102	How old were you at your last birthday?	AGE IN COMPLETED YEARS=integer DON'T KNOW AGE =-8 REFUSED =-9	
103	Are you enrolled in school?	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	IF NO, DK, REFUSED→109
104	During the last school week, did you miss any school days for any reason?	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	NO, DK, REFUSED →107
105	Why did you miss school?	I HAVE BEEN SICK=1 I DON'T FEEL SAFE TRAVELING TO SCHOOL=2 I DON'T FEEL SAFE WHILE IN SCHOOL=3 I DON'T LIKE SCHOOL=4 I HAVE TO LOOK AFTER MY FAMILY=5 THERE'S NOT ENOUGH MONEY TO SEND ME TO SCHOOL =6 SCHOOL IS TOO FAR AWAY=7 I HAVE TO WORK=8 I HAVE A CHILD OR I AM PREGNANT =9 I MISSED TOO MUCH SCHOOL BECAUSE OF MY PERIOD (MENSTRUATION) =10 OTHER (SPECIFY)=96 DON'T KNOW=-8 REFUSED =-9	
106	What is the highest level of school you attended: primary or secondary?	PRIMARY = 1 SECONDARY = 2 DON'T KNOW = -8 REFUSED = -9	
107	What standard/form/year are you in now?	STANDARD/FORM/YEAR ____ DON'T KNOW = -8 REFUSED = -9	
NO	**QUESTIONS**	**CODING CATEGORIES**	**SKIPS**
108	What standard/form/year were you in last year?	STANDARD/FORM/YEAR ____ DON'T KNOW = -8 REFUSED = -9	ALL→MODULE 2, HIV PREVENTION INTERVENTIONS

109	Why do you NOT go to school?	I HAVE BEEN SICK = 1 I DON'T FEEL SAFE TRAVELING TO SCHOOL = 2 I DON'T FEEL SAFE WHILE IN SCHOOL = 3 I DON'T LIKE SCHOOL = 4 I HAVE TO LOOK AFTER MY FAMILY= 5 THERE'S NOT ENOUGH MONEY TO SEND ME TO SCHOOL = 6 SCHOOL IS TOO FAR AWAY = 7 I HAVE TO WORK = 8 I HAVE A CHILD OR I AM PREGNANT (GIRLS ONLY) = 9 I MISSED TOO MUCH SCHOOL BECAUSE OF MY PERIOD (MENSTRUATION) (GIRLS ONLY) = 10 OTHER (SPECIFY) = 96 DON'T KNOW = -8 REFUSED = -9	
110	Have you **ever** attended school?	YES = 1 NO = 2 DON'T KNOW =-8 REFUSED = -9	NO, DK, REFUSED→ADHIVPREV
111	When was the last time you regularly attended school? Would you say it was less than a year ago or more than a year ago?	LESS THAN 1 YEAR = 1 1 YEAR OR LONGER = 2 DON'T KNOW =-8 REFUSED = -9	
112	What is the highest standard/form/year that you have completed?	STANDARD/FORM/YEAR ____ DON'T KNOW = -8 REFUSED = -9	

MODULE 2: HIV PREVENTION INTERVENTIONS			
Interviewer says: "Now I would like to ask you some questions about what you know about health."			
201	Have you ***ever*** heard of HIV?	YES =1 NO =2 DON'T KNOW =-8 REFUSED = -9	IF NO, DK, REFUSED→207
202	From where have you heard about HIV? PROBE: "Anywhere else?" RECORD ALL MENTIONED	SCHOOLS / TEACHERS =A PARENTS / GUARDIAN / FAMILY =B FRIENDS =C RELIGIOUS LEADERS =D INTERNET =E MOBILE PHONE =F HEALTH PROVIDERS / DOCTORS / NURSES / CLINICAL OFFICERS =G TELEVISION / FILM =H RADIO =I COMMUNITY HEALTH WORKERS =J OTHER (SPECIFY) =X DON'T KNOW =Y REFUSED =Z	
NO	**QUESTIONS**	**CODING CATEGORIES**	**SKIPS**

204	Which HIV prevention measures have you heard of? DO NOT READ ANSWER ALOUD, LET PARTICIPANT GIVE ANSWERS AND IF THEY ARE UNABLE TO, PROBE.	ABSTINENCE = A BEHAVIOR CHANGE/FAITHFUL TO ONE PARTNER = B CONDOMS = C PMTCT = D PRE- AND POST-EXPOSURE PROPHYLAXIS = E SAFE BLOOD = F CIRCUMCISION = G OTHER (SPECIFY) = H DON'T KNOW = Y	
205	How did you hear about the prevention measures? PROBE: "Anywhere else?" RECORD ALL MENTIONED	SCHOOLS/TEACHERS = A PARENTS/GUARDIAN/FAMILY = B FRIENDS = C RELIGIOUS LEADERS = D INTERNET = E MOBILE PHONE = F HEALTH PROVIDERS/DOCTORS/NURSES/CLINICAL OFFICERS = G TELEVISION/FILM = H RADIO = I COMMUNITY HEALTH WORKERS = J OTHER (SPECIFY) = X DON'T KNOW = Y REFUSED = Z	
206	Do you know what a condom is?	YES =1 NO =2 REFUSED =-9	NO, REFUSED →301
207	Do you know where to get a condom?	YES = 1 NO = 2 REFUSED = -9	NO, REFUSED →211 DK →301
208	Where can a person go to get a condom? SELECT ALL THAT APPLY	CLINIC/HOSPITAL = A KIOSK/SHOP = B PHARMACY = C LOCAL FREE DISPENSER = D FRIENDS/PEERS = E BOYFRIEND/GIRLFRIEND = F OTHER (SPECIFY) = X DON'T KNOW = Y REFUSED = Z	
209	If you wanted to, could you yourself get a condom?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	YES, DK, REFUSED →211
210	Why is it not easy for you to get a condom? SELECT ALL THAT APPLY.	TOO FAR = A COSTS TOO MUCH = B DO NOT WANT OTHERS TO KNOW = C OTHER (SPECIFY) = X DON'T KNOW = Y REFUSED = Z	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
211	Have you ***ever*** seen a male condom demonstration? By a condom demonstration, I mean someone like a nurse, peer educator, or another trained adult showed you how a male condom is correctly used.	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	

MODULE 3: SEXUAL BEHAVIOR			
Interviewer says: "The next questions ask about sexual behavior. There is no right or wrong answer. Your responses will not			
DO NOT READ: PLEASE LOOK OUT FOR SIGNS OF DISTRESS IN CHILD WHEN ASKING THE FOLLOWING SEXUAL BEHAVIOR			
301	Do you know what sex is?	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	IF AGE <13 & RESPONSE = NO, DK, REFUSED→ 501
302	Have you ever had vaginal, anal or oral sex? Vaginal sex is when a penis enters a vagina. Anal sex is when a penis enters an anus. Oral sex is when a person puts his/her mouth on the penis or vagina of another person. SELECT ALL THAT APPLY.	NEVER HAD SEX = A VAGINAL = B ANAL = C ORAL = D DON'T KNOW = Y REFUSED = Z	NEVER, DK, REFUSED→ 501
303	How old were you when you had sex for the first time?	AGE IN YEARS =integer DON'T KNOW AGE =-8 REFUSED =-9	
304	The first time you had sex, was it because you wanted to or because you were forced?	WANTED TO =1 FORCED =2 DON'T KNOW =-8 REFUSED =-9	WANTED, DK, REFUSED →306
305	The first time you had sex, were you physically forced or were you pressured into having sex through harassment, threats or tricks?	PHYSICALLY FORCED =1 PRESSURED =2 DON'T KNOW =-8 REFUSED =-9	ALL →307
306	What was the main reason that you had sex for the first time?	IT JUST HAPPENED =1 MY FRIENDS PRESSURED ME TO HAVE SEX =2 TO SHOW MY LOVE / TO FEEL LOVED =3 I WANTED TO HAVE SEX =4 MY BOYFRIEND / GIRLFRIEND WANTED TO HAVE SEX =5 FOR MONEY / GIFTS =6 I WANTED TO HAVE A BABY =7 OTHER (SPECIFY) =96 DON'T KNOW =-8 REFUSED =-9	
307	How old was the person you first had sex with? Please give your best guess.	AGE IN YEARS =integer DON'T KNOW AGE =-8 REFUSED =-9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
308	The first time you had sex, was a condom used?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	SKIP IF DON'T KNOW WHAT CONDOM IS
309	In your lifetime, how many different people have you had sex with? Please give your best guess.	NUMBER OF PARTNERS =integer DON'T KNOW =-8 REFUSED =-9	
310	The last time you had sex was a condom used?	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	SKIP IF DON'T KNOW WHAT CONDOM IS
311	How often do you use a condom during sex?	ALWAYS = 1 SOMETIMES = 2 NEVER = 3 DON'T REMEMBER = 4 DON'T KNOW = -8 REFUSED = -9	SKIP IF DON'T KNOW WHAT CONDOM IS
312	Have you ever had sex with someone because he/she provided you with, or you expected that he/she would provide you with gifts, help you to pay for thing or help you in other ways such as giving you food or paying for school fees?	YES =1 NO =2 DON'T KNOW=-8 REFUSED =-9	
313	Have you ever been pregnant?	YES =1 NO =2 DON'T KNOW=-8 REFUSED =-9	GIRLS ONLY
314	Have you ever talked with a parent or guardian about sexual intercourse?	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	

MODULE 4: SOCIAL NORMS, INTENTION TO ABSTAIN, SELF-EFFICACY AND ASSERTIVENESS			
Interviewer says: "Now I would like to ask you some questions about social norms."			
401	Do you feel pressured by your boyfriend/girlfriend to have sex?	YES = 1 NO = 2 DON'T HAVE BOYFRIEND/GIRLFRIEND=3 DON'T KNOW = -8 REFUSED = -9	SKIP IF 301=NO, DK, REFUSED
402	Do you feel pressured by your friends to have sex?	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	SKIP IF 301=NO, DK, REFUSED
403	If you did not want to have sex with someone, could you tell them that you do not want to have sex with them?	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	SKIP IF 301=NO, DK, REFUSED

