TANZANIA HIV IMPACT SURVEY 2022-2023

(THIS 2022-2023)

FINAL REPORT

SEPTEMBER 2024

Tanzania HIV Impact Survey 2022-2023
THIS 2022-2023

THIS 2022-2023 COLLABORATING INSTITUTIONS

- The Tanzania Commission for AIDS (TACAIDS)
- The Zanzibar AIDS Commission (ZAC)
- Ministry of Health, Tanzania (MoH/T)
- Ministry of Health, Zanzibar (MoH/Z)
- The National Bureau of Statistics (NBS), Government of Tanzania
- The Office of Chief Government Statistician (OCGS) in Zanzibar
- The National AIDS, STIs and Hepatitis Control Programme (NASHCoP)
- The Zanzibar Integrated HIV, Hepatitis, Tuberculosis and Leprosy Program (ZIHHTLP)
- The United States (US) President's Emergency Plan for AIDS Relief (PEPFAR)
- The US Centers for Disease Control and Prevention (CDC)
- Westat
- ICAP at Columbia University

DONOR SUPPORT AND DISCLAIMER

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

GLOSSARY OF TERMS

95-95-95: Treatment targets proposed by the Joint United Nations Programme on HIV and AIDS (UNAIDS) to help end the AIDS epidemic. The targets for 2020 were that 90% of all people living with HIV would know their HIV status; 90% of all people with diagnosed HIV would receive sustained antiretroviral therapy (ART); and 90% of all people receiving ART would achieve viral load suppression (VLS). UNAIDS now calls for countries to reach the next set of targets, 95-95-95, by 2025.

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

Adults: Unless otherwise noted, adults are defined as the survey population aged 15 years and older.

Antiretroviral (ARV): A type of medication that inhibits the ability of HIV to multiply in the body.

Antiretroviral Therapy (ART): Treatment with a combination of ARV medications that reduces the amount of HIV in the body (viral load), leading to improved health and survival in a person 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.

Coronavirus disease 2019 (COVID-19): An illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a virus that can be spread from person to person. The ongoing pandemic caused by COVID-19 has caused millions of deaths, led to major societal and economic disruptions, and profoundly strained health systems across the globe.

De Facto Household Resident: A person who slept in the household the night before 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 or older or is defined by law in Tanzania as a child with special circumstances (an individual aged 15-17 years who is married, the parent of a child, or has left home and is self-sufficient).

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 a person living with HIV vulnerable to illnesses that a healthy immune system would eliminate.

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

HIV Prevalence: The proportion of persons in a population who are living with HIV at a specific point in time.

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

HIV Viral Load Suppression (VLS): An HIV viral load 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), share the same cooking arrangements, 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. 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 some or the entire foreskin (prepuce) from