NO	QUESTIONS	CODING CATEGORIES	SKIPS
MODULE 5: HIV RISK PERCEPTIONS			
501	How likely do you think it is for you to get HIV?	VERY LIKELY =1 SOMEWHAT LIKELY=2 NOT LIKELY =3 I ALREADY HAVE HIV =4 DON'T KNOW =-8 REFUSED =-9	IF NOT LIKELY, I HAVE HIV, DK, REFUSED→503 SKIP IF 201 =NO, DK, REFUSED
502	What is the ***main*** reason you think you are likely to get HIV?	I HAVE HAD SEX WITHOUT A CONDOM =1 I HAVE OR HAD MANY BOY/GIRLFRIENDS =2 I HAVE HAD BLOOD TRANSFUSIONS =3 MY MOTHER/FATHER/CLOSE RELATIVE HAS HIV =4 I DON'T TRUST MY BOY/GIRLFRIEND =5 I AM SICK =6 MY BOY/GIRLFRIEND IS SICK OR HAS DIED =7 I DESERVE IT / I AM A BAD PERSON =8 OTHER (SPECIFY) =96 DON'T KNOW =-8 REFUSED =-9	SKIP IF 201 =NO, DK, REFUSED ALL → NEXT MODULE
503	What is the ***main*** reason you think you are not likely to get HIV?	I AM ABSTINANT =1 I WILL WAIT UNTIL MARRIAGE TO HAVE SEX=2 I ALWAYS USE CONDOMS=3 I TRUST MY PARTNER=4 I HAVE ONLY ONE PARTNER=5 I GO TO CHURCH =6 I AM A GOOD PERSON =7 OTHER (SPECIFY) = 96 DON'T KNOW = -8 REFUSED = -9	SKIP IF 201 = NO, DK, REFUSED

MODULE 6: HIV KNOWLEDGE			
Interviewer says: "Now I would like to ask you some questions about what you know." about some things related to health."			SKIP TO NEXT MODULE IF 201 = NO, DK, REF
601	Can a person reduce their chance of getting HIV by not having sex?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
602	Can a person reduce their chance of getting HIV by using condoms when having sex?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
603	Can a healthy-looking person have HIV or AIDS?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
604	Can a mother with HIV or AIDS pass HIV to her unborn baby?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
605	Are there medicines that people with HIV or AIDS can take to help them live longer?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
606	Can male circumcision help prevent HIV infection? Circumcision is the removal of the foreskin from a penis.	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
607	Can ARVs make people with HIV less likely to spread the virus?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	
608	Can ARVs can rid HIV from an HIV-positive person's body?	YES = 1 NO = 2 DON'T KNOW = 3 REFUSED = -9	

MODULE 7: HIV TESTING			
Interviewer says: "I would now like to ask you some questions about HIV testing."			SKIP TO NEXT MODULE IF 201 = NO, DK, REF
701	To what extent do you agree with the following statement: Everyone should get tested for HIV? Do you strongly agree, agree, disagree, or strongly disagree?	STRONGLY AGREE = 1 AGREE = 2 DISAGREE = 3 STRONGLY DISAGREE = 4 DON'T KNOW = -8 REFUSED = -9	
702	To what extent do you agree with the following statement: Only persons who think they might have HIV should get an HIV test. Do you strongly agree, agree, disagree, or strongly disagree?	STRONGLY AGREE = 1 AGREE = 2 DISAGREE = 3 STRONGLY DISAGREE = 4 DON'T KNOW = -8 REFUSED = -9	
703	Have you ***ever*** been tested for HIV?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DK, REFUSED →901
704	Did you receive the results of any of your HIV tests?	YES =1 NO =2 DON'T KNOW=-8 REFUSED =-9	IF NO, DK, REFUSED →901
705	What was the result of that HIV test?	HIV POSITIVE = 1 HIV NEGATIVE = 2 UNKNOWN/DON'T KNOW = 3 REFUSED = -9	IF HIV NEGATIVE, UNKNOWN, REFUSED →901

NO	QUESTIONS	CODING CATEGORIES	SKIPS
706	Are you currently on treatment for HIV? By on treatment, we mean are you taking any drugs to prevent or treat any opportunistic infections or ARVs.	YES =1 NO =2 DON'T KNOW=-8 REFUSED =-9	

MODULE 8: HIV STIGMA			
Interviewer says: "Now I would like to ask you some more questions about HIV."			SKIP TO NEXT MODULE IF 201=NO, DK, REFUSED
801	Would you be willing to share food with someone who has HIV?	YES =1 NO =2 DON'T KNOW=-8 REFUSED =-9	
802	Would you be friends with someone who has HIV?	YES =1 NO =2 DON'T KNOW=-8 REFUSED =-9	
803	Would you be comfortable to have a teacher who has HIV?	YES =1 NO =2 DON'T KNOW=-8 REFUSED =-9	

MODULE 9: ALCOHOL AND DRUGS			
Interviewer says: "I would like to ask you some questions about alcohol and drugs or substances that you may have taken that were not given to you by doctor. Your answers will not be told to anyone, even your parents. You can choose not to answer any of these questions."			
901	Have you ***ever*** had alcohol, for example beer? DO NOT READ: SHOW CHILD GRAPHIC IF HE OR SHE IS UNSURE	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	IF NO, DK, REFUSED →903 SHOW GRAPHIC OF COMMON ALCOHOLIC BEVERAGES
902	During the past 1 month, on how many days did you have at least one drink containing alcohol?	NUMBER OF DAYS =integer DON'T KNOW =-8 REFUSED =-9	
903	Have you ***ever*** tried drugs such as DAGA, COCAINE or others?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DK, REFUSED →801 ADAPT QUESTION TO LOCAL CONTEXT
904	What drugs have you ***ever*** tried? DO NOT READ: DO NOT READ RESPONSES. PROBE FOR MULTIPLE RESPONSES. RECORD ALL MENTIONED	DAGA= A COCAINE = B OTHER = X SPECIFY: _____ DON'T KNOW = Y REFUSED = Z	

NO	QUESTIONS	CODING CATEGORIES	SKIPS
MODULE 10: PARENTAL SUPPORT			
1001	Do your parents/guardians understand your problems and worries?	ALWAYS = 1 MOST OF THE TIME = 2 SOMETIMES = 3 RARELY = 4 NEVER = 5 DON'T KNOW = -8 REFUSED = -9	
1002	Do your parents/guardians really know what you were doing with your free time when you were not at school or work?	ALWAYS =1 MOST OF THE TIME =2 SOMETIMES =3 RARELY =4 NEVER =5 DON'T KNOW =-8 REFUSED =-9	
MODULE 11: VIOLENCE			
Interviewer says: "Now I would like to ask you questions about some other important aspects of a person's life. I know that some of these questions are very personal. However, your answers are important for helping to understand the condition of children in Lesotho. Let me assure you that your answers are completely confidential and will not be told to anyone. You can choose not to answer any of these questions."			
1101	Has anyone ***ever*** done any of these things to you: - Punched, kicked, whipped, or beat you with an object such as a stick - Choked smothered, tried to drown you, or burned you intentionally - Used or threatened you with a knife, gun or other weapon?	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	
1102	Has anyone ***ever*** touched your [penis or buttock, vagina, buttock, or breast] when you did not want them to? This could be pinching, grabbing, or touching you on or around your [penis or buttock, vagina, buttock, or breast].	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	
1103	Has anyone ***ever*** touched you in a sexual way without your permission, but did not try and force you to have sex? Touching in a sexual way without permission includes fondling, pinching, grabbing, or touching you on or around your sexual body parts.	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	IF NO, DK, REFUSED →1105

NO	QUESTIONS	CODING CATEGORIES	SKIPS
1104	The ***first*** time this happened, what was your relationship to the person who did this? If it was more than one person, what was your relationship with the person you knew the best?	BOYFRIEND / GIRLFRIEND / SPOUSE=1 RELATIVE / FAMILY MEMBER=2 CLASSMATE / SCHOOLMATE=3 TEACHER=4 POLICE / SECURITY / OFFICER / MILITARY=5 EMPLOYER=6 NEIGHBOR=7 COMMUNITY RELIGIOUS LEADER=8 FRIEND=9 STRANGER=10 OTHER (SPECIFY) =96 DON'T KNOW =-8 REFUSED =-9	
1105	Has anyone ***ever*** tried to make you have sex against your will but did not succeed?	YES =1 NO =2 DON'T KNOW=-8 REFUSED =-9	
1106	Has anyone ***ever*** pressured you to have sex, through harassment, threats or tricks and did succeed?	YES =1 NO =2 DON'T KNOW=-8 REFUSED =-9	
1107	Has anyone ***ever*** physically forced you to have sex and did succeed?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
1108	The ***first*** time you were pressured or forced to have sex, what was your relationship to the person who did this?	BOYFRIEND / GIRLFRIEND / SPOUSE =1 RELATIVE / FAMILY MEMBER =2 CLASSMATE / SCHOOLMATE =3 TEACHER =4 POLICE / SECURITY OFFICER / MILITARY =5 EMPLOYER =6 NEIGHBOR =7 COMMUNITY RELIGIOUS LEADER =8 FRIEND =9 STRANGER =10 OTHER (SPECIFY) =96 DON'T KNOW =-8 REFUSED =-9	SKIP IF 1106= NO, DK, REFUSED AND 1107 = NO, DK, REFUSED
1109	After any of these unwanted sexual experiences, did you try to seek professional help or services from any of the following? SELECT ALL THAT APPLY.	I DID NOT TRY TO SEEK HELP = A HEALTHCARE PROFESSIONAL = B POLICE OR OTHER SECURITY PERSONNEL = C SOCIAL WORKER, COUNSELOR OR NGO = D RELIGIOUS LEADER = E OTHER (SPECIFY) = X DON'T KNOW = Y REFUSED = Z	ALL BUT I DID NOT TRY TO SEEK HELP→ 1111 SKIP IF 1103 = NO, DK, REFUSED & 1105 = NO, DK, REFUSED & 1106 = NO, DK, REFUSED, & 1107 = NO, DK, REFUSED

NO	QUESTIONS	CODING CATEGORIES	SKIPS
1110	What was the main reason that you did not try to seek professional help or services?	DID NOT KNOW SERVICES WERE AVAILABLE =1 SERVICES NOT AVAILABLE =2 AFRAID OF GETTING IN TROUBLE =3 ASHAMED FOR SELF/FAMILY =4 COULD NOT AFFORD SERVICES =5 DID NOT THINK IT WAS A PROBLEM =6 FELT IT WAS MY FAULT =7 AFRAID OF BEING ABANDONED =8 DID NOT NEED/WANT SERVICES =9 OTHER (SPECIFY) =96 DON'T KNOW =-8 REFUSED =-9	
1111	After any of these unwanted sexual experiences, did you tell anyone about it?	YES =1 NO =2 DON'T KNOW =-8 REFUSED =-9	NO, DK, REFUSED→END
1112	Which of the following describes who you told about any of these unwanted sexual experiences? READ RESPONSES ALOUD. SELECT ALL THAT APPLY	PARENT/GUARDIAN = A SIBLING = B TEACHER = C FRIEND/CLASSMATE = D POLICE OR OTHER SECURITY PERSONNEL = E SOCIAL WORKER, COUNSELOR OR NGO = F OTHER FAMILY MEMBER = G RELIGIOUS LEADER = H OTHER (SPECIFY) = X DON'T KNOW = Y REFUSED = Z	
SKIP IF NEVER EXPERIENCED SEXUAL OR PHYSICAL VIOLENCE			
COMMENT	DO NOT READ: COMMENTS FROM INTERVIEWER		

APPENDIX H CONSENT FORMS

Consent for Household Interview

Interviewer reads:

Hello. My name is_____. I would like to invite you to take part in this research study about HIV in Lesotho. The Ministry of Health is leading this survey and is conducting it with the United States Centers for Disease Control and Prevention and ICAP at Columbia University and the ICAP in Lesotho.

What language do you prefer for our discussion today?

___English

___Sesotho

Title of Survey: This survey is called the **Lesotho Population-Based HIV Impact Assessment** (LePHIA, 2016-2017)

Purpose of survey
This survey will help us know how many people in Lesotho have HIV and need health services. It will also tell us about people's risk for getting HIV. We plan to ask about 12,698 people, ages 15-59 years and 4,222 children, ages 0-14 years from 10,450 households to join this survey. If you join, your taking part will help Lesotho Ministry of Health make health services better in the country.

This form might have some words in it that are not familiar to you. Please ask us to explain anything that you do not understand.

Survey Procedures
There are two parts to this survey– a household interview and individual interviews. In the household interview, we would like to ask you some questions about the people who live here and some of the things you have or own. The interview will take up to 30 minutes.

After the household interview, we will invite you and others living in your household to take part in individual interviews. The interview will take about 40 minutes. We will also offer an HIV test after the interview. We will ask each person to give permission to take part before joining the survey.

Right to refuse or withdraw
You do not have to take part in the survey. If you choose to join the survey, you may change your mind at any time and stop taking part. If you decide not to take part, or if you decide to stop, it will not affect your health care in any way.

Risks and Benefits

The risks of taking part in the household interview are small. You may feel uncomfortable about some of the questions we will ask. You can refuse to answer any question. We will do everything we can to keep your information private. We cannot guarantee total confidentiality. If you take part, you and your household members will get free testing for HIV in your own home. The information you provide will also be used to improve the health of Lesotho. Your responses will help us develop more effective programs to fight HIV and other diseases in Lesotho.

1. There is no cost to you for being part of the survey except for your time. You will not be paid.

Confidentiality and Access to Your Health Information

What we talk about will be kept private, even from your family, and will not be shown to anyone outside of the survey team. Your answers to the questions will be identified only by a number and not your name Your name or any other identifying information will not appear on any survey results that we share with Ministry of Health, the public, or publish or present at scientific meetings. The information we collect during the survey will not be released outside of the survey groups listed unless there is an issue of safety.

The following individuals and/or agencies will be able to look at your interview records to help oversee the conduct of this survey:

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this survey to ensure that we are protecting your rights as a person in a research study. These include The Ministry of Health Research and Ethics Committee and the Institutional Review Boards at the Centers for Disease Control and Prevention (CDC; Atlanta, USA), Columbia University Medical Center and Westat (a statistical survey research organization)
- The U.S. Office of Human Research Protections and other government agencies that oversee the safety of human subjects to ensure we are protecting your rights as a person taking part in this survey
- Study staff and study monitors

Your permission to allow us to use and share your information with the groups above will expire immediately after the end of the study. If you want to leave the study, have any questions about the survey, feel that you have been harmed by taking part , you should contact the Principal Investigator:

Dr. Mosilinyane Letsie
Address: Ministry of Health
P.O. Box 514, Maseru 100, Lesotho
Phone: +266 58870982
Email: lmosilinyane@yahoo.com

If you have any questions about your rights as a participant in this survey, you can contact:

Me' Masebeo Koto
Address: Ministriy of Development Planning
Department of Planning and Statistics
P.O. Box 630, Maseru 100, Lesotho
Email: kotomasebeo@gmail.com

Phone:+266 63066403

Do you want to ask me anything about the survey?

Consent Statement

Any questions that I had have been answered satisfactorily. I have been offered a copy of this consent form.

Do you agree to do the household interview? 'YES' means that you agree to do the interview. 'NO' means that you will NOT do the interview.

_____Yes _____No

Head of household signature or mark_____ Date: ___/___/___

Printed name of head of household_____

Household ID number _____

[For illiterate participants]

Signature of witness_____ Date: ___/___/___

Printed name of witness_____

Signature of person obtaining consent_____ _____ Date: ___/___/___

Printed name of person obtaining consent_____

Survey staff ID number _____

Consent for Interview: Adults aged 18-59 years and Emancipated Minors aged 15-17 years

Interviewer reads:

[IF PARTICIPANT HAS BEEN THROUGH HOUSEHOLD CONSENT]

Hello. My name is_____.

Survey Procedures
We plan to ask about 12,698 people, ages 15-59 years and 4,222 children, ages 0-14 years from 10,450 households to join this survey. If you join us for this portion of the survey, we will ask you questions about your health, whether you have had any experience with HIV services, and your behavior. The interview will take about 40 minutes.

After the interview, we will offer you an HIV test. We will ask you for consent for the blood draw and HIV test after the interview. The testing and counseling session will also take about 40 minutes. You may agree to the interview without agreeing to give your blood.

Right to refuse or withdraw
You do not have to take part in this interview, you may change your mind at any time and stop taking part. If you decide not to take part, or if you decide to stop, it will not affect your health care in any way.

2. Confidentiality and access to your health information

3. We will do everything we can to keep your taking part in the survey private. However, we cannot promise complete confidentiality.

4.

5. You can contact Dr. Mosilinyane Letsie should you have any questions or concerns.

→ GO TO CONSENT STATEMENT

[IF PARTICIPANT HAS NOT BEEN THROUGH HOUSEHOLD CONSENT]

What language do you prefer for our discussion today?

___English

___Sesotho

___Other Language: Specify _____

Hello. My name is_____. We are doing a research study throughout Lesotho to learn more about HIV in the country. The Ministry of Health is leading this survey and is conducting it with the United States Centers for Disease Control and Prevention and ICAP at Columbia University and the ICAP in Lesotho.

Consent for Individual Interview 18-59 and Emancipated Minors 15-17

Title of Survey: This survey is called the **Lesotho Population-Based HIV Impact Assessment** (LePHIA, 2016-2017)

Purpose of the survey

This survey will help us know how many people in Lesotho have HIV and need health services. It will also tell us about people's risk for getting HIV. We plan to ask about 12,698 men, women, and children from 10,450 households throughout Lesotho to take part in this survey. If you join, your taking part will help the Ministry of Health make health services better in the country.

This form might have some words in it that are not familiar to you. Please ask us to explain anything that you do not understand.

Survey Procedures

If you join this survey, we will ask you questions about your age, whether you have had any experience with HIV services, and your behavior. The interview will take about 40 minutes.

After the interview, we will offer you an HIV test. We will ask you for consent for the blood draw and blood draw and talk to you about your results. The testing and counseling session will take about 40 minutes. **You may agree to the interview without agreeing to give your blood.**

Right to refuse or withdraw

You do not have to take part in the survey. If you choose to join the survey, you may change your mind at any time and stop taking part. If you decide not to take part, or if you decide to stop, it will not affect your healthcare in any way. If you do not wish to participate in the study you may still request HIV testing and counselling, pending the availability of supplies.

Risks and benefits

The risks in being in the survey are small. We will do everything we can to keep your information private. However, we cannot promise complete confidentiality. You may feel uncomfortable about some of the questions we will ask. You can refuse to answer any question. If you take part, you will get free testing for

HIV in your own home. The information you provide will also be used to improve the health of Lesotho. Your responses will help us develop more effective programs to fight HIV and other diseases in Lesotho.

6. There is no cost to you for being part of the survey except for your time. You should also know that you will not be paid.

Confidentiality, Privacy and Access to Your Health Information

What we talk about will be kept private, even from your family, and will not be shown to anyone outside of the survey team. Your answers to the questions will be identified only by a number and not your name. Your name or any other identifying information will not appear on any survey results that we share with Ministry of Health, the public, or publish or present at scientific meetings. The information we collect during the survey will not be released outside of the survey groups listed unless there is an issue of safety.

The following individuals and/or agencies will be able to look at your research records to help oversee the conduct of this survey:

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this survey to ensure that we are protecting your rights as a person in a research study. The Research and Ethics Committee and the Institutional Review Boards at the Centers for Disease Control and Prevention (CDC; Atlanta, USA), Columbia University Medical Center and Westat (a statistical survey research organization)
- The U.S. Office of Human Research Protections and other government agencies that oversee the safety of human subjects to ensure we are protecting your rights as a person taking part in this survey
- Study staff and study monitors

Your permission to allow us to use and share your information with the groups above will expire immediately after the end of the study. If you want to leave the study, have any questions about the survey, or feel that you have been harmed by taking part, you should contact the Principal Investigator:

Dr. Mosilinyane Letsie
Address: Ministry of Health
P.O. Box 514, Maseru 100, Lesotho
Phone: +266 58870982
Email: lmosilinyane@yahoo.com

If you have any questions about your rights as a participant in this survey, you can contact:

Masebeo Koto
Address: Department of Planning and Statistics
Email: kotomasebeo@gmail.com
Phone:+266 63066403

Do you want to ask me anything about the survey?

Consent Statement

Any questions that I had were answered satisfactorily. I have been offered a copy of this consent form.

7. Do you agree to do the interview? 'YES' means that you agree to do the interview. 'NO' means that you will NOT do the interview.
   _____Yes _____No

Participant signature or mark_____ Date: ___/___/___

Printed name of participant_____

Participant ID number _____

[For illiterate participants]

Signature of witness_____ Date: ___/___/___

Printed name of witness_____

Signature of person obtaining consent_____ _____ Date: ___/___/___

Printed name of person obtaining consent_____

Survey staff ID number _____

Consent for Blood Draw: Adults, ages 18-59 years and Emancipated Minors, ages 15-17 years

Interviewer Reads:

My colleague is _____, who is a nurse trained in drawing blood. He/she will also be providing you with information about testing options in this survey.

We plan to ask about 12,698 people, ages 15-59 years and 4,222 children, ages 0-14 years from 10,450 households to join this survey. As a part of this survey, we are giving those taking part an opportunity to learn about their HIV status. We are also asking people if we can use their blood later in the laboratory for future testing.

Blood draw and HIV testing procedures

If you agree to the HIV testing and blood draw, we will take a small amount of blood from your arm, 14 mL (about a tablespoonful). If it is not possible to take blood from your arm, then we will try to take a few drops of blood from your finger. We will give you the results and provide counseling today. The testing and counseling session will take about 40 minutes.

If you test positive for HIV, we will measure the amount of CD4 cells in your blood which measures how well your body can fight HIV infections and other diseases. We will also test the CD4 of some people without HIV. You will get your CD4 result today. We will also send your blood to a laboratory to measure your viral load which measures the amount of HIV in your blood. We will send your viral load result to a health facility in about six to twelve weeks from now. We will give you a referral form and information so that you can consult a nurse or doctor to learn more about your HIV, CD4, and viral load test results and your health.

We will also do other additional tests related to HIV. If we have test results that might help guide your care or treatment, we will contact you to tell you how you and your doctor or nurse may get these results.

Storage of specimens

We would also like your permission to store your leftover blood for future research tests. These tests may be about health issues important in Lesotho, such as nutrition or immunization. This will help improve the health of the people of Lesotho. This sample will be stored using a unique ID number for up to five (5) years after study completion but your name will be removed from the sample immediately. Only survey staff will be able to link your sample to your contact information. We will attempt to tell you about any test results during the five (5) year period that are important for your health. Your leftover blood will not be sold or used for commercial reasons. If you do not agree to long-term storage of your blood samples, we will destroy your blood samples after survey-related testing has been completed.

Right to refuse or to withdraw

You do not have to give blood and you are free to change your mind even after you have started the blood draw. If you decide not to take part, or if you decide to stop, it will not affect your healthcare in any way. If you do not wish to participate in the study you may still request HIV testing and counselling, pending the availability of supplies.

Risks

The risks in drawing blood are very small. They include brief pain from the needle stick, bruising, lightheadedness, bleeding, and rarely, infection where the needle enters the skin. If you have any discomfort, bleeding or swelling at the site, please contact the study staff. You may learn that you are infected with HIV. Learning that you have HIV can cause some emotional discomfort. You will receive counselling on how to cope with learning that you are HIV positive. We will also tell you where you can go for care and treatment, which is provided by the Ministry of Health for free. We will do everything we can to keep your test results private, but we cannot guarantee total confidentiality.

Benefits

The main benefit for you to be in the survey is the chance to learn more about your health today. If you test HIV-negative, you will learn about what you can do to stay HIV-negative. If you test HIV-positive, you will learn your HIV status and where to go for treatment. If you already know that you are HIV-positive and you are on HIV treatment, the CD4 and viral load tests can help your nurse or doctor judge how well your treatment is working. Your taking part in this research could help us learn more about HIV in Lesotho and how HIV prevention and treatment programs are working.

Confidentiality, Privacy and Access to Your Health Information

The blood we collect from you will be identified by a number and not by your name. This means that besides you, no one else will be able to know your test results except the people working on the survey. Your name or any other identifying information will not appear on any survey results that we share with Ministry of Health, the public, or publish or present at scientific meetings. The information we collect during the survey will not be released outside of the survey groups listed unless there is an issue of safety.

[*INTERVIEWER: PROVIDE THE FOLLOWING INFORMATION SHEET TO THE PARTICIPANT- DO NOT READ ALOUD]*

The following individuals and/or agencies will be able to look at your research records to help oversee the conduct of this survey:

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this survey to ensure that we are protecting your rights as a person taking part in a research study. These include the Research and Ethics Committee and the Institutional Review Boards at the Centers for Disease Control and Prevention (CDC; Atlanta, USA), Columbia University Medical Center and Westat (a statistical survey research organization)

- The U.S. Office of Human Research Protections and other government agencies that oversee the safety of human subjects to ensure we are protecting your rights as a person taking part in this survey
- Study staff and study monitors

Your permission to allow us to use and share your information with the groups above will expire immediately after the end of the study. If you want to leave the study, have any questions about the survey, or feel that you have been harmed by taking part, you should contact the Principal Investigator:

Dr. Mosilinyane Letsie
Address: Ministry of Health
P.O. Box 514, Maseru 100, Lesotho
Phone: +266 58870982
Email: lmosilinyane@yahoo.com

If you have any questions about your rights as a participant in this survey, you can contact:

Me' Masebeo Koto
Address: Ministriy of Development Planning
Department of Planning and Statistics
P.O. Box 630, Maseru 100, Lesotho
Email: kotomasebeo@gmail.com
Phone:+266 63066403

Do you want to ask me anything about:

- Taking your blood for HIV testing?
- Testing in the laboratory?
- Storage of blood for future research testing?

Consent Statement

Any questions that I had were answered satisfactorily. I have been offered a copy of this consent form.

1. Do you agree to give blood for HIV testing and related testing? 'YES' means that you agree to give blood for HIV testing and related testing. 'NO' means that you will NOT give blood for HIV testing and related testing.
   _____Yes _____No
   (If "Yes" proceed to the next question)
2. Do you agree to have your leftover blood stored for future research? 'YES' means that you agree to have these blood samples stored for future testing. 'NO' means that these blood samples will NOT be stored for future research.
   _____Yes _____No

Participant signature or mark_____ Date: ___/___/___

Printed name of participant_____

Participant ID number _____

[For illiterate participants]

Signature of witness_____ Date: ___/___/___

Printed name of witness_____

Signature of person obtaining consent_____ _____ Date: ___/___/___

Printed name of person obtaining consent_____

Survey staff ID number _____

Parental Consent/Permission for Interview and/or Blood Draw for Minors, ages 0-17 years

Interviewer Reads:

[IF PARENT/GUARDIAN HAS BEEN THROUGH CONSENT PROCESS FOR BLOOD DRAW]

Now I would like to ask you to give us permission for your children to take part in the survey. We will ask about 12,698 people, ages 15-59 years and 4,222 children, ages 0-14 years from 10, 450 households to join this survey. Your consent is all that is required for your 0-11 year old children to take part in the survey. If your children are between the ages of 12 to 17, we will also ask your son/daughter to agree to take part in the survey. Your children's taking part will help the Lesotho Ministry of Health make health services for children and young people better in Lesotho.

Survey Procedures

Interview Procedures

We will ask your 10-17 year old child to do an interview with us in private to learn what your child knows about HIV and about your child's behaviors that may put him or her at risk for HIV. Children under 10 years of age will NOT complete an interview.

If you agree, we will ask questions on questions on HIV and your children's behaviors (about 40 minutes) in private. Your children's answers will not be shared with you.

Blood Procedures

If you and/or your children agree, the following will happen, as described in your own consent:

- [<2 YEARS OLD] To do the HIV test in your home, a trained nurse will take a few drops (about 1 mL) from your child's finger or heel for the HIV test
- [>2 YEARS OLD]A trained nurse will take about [6 mL for 0-14 (about one teaspoonful), 14mL for 15-17(about one tablespoonful)] of blood from your child's arm or a few drops of blood from your child's finger.
- [0-11] We will discuss the results with you, and your child if you decide to discuss the results with him/her.
- [0-11] We will give you a referral form so you and your child can consult with a doctor or nurse regarding his/her HIV test, CD4 count and viral load results
- [12-17] We will return the results of the HIV test to your child. We will not tell you their results but will encourage them to tell you.
- [12-17] We will give your child a referral form so your child can consult with a doctor or nurse regarding his/her HIV test, CD4 count, and viral load results
- If your child has HIV, he/she will get a CD4 test and you or he/she will receive the results today
- His/her blood will be sent to a laboratory to measure his/her viral load and the results will be returned to the preferred health facility in 6-12 weeks

- We will also do other additional tests related to HIV. If we have test results that might guide your child's care or treatment, we will contact you or your child to inform you of the results or how you and your child's doctor or nurse may get these results.
- We will ask for your permission to store your and/or your child's leftover blood for future research tests
- [≤ 18 months ONLY]
- The body makes antibodies to fight HIV. Antibodies from a mother with HIV can enter the baby's blood during pregnancy. The test we perform on your child today will let us know if your child is exposed to HIV. If it is positive, it does not mean your child has the virus in his/her blood, it just confirms that he/she has been exposed to HIV. We would then send your child's blood to a lab for a special test to confirm if he/she is infected with HIV. If you provide us with the name of a health facility, we can send the result there in about six weeks from now. We will also contact you to inform you that the results have been sent to the facility, if you provide us with your contact information. It is very important that you go to the facility for your child's results, as there is free treatment available.

Right to refuse and to withdraw

It is your decision about whether you will allow all your eligible children to join the survey. Your child may stop taking part at any time. Your child can refuse to answer any question. If your child does not want to take part, or if he/she decides to stop, it will not affect your child's healthcare in any way. If you refuse to have your child tested today, HIV testing and counselling services can be sought at a local facility.

Risks

The risks to your child of taking part in the survey are small. For the blood draw, the risks include brief pain from the needle stick, bruising, lightheadedness, bleeding, and rarely, infection where the needle enters the skin. You and/or your child might learn that he/she has HIV. Learning that he/she has HIV may cause them to feel worried. We will talk to you/them and help you with this. We will do everything we can to keep your child's information private. However, we can't promise complete confidentiality.

Benefits

The main benefit for your children to be in the survey is the chance to learn more about his/her health today, including if they have HIV. Your child's taking part in this research could also help us learn more about how to improve the health of children in Lesotho.

Confidentiality and Access to Your Child's Health Information

The information we collect from your child will not be released outside of the study partners we have mentioned unless there is an issue of safety.
You can contact Dr. Mosilinyane Letsie and should you have any questions or concerns.

→ GO TO PERMISSION STATEMENT

[IF PARENT/GUARDIAN HAS NOT BEEN THROUGH CONSENT PROCESS FOR INTERVIEW/BLOOD DRAW]

Parental Consent/Permission for Interview and/or Blood Draw for Minors, ages 0-17 years

Interviewer reads:

What language do you prefer for our discussion today?

___English

___Sesotho

__Other: Specify _____

Title of Survey: This survey is called the **Lesotho Population-Based HIV Impact Assessment** (LePHIA, 2016-2017)

Survey Procedures

I would like you to allow us to invite your eligible children to take part in the survey. Your consent is all that is required for your 0-11 year olds to take part in the survey. If your child is between the ages of 12 to 17 and agrees, we will also ask him/her to agree to take part in the survey.We will ask your 10-17 year old child to do an interview with us in private to learn what your child knows about HIV and about your child's behaviors that may put him or her at risk for HIV. The interview will take about 40 minutes. We will not share your child's answers to the interview questions with you. The interview will take place in private here in your house or an area around your house. Children under 10 years of age will NOT complete an interview.

If you and/or your children agree, a trained nurse will take a small amount or about [1 mL for <18 months, 6 mL for 0-14 (about one teaspoonful), 14mL for 15-17(about one tablespoonful)] of blood from your child's arm to perform an HIV test here in your home. If it is not possible to take blood from your child's arm, then we will try to take a few drops of blood from your child's finger.

[0-11] We will give you the results today and provide counseling about the results and discuss with you how to share the results with your child if you decide to share them with him/her. If you would like, we can discuss the test results together with your child.
[12-17] We will return the results of the HIV test to your child. We will not tell you their results but will encourage them to tell you.
[ALL] The entire testing and counseling session will take about 40 minutes.

[10-11]
If your child tests positive for HIV, we will also test the amount of CD4 cells in his/her blood and give you the result today. CD4 cells are the part of your immune system that fight infections and other diseases. We will also test the CD4 level of some children without HIV.

We will also send his/her blood to a laboratory to measure his/her viral load which is the amount of HIV in the blood. If you provide us with the name of a health facility, we can send your child's viral load results there about six to twelve weeks from now.

We will give you a referral form and information so that you and your child can consult with a doctor or nurse to learn more about his/her HIV test, CD4 count, viral load and health.

[12-17]

If your child tests positive for HIV, we will also test the amount of CD4 cells in his/her blood and give them the result today. CD4 cells are the part of your immune system that fight infections and other diseases. We will also test the CD4 level of some children without HIV.

We will also send his/her blood to a laboratory to measure his/her viral load which is the amount of HIV in the blood. If your child provided us with the name of a health facility, we can send your child's viral load results there about six to twelve weeks from now.

We will give your child a referral form and information so that you and your child can consult with a doctor or nurse to learn more about his/her HIV test, CD4 count, viral load and health.

We will also do other additional tests related to HIV. If we have test results that might guide your children's care or treatment, we will contact you [0-11]/your child [12-17] to inform you of the results or how you and your child's doctor or nurse may get these results.

Storage of specimens

We would like to ask your permission to store your childrens' leftover blood for future research tests. These tests may be about HIV or other health issues important for the health of Lesotho, such as nutrition or immunization. This sample will be stored using a unique ID number for five up to (5) years after study completion but your child's name will be removed from the sample immediately. Only survey staff will be able to link your child's sample to his/her contact information. We will attempt to tell you about any test results during the five (5) year period that are important for your child's health. We will attempt to tell you about any test results during the five (5) year period that are important for your children's health. Your children's' leftover blood will not be sold or used for commercial reasons. If you do not agree to long-term storage of your children's blood samples, we will destroy your children's blood samples after survey-related testing has been completed.

Right to refuse or withdraw

It is your decision about whether you will allow us to invite all your eligible children to join the survey. Your child may stop taking part at any time. If your child does not want to answer some of the questions she/he may skip them and move to the next question. If your child does not take part, or if they decide

to stop, it will not affect your child's healthcare in any way. If your child does not wish to participate in the study he/she may still request HIV testing and counselling, pending the availability of supplies.

Risks

The risks to your children of taking part in the survey are small. For the blood draw, the risks include brief pain from the needle stick, bruising, lightheadedness, bleeding, and rarely, infection where the needle enters the skin. You and/or your child may learn that they have HIV. Learning that they have HIV may cause some emotional discomfort. We will provide counseling to you/them on how to cope with learning that they have HIV. We will do everything we can to keep your child's information private. We cannot guarantee complete confidentiality.

Benefits

The main benefit for your children to be in the survey is the chance to learn more about their health today. If your child tests HIV-positive you and/or your child will learn where to take your child for life-saving treatment, which is provided by the Ministry of Health for free. If you already know that your child is HIV-positive and he/she is on treatment, the CD4 and viral load tests can help your child's doctor or nurse judge how well the treatment is working. Your child's taking part in this research could help us learn more about children's health in Lesotho.

There is no cost to you for your child being in the survey. You and your child will not be paid to be in the survey.

Confidentiality and Access to Your Health Information

We will do everything we can to keep your children's taking part in the survey private. The information we collect from your children will be identified by a number and not by your name or your child's name. Your name, your child's name, or any other identifying information will not appear on any survey results that we share with Ministry of Health, the public, or publish or present at scientific meetings. The information we collect from your children will not be released outside of the study partners listed unless there is an issue of safety.

The following individuals and/or agencies will be able to look at your children's research records to help oversee the conduct of this survey:

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this survey to ensure that we are protecting your children's rights as a person taking part in a research study. These include the Lesotho Ministry of Health Research and Ethics Committee and the Institutional Review Boards at the Centers for Disease Control and Prevention (CDC; Atlanta, USA), Columbia University Medical Center and Westat (a statistical survey research organization)
- The U.S. Office of Human Research Protections and other government agencies that oversee the safety of human subjects to ensure we are protecting your children's rights as a person taking part in this survey
- Study staff and study monitors

Your permission to allow us to use and share your children's name and contact information with the groups above will expire immediately after the end of the study.

If you want to leave the study, have any questions about the survey, or feel that you have been harmed by taking part, you should contact the Principal Investigator:

Dr. Mosilinyane Letsie
Address: Ministry of Health
P.O. Box 514, Maseru 100, Lesotho
Phone: +266 58870982
Email: lmosilinyane@yahoo.com

If you have any questions about your rights as a participant in this survey, you can contact:

Me' Masebeo Koto
Address: Ministriy of Development Planning
Department of Planning and Statistics
P.O. Box 630, Maseru 100, Lesotho
Email: kotomasebeo@gmail.com
Phone:+266 63066403

Do you want to ask me anything about your children taking part in the survey?

PERMISSION STATEMENT

Any questions I had have been answered satisfactorily. I have been offered a copy of this consent form.

1. Do you agree for your eligible children to be interviewed or for us to ask your children to be interviewed? 'YES' means that you give your consent/permission to have your children interviewed or for the survey staff to ask your children to be interviewed. 'NO' means that you will NOT give consent/permission for us your children to be interviewed nor ask your children to be interviewed.
   _____Yes _____No
   (If "Yes" proceed to the next question)

2. Do you agree for your eligible children to give blood or for us to ask your children to give blood for HIV testing and related testing? 'YES' means that you give your consent/permission to have the nurse collect a blood sample or for us to ask your children to collect a sample of his/her blood for HIV testing and related testing. 'NO' means that we will NOT collect blood nor ask your children to give blood for HIV testing and related testing.
   _____Yes _____No
   (If "Yes" proceed to the next question)

3. Do you agree to have your eligible children's leftover blood sample stored or for us to ask your children to have his/her leftover blood sample stored for future research? 'YES' means that you give consent/permission for us to store your children's leftover blood samples or ask your children to store his/her blood samples for future research. 'NO' means that your children's blood samples will NOT be stored for future research nor will we ask your children to store his/her blood.

_____Yes _____No

Parent/guardian signature or mark_____ Date: ___/___/___

Printed name of parent/guardian_____

Parent/guardian ID number_____ (If applicable. If not applicable check here __)

[For illiterate participants]

Signature of witness_____ Date: ___/___/___

Printed name of witness_____

Signature of person obtaining permission_____ _____ Date: ___/___/___

Printed name of person obtaining permission_____

Survey staff ID number _____

Child's name (print) _____

Child's participant ID number _____

Consent/Permission from Parent/Guardian for Blood Draw & Interview for Minors, ages 10-17 years

[IF PARENT/GUARDIAN HAS BEEN THROUGH CONSENT PROCESS FOR BLOOD DRAW]

Interviewer Reads:

Now I would like to ask you to give us permission for your children to take part in the survey. We will ask about 12,698 people, ages 15-59 years and 4,222 children, ages 0-14 years from 10, 450 households to join this survey. Your permission is all that is required for your 10-11 year old to take part in the survey. If your child is between the age of 12 to17, we will also ask your son/daughter to provide assent to take part in the survey. Your child's taking part will help the Lesotho Ministry of Health make health services for children and young people better in Lesotho.

Survey Procedures

If you and/or your child agree, the following will happen, as described in your own consent:

- We will ask questions on HIV and your child's behaviors (about 40 minutes) in private. Your child's answers will not be shared with you.
- To do the HIV test in your home, a trained nurse will take about 5/14 mL [AS PER AGE] of blood from your child's arm or a few drops of blood from your child's finger.
- [10-11] We will discuss the results with you, and your child if you decide to discuss the results with him/her
- [12-17] We will return the results of the HIV test to your child. We will not tell you their results but will encourage them to tell you.
- If your child has HIV, he/she will get a CD4 test and you or he/she will receive the results today
- His/her blood will be sent to a laboratory to measure his/her viral load and the results will be returned to the preferred health facility in 6-12 weeks
- [10-11] We will give you a referral form so you and your child can consult with a doctor or nurse regarding his/her HIV test, CD4 count and viral load results
- [12-17] We will give your child a referral form so your child can consult with a doctor or nurse regarding his/her HIV test, CD4 count, and viral load results
- We will also do other additional tests related to HIV. If we have test results that might guide your child's care or treatment, we will contact you or your child to inform you of the results or how you or your child and your child's doctor or nurse may get these results.
- We will ask for your permission to store your child's leftover blood for future research tests

Right to refuse and to withdraw

It is your decision about whether you will allow your entire child to join the survey. Your child may stop taking part at any time. Your child can refuse to answer any question. If he/she decides not to take part, or if he/she decides to stop, it will not affect your child's healthcare in any way. If your child does not wish to participate in the study he/she may still request HIV testing and counselling, pending the availability of supplies.

Risks

The risks to your child of taking part in the survey are small. For the blood draw, the risks include brief pain from the needle stick, bruising, lightheadedness, bleeding, and rarely, infection where the needle enters the skin. You might learn that he/she has HIV. Learning that he/she has HIV may cause them to feel worried. We will talk to you/them and help you with this. We will do everything we can to keep your child's information private. However, we can't promise complete confidentiality.

Benefits

The main benefit for your child to be in the survey is the chance to learn more about his/her health today, including if they have HIV. Your child's taking part in this research could also help us learn more about how to improve the health of children in Lesotho.

Confidentiality and Access to Your Child's Health Information

The information we collect from your child will not be released outside of the study partners we have mentioned unless there is an issue of safety. You can contact Dr. Mosilinyane Letsie and should you have any questions or concerns.

→ GO TO PERMISSION STATEMENT

[IF PARENT/GUARDIAN HAS NOT BEEN THROUGH CONSENT PROCESS FOR INTERVIEW/BLOOD DRAW]

Interviewer reads:

What language do you prefer for our discussion today?

___English

___Sesotho

__Other Language: Specify _____

Title of Survey: This survey is called the **Lesotho Population-Based HIV Impact Assessment** (LePHIA, 2016-2017)

Survey Procedures

If you agree to allow us to invite your child to take part in the survey, we will ask your child to do an interview with us in private to learn what your child knows about HIV and about your child's behaviors that may put him or her at risk for HIV. The interview will take about 40 minutes. We will not share your child's answers to the interview questions with you. The interview will take place in private here in your house or an area around your house.

If you and your child agree, a trained nurse will take a small amount or about [6 mL for 10-14 (about one teaspoonful), 14mL for 15-17(about one tablespoonful)] of blood from your child's arm to perform an HIV test here in your home. If it is not possible to take blood from your child's arm, then we will try to take a few drops of blood from your child's finger.

[10-11] We will give you the results today and provide counseling about the results and discuss with you how to share the results with your child if you decide to share them with him/her. If you would like, we can discuss the test results together with your child.
[12-17] We will return the results of the HIV test to your child. We will not tell you their results but will encourage them to tell you.
[ALL] The entire testing and counseling session will take about 40 minutes.

[10-11]
If your child tests positive for HIV, we will also test the amount of CD4 cells in his/her blood and give you the result today. CD4 cells are the part of your immune system that fight infections and other diseases. We will also test the CD4 level of some children without HIV.

We will also send his/her blood to a laboratory to measure his/her viral load which is the amount of HIV in the blood. If you provide us with the name of a health facility, we can send your child's viral load results there about six to twelve weeks from now.

We will give you a referral form and information so that you and your child can consult with a doctor or nurse to learn more about his/her HIV test, CD4 count, viral load and health.

[12-17]

If your child tests positive for HIV, we will also test the amount of CD4 cells in his/her blood and give them the result today. CD4 cells are the part of your immune system that fight infections and other diseases. We will also test the CD4 level of some children without HIV.

We will also send his/her blood to a laboratory to measure his/her viral load which is the amount of HIV in the blood. If your child provide us with the name of a health facility, we can send your child's viral load results there about six to twelve weeks from now.

We will give your child a referral form and information so that your child can consult with a doctor or nurse to learn more about his/her HIV test, CD4 count, viral load and health.

We will also do other additional tests related to HIV. If we have test results that might guide your child's care or treatment, we will contact [10-11]/your child [12-17] to inform you of the results or how you and your child's doctor or nurse may get these results.

Storage of specimens

We would like to ask your permission to store your child's leftover blood for future research tests. These tests may be about HIV or other health issues important for the health of Lesotho, such as nutrition or immunization. This sample will be stored using a unique ID number for up to five (5) years after study completion but your child's name will be removed from the sample immediately. Only survey staff will be able to link your child's sample to his/her contact information. We will attempt to tell you about any test results during the five (5) year period that are important for your child's health. We will attempt to tell you about any test results during the five (5) year period that are important for your child's health. Your child's leftover blood will not be sold or used for commercial reasons. If you do not agree to long-term storage of your child's blood samples, we will destroy your child's blood samples after survey-related testing has been completed.

Right to refuse or withdraw

It is your decision about whether you will allow us to invite your child to join the survey. Your child may stop taking part at any time. If your child does not want to answer some of the questions she/he may skip them and move to the next question. If you agree to allow us to invite your child to take part, you will have the option for your child to test for HIV and CD4 counts and the option to have his/her blood stored for future research. If your child does not take part, or if he/she decides to stop, it will not affect your child's healthcare in any way. If your child does not wish to participate in the study he/she may still request HIV testing and counselling, pending the availability of supplies.

Risks

The risks to your child of taking part in the survey are small. For the blood draw, the risks include brief pain from the needle stick, bruising, lightheadedness, bleeding, and rarely, infection where the needle enters the skin. You and/or your child may learn that they have HIV. Learning that they have HIV may cause some emotional discomfort. We will provide counseling to you/them on how to cope with learning that they have HIV. We will do everything we can to keep your child's information private. We cannot guarantee complete confidentiality.

Benefits

The main benefit for your child to be in the survey is the chance to learn more about his/her health today. If your child tests HIV-positive you and/or your child will learn where to take your child for life-saving treatment, which is provided by the Ministry of Health for free. If you already know that your child is HIV-positive and he/she is on treatment, the CD4 and viral load tests can help your child's doctor or nurse judge how well the treatment is working. Your child's taking part in this research could help us learn more about children's health in Lesotho.

There is no cost to you for your child being in the survey. You and your child will not be paid to be in the survey.

Confidentiality and Access to Your Health Information

We will do everything we can to keep your child's taking part in the survey private. The information we collect from your child will be identified by a number and not by your name or your child's name Your name, your child's name, or any other identifying information will not appear on any survey results that we share with Ministry of Health, the public, or publish or present at scientific meetings. The information we collect from your child will not be released outside of the study partners listed unless there is an issue of safety.

The following individuals and/or agencies will be able to look at your child's research records to help oversee the conduct of this survey:

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this survey to ensure that we are protecting your child's rights as a person taking part in a research study. These include the Lesotho Ministry of Health Research and Ethics Committee and the Institutional Review Boards at the Centers for Disease Control and Prevention (CDC; Atlanta, USA), Columbia University Medical Center and Westat (a statistical survey research organization)
- The U.S. Office of Human Research Protections and other government agencies that oversee the safety of human subjects to ensure we are protecting your child's rights as a person taking part in this survey
- Study staff and study monitors

Your permission to allow us to use and share your child's name and contact information with the groups above will expire immediately after the end of the study. If you want to leave the study, have any questions about the survey, or feel that you have been harmed by taking part, you should contact the Principal Investigator:

Dr. Mosilinyane Letsie
Address: Ministry of Health
P.O. Box 514, Maseru 100, Lesotho
Phone: +266 58870982
Email: lmosilinyane@yahoo.com

If you have any questions about your rights as a participant in this survey, you can contact:

Me' Masebeo Koto
Address: Ministriy of Development Planning
Department of Planning and Statistics
P.O. Box 630, Maseru 100, Lesotho
Email: kotomasebeo@gmail.com
Phone:+266 63066403

Do you want to ask me anything about your child's taking part in the survey?

PERMISSION STATEMENT

Any questions I had have been answered satisfactorily. I have been offered a copy of this permission form.

1. [IF EARLY ADOLESCENT QUESTIONNAIRE OR 15-17] Do you agree for us to ask your child to do the interview? YES' means that you give your permission to have the survey staff ask your child to do the interview. 'NO' means that you will NOT give permission for us to ask your child to be interviewed.
   _____Yes _____No

2. Do you agree for us to ask your child to give blood for HIV testing and related testing? 'YES' means that you give your permission for us to ask your child to have the nurse collect a sample of your child's blood for HIV testing and related testing. 'NO' means that we will NOT ask your child to give blood for HIV testing and related testing.
   _____Yes _____No
   (If "Yes" proceed to the next question)

3. Do you agree for us to ask your child to have your child's leftover blood stored for future research? 'YES' means that you give permission for us to ask your child to store your child's blood samples for future research. 'NO' means that you do NOT give us permission to ask your child to store his/her blood samples for future research.
   _____Yes _____No

Parent/guardian signature or mark_____ Date: ___/___/___

Printed name of parent/guardian_____

Parent/guardian ID number_____ (If applicable. If not applicable check here __)

[For illiterate participants]

Signature of witness_____ Date: ___/___/___

Printed name of witness_____

Signature of person obtaining permission_____ _____ Date: ___/___/___

Printed name of person obtaining permission_____

Survey staff ID number _____

Child's name (print) _____

Child's participant ID number _____

Assent for Interview from Minors, ages 12-14

Interviewer reads:

What language do you prefer to use for this discussion?

___English

___ Sesotho

___Other Language: Specify_____

Hello. My name is_____. We have talked to your parents/guardian and they said it was okay to invite you to take part in a survey. Surveys help us learn new things.

This form talks about our survey and the choice that you have to take part in it. We want you to ask us any questions that you have. You can ask questions any time.

Why are we doing this survey?
We are doing this survey to help us learn more about the health of adolescents in Lesotho. We plan to ask about 4,000 children, ages 0-14 years to join this survey. A survey is a way to learn about something by interviewing and testing many people. We would like to invite you to join this survey.

This form might have some words that you may not have heard before. Please ask us to explain anything that you do not understand.

What would happen if I join this survey?
If you decide to join the survey, here is what would happen:

- We will ask you questions about your age, what you know about HIV, and some of your behaviors.
- The interview will take place in private here in your house or an area around your house. We will not tell your parents about any of your answers.
- The interview will take about 30 minutes.
- After we ask you the questions, we will also ask you if it is okay to take some of your blood to test for HIV and to store it for future studies.

Could bad things happen if I join this survey?
You may feel uncomfortable answering some of the questions we will ask. You can refuse to answer any question or stop the interview at any time. If you do not take part, or if you decide to stop, it will not affect your health care in any way. If you child do not want to participate in the study you may still request HIV testing and counselling, pending the availability of supplies.

Could the survey help me?
You will help figure out ways to help children and learn more about health in Lesotho. Your taking part is important.

What else should I know about this survey?

If you don't want to be in the survey, you don't have to be. Nobody will get upset with you if you do not want to join the survey.

It is also OK to say 'yes' and change your mind later. If you want to stop, please tell us.

We will not tell other people that you are in this survey and will not share information about you to anyone who does not work in the survey. Any information about you will have a number on it instead of your name. Your name or any other identifying information will not appear on any survey results that we share with Ministry of Health, the public, or publish or present at scientific meetings.

The following individuals and/or agencies will be able to look at your research records:

- Study staff and study monitors
- Staff members from groups that protect your rights to ensure that we are protecting your rights

The information we collect during the survey will not be released outside of the survey groups listed unless there is an issue of safety. If you want to leave the study, have any questions about the survey, or feel that you have been harmed by taking part, you should contact the Principal Investigator:

Dr. Mosilinyane Letsie
Address: Ministry of Health
P.O. Box 514, Maseru 100, Lesotho
Phone: +266 58870982
Email: lmosilinyane@yahoo.com

If you have any questions about your rights as a participant in this survey, you can contact:

Me' Masebeo Koto
Address: Ministriy of Development Planning
Department of Planning and Statistics
P.O. Box 630, Maseru 100, Lesotho
Email: kotomasebeo@gmail.com
Phone:+266 63066403

You should also know that you will not be paid to be in the study. You can ask questions any time. Ask us any questions you have. Take the time you need to make your choice.

Do you want to ask me anything?

If you want to be asked questions after we talk, please write your name below. We will write our name too. This shows we talked about the survey and that you want to take part.

1. Do you agree to do the interview? 'YES' means that you agree to do the interview. 'NO' means that you will NOT do the interview.
   _____Yes _____No

Child signature or mark_____ Date: ___/___/___

Printed name of child _____

Child's participant ID number _____

Printed name of parent/guardian_____

[For illiterate parent/guardian/participant]

Signature of witness_____ Date: ___/___/___

Printed name of witness_____

Signature of person obtaining consent/assent_____ _____ Date: ___/___/___

Printed name of person obtaining consent/assent_____

Survey staff ID number _____

Assent for Interview from Minors, ages 15-17

Interviewer reads:

What language do you prefer for our discussion today?

___English

___Sesotho

___Other Language: Specify _____

Hello. My name is_____. We are doing a research study throughout Lesotho to learn more about HIV in the country.

Title of Survey: This survey is called the **Lesotho Population-Based HIV Impact Assessment** (LePHIA, 2016-2017)

Purpose of the survey

This survey will help us learn more about the health of young people in Lesotho. It will also tell us about young people's risk for getting HIV. We plan to ask about 12,698 people, ages 15-59 to join this survey. A survey is a way to learn new information about something by interviewing and testing many people. If you join, your taking part will help the Ministry of Health make health services better in the country.

This form might have some words in it that are not familiar to you. Please ask us to explain anything that you do not understand.

Survey Procedures

If you agree to join, we will ask you questions about your age, your knowledge about HIV, and your behavior. We will ask you to answer these questions without having others present. The interview will take about 40 minutes.

After the interview, we will offer you an HIV test. We will ask you for consent for the HIV test and blood draw and talk to you about your results. The testing and counseling session will take about 40 minutes.

Right to refuse or withdraw

You do not have to take part in the survey. If you choose to join the survey, you may change your mind at any time and stop taking part. If you decide not to take part, or if you decide to stop it will not affect your healthcare in any way and nobody will get upset with you. If you do not want to participate in the study you may still request HIV testing and counselling, pending the availability of supplies.

Risks and benefits

The risks in being in the survey are small. We will do everything we can to keep your information private. However, we cannot promise complete confidentiality. You may feel uncomfortable about some of the questions we will ask. You can refuse to answer any question. If you take part, you will get free testing for HIV in your own home. Taking part in this research will help us learn more about HIV in Lesotho. Your taking part is important.

8. There is no cost to you for being part of the survey. You should also know that you would not be paid.

Confidentiality, Privacy and Access to Your Health Information

We will do everything we can to keep your taking part in the survey and your answers private. We will not tell your family about any of your responses. Your name and signed consent form will be kept separate from your answers to the questions, which will only be identified by a number. Your name or any other identifying information will not appear on any survey results that we share with Ministry of Health, the public, or publish or present at scientific meetings. The information we collect during the survey will not be shared outside of the survey groups listed unless there is an issue of safety.

The following individuals and/or agencies will be able to look at your research records:

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this survey to ensure that we are protecting your rights as a person taking part in a research study. The Research and Ethics Committee and the Institutional Review Boards at the Centers for Disease Control and Prevention (CDC; Atlanta, USA), Columbia University Medical Center and Westat (a statistical survey research organization)
- The U.S. Office of Human Research Protections and other government agencies that oversee the safety of human subjects to ensure we are protecting your rights as a person taking part in this survey
- Study staff and study monitors

If you want to leave the study, have any questions about the survey, or feel that you have been harmed by taking part, you should contact the Principal Investigator:

Dr. Mosilinyane Letsie
Address: Ministry of Health
P.O. Box 514, Maseru 100, Lesotho
Phone: +266 58870982
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If you have any questions about your rights as a participant in this survey, you can contact:

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Address: Ministriy of Development Planning
Department of Planning and Statistics

P.O. Box 630, Maseru 100, Lesotho
Email: kotomasebeo@gmail.com
Phone:+266 63066403

Do you want to ask me anything about the survey?

Consent Statement

Any questions that I had were answered satisfactorily. I have been offered a copy of this consent form.

1. Do you agree to do the interview? 'YES' means that you agree to do the interview. 'NO' means that you will NOT do the interview.
   _____Yes _____No

Participant signature or mark_____ Date: ___/___/___

Printed name of participant_____

Participant ID number _____

[For illiterate participants]

Signature of witness_____ Date: ___/___/___

Printed name of witness_____

Signature of person obtaining consent_____ _____ Date: ___/___/___

Printed name of person obtaining consent_____

Survey staff ID number _____

Assent for Blood Draw from Minors, ages 12-17

Interviewer reads:

Hello. My name is_____. I will give you information about blood testing in this survey.

As a part of this survey, we are giving people a chance to learn if they have HIV. We will ask about 12,698 people, ages 15-59 years and 4,222 children, ages 0-14 years from 10, 450 households to join this survey. We are also asking people if we can keep some of their blood for future testing.

This form might have some words in it that may be new to you. Please ask me to explain anything that you do not understand.

What would happen if I agree to get blood testing?

If you agree to testing, here is what would happen:

- We will use a needle to take about a teaspoon of your blood from your arm. If it's not possible to take blood from your arm, then we will try to take a few drops of blood from your finger. Then we will test your blood for HIV here in your home.
- It will take about 40 minutes to do the test and to talk to you about the results.
- If you have HIV, we will do another test here at home on the blood we have already collected to measure some cells in your blood that fight HIV and other infections. We will also measure these cells from some children without HIV.
- If you test positive for HIV, we will send your blood to a laboratory to measure the amount of HIV in your blood. We will ask you if we can use some of your blood for future testing. These tests may be about HIV or other health issues important for in Lesotho. This sample will be stored using a unique ID number for up to five (5) years after study completion but your name will be removed from the sample immediately. Only survey staff will be able to link your sample to your contact information. We will attempt to tell you about any test results during the five (5) year period that are important for your health. We will try to tell you about any test results during this period that are important to your health. Your leftover blood will not be sold. If you do not agree to future storage and testing of your blood, we will destroy your blood after survey-related testing has finished.

Could bad things happen if I agree to blood testing?

The needle may hurt when it is put into and taken out of your arm. This will go away quickly. Sometimes the needle can leave a bruise on the skin. You might bleed a little or feel a little dizzy afterwards. Rarely, an infection might occur where the needle enters the skin. And sometimes we may have to stick you with the needle more than one time in order to get the right amount of blood. We will do our best to make it hurt as little as possible. You may learn that you have HIV**.** Learning that you have HIV may cause you to feel worried or upset. We can assist you with talking to your parents/guardian and help you with this. You do not have to give blood and you are free to change your mind even after you have started the blood draw.

If you decide not to take part, or if you decide to stop, it will not affect your healthcare in any way. If you do not want to participate in the study you may still request HIV testing and counselling, pending the availability of supplies. We will do everything we can to keep your information private. However, we cannot promise complete confidentiality.

Could getting tested for HIV help me?

If you do not have HIV, you can learn about what you can do to stay that way. If you have HIV, we will tell you where to get help or treatment. The treatment for HIV is free. If you already know you have HIV and are on HIV treatment, the tests may help your doctor/nurse judge how well your treatment is working. We also hope to learn something from this survey to help other children in Lesotho.

There is no cost to you or your parent/guardian for you being in the survey. You and your parent/guardian will not be paid for you to be in the survey.

What else should I know about this survey?

If you do not want to get a blood test, you do not have to. Nobody will get upset. You can say 'yes' and change your mind later. If you want to stop, please tell us.

We will not tell other people that you are in this survey and will not share information about you to anyone who does not work on the survey. Any information about you will have a number on it instead of your name. Your name or any other identifying information will not appear on any survey results that we share with Ministry of Health, the public, or publish or present at scientific meetings. No one else will be able to know your test results except the people working on the survey.

The following individuals and/or agencies will be able to look at your survey records:

- Survey staff and survey monitors
- Staff members from groups that protect your rights to ensure that we are protecting your rights

Do you want to ask me anything?

If you want to get an HIV test and give your blood for the survey after we talk, please write your name below. We will write our name too. This shows we talked about the survey and what you decide about taking part.

1. Do you agree to give blood for testing? 'YES' means that you agree to give blood for HIV testing and related testing. 'NO' means that you will NOT give blood for HIV testing and related testing.
   _____Yes _____No
   (If "Yes" proceed to the next question)

2. Do you agree to give your blood to be stored for future research? 'YES' means that you agree to have your blood stored for future research. 'NO' means that your blood will NOT be stored for future research.

_____Yes _____No

Minor's signature or mark_____ Date: ___/___/___

Printed name of minor _____

Minor's participant ID number _____

Printed name of parent/guardian_____

[For illiterate participant]

Signature of witness_____ Date: ___/___/___

Printed name of witness_____

Signature of person obtaining consent/assent_____ _____ Date: ___/___/___

Printed name of person obtaining consent/assent_____

Survey staff ID number _____

Consent to Share Contact Information of LePHIA Participants with Ministry of Health or Their Partners

Interviewer reads:

Purpose of consent

You had a positive HIV test today. We have provided you with a referral form to bring to a health clinic and seek HIV treatment and care. We would like to help you in accessing the health care that you need. If you agree, we may be able to provide your contact information and HIV test results to the village health workers (VHW) or nurses from the Ministry of Health (MOH) or to a partner that the MOH work with. This VHW, nurse, or partner will contact you to talk to you about HIV and help you go for HIV care. Anyone who is provided with your details will be experienced in providing support to people living with HIV and will be trained in maintaining confidentiality.

What do you have to do if you agree to take part?

If you agree for your information to be shared and to be contacted, we will provide your name, phone number (if you provided it to us) and your address to those individuals to provide you with support. The VHW/nurse/partner can contact you by SMS, phone or in person.

What about confidentiality?
Your HIV test results and your contact information will not be shared with any other parties aside from what was specified in the other consent forms, and with this support organization. They will also do their utmost to maintain your confidentiality. However, we cannot guarantee complete confidentiality.

What are the potential risks?
As with all surveys, there is a chance that confidentiality could be compromised. We are doing everything we can to minimize this risk.

What are the potential benefits?
A trained village health worker or nurse will assist you in accessing the health care that you need.

Who should you contact if you have questions?
If you change your mind or have any questions or feel that you have been harmed by taking part, you should contact the Principal Investigator listed below:

Dr. Mosilinyane Letsie
Address: Ministry of Health
P.O. Box 514, Maseru 100, Lesotho
Phone: +266 58870982
Email: lmosilinyane@yahoo.com

If you have any questions about your rights as a person in this survey, you can contact:

Me' Masebeo Koto
Address: Ministry of Development Planning
Department of Planning and Statistics
P.O. Box 630, Maseru 100, Lesotho
Email: kotomasebeo@gmail.com
Phone:+266 63066403

Do you want to ask me anything about the survey?

Consent Statement

Any questions that I had were answered satisfactorily. I have been offered a copy of this consent form.

1. Do you agree to allow us to share your contact information with the Ministry of Health or a partner that Ministry of Health works with, who may contact you to assist and support you in seeking HIV care? 'YES' means that you agree for your information to be shared. 'NO' means that you do not agree for your information to be shared.

   _____Yes _____No

2. If yes, do you agree to be contacted by?
   [MUST SELECT AT LEAST ONE]

   SMS _____Yes _____No
   Phone call _____Yes _____No
   In person _____Yes _____No

Participant signature or mark_____ Date: ___/___/___

Printed name of participant_____

Participant ID number _____

Signature of person obtaining consent_____ _____ Date: ___/___/___

Printed name of person obtaining consent_____

Survey staff ID number _____

Consent to Share Contact Information of LePHIA Participants with Ministry of Health or Their Partners

Interviewer reads:

Purpose of consent

Your child had a positive HIV test today. We have provided you with a referral form so that you and your child can take to a health clinic and seek HIV treatment and care. We would like to help you and your child in accessing the health care that your child needs. If you agree, we might be able to provide your contact information and your child's HIV results to health workers or counselors from the Ministry of Health & Public Hygiene (MOHPH) or a partner that the MOHPH works with. This counselor will contact you to talk to you and your child about HIV and help you and your child go for HIV care. Anyone who is provided with you and your child's details will be experienced in providing support to people living with HIV and will be trained in maintaining confidentiality.

What do you have to do if you agree to take part?
If you agree for your child's information to be shared, and to be contacted, we will provide your name, phone number (if you provided it to us) and your address to those counselors to provide you with support. The counselor can contact you by SMS, phone or in person.

What about confidentiality?
Your HIV test results and your contact information will not be shared with any other parties aside from what was specified in the other consent forms, and with this support organization. They will also do their utmost to maintain your confidentiality. However, we cannot guarantee complete confidentiality.

What are the potential risks?
As with all surveys, there is a chance that confidentiality could be compromised. We are doing everything we can to minimize this risk.

What are the potential benefits?
A trained health worker or counselor will assist you in accessing the health care needed by your child.

Who should you contact if you have questions?
If you change your mind or have any questions or feel that you have been harmed by taking part, you should contact the Principal Investigator listed below:

[DO NOT READ BELOW]

Principal Investigator:

Dr. Mosilinyane Letsie
Address: Ministry of Health
P.O. Box 514, Maseru 100, Lesotho
Phone: +266 58870982
Email: lmosilinyane@yahoo.com

Consent to Share Contact Information of LePHIA Participants with Ministry of Health or Their Partners

If you have any questions about your rights as a person in this survey, you can contact:

Me' Masebeo Koto
Address: Ministriy of Development Planning
Department of Planning and Statistics
P.O. Box 630, Maseru 100, Lesotho
Email: kotomasebeo@gmail.com
Phone:+266 63066403

Do you want to ask me anything about the survey?

Consent Statement

Any questions that I had were answered satisfactorily. I have been offered a copy of this consent form.

1. Do you agree to allow us to share your contact information with the Ministry of Health or a partner that Ministry of Health works with, who may contact you to assist and support you in seeking HIV care? 'YES' means that you agree for your information to be shared. 'NO' means that you do not agree for your information to be shared.

_____Yes _____No

2. If yes, do you agree to be contacted by?

[MUST SELECT AT LEAST ONE]

SMS _____Yes _____No
Phone call _____Yes _____No
In person _____Yes _____No

Participant signature or mark_____ Date: ___/___/___

Printed name of participant_____

Participant ID number _____

Signature of person obtaining consent_____ _____ Date: ___/___/___

Printed name of person obtaining consent_____

Survey staff ID number _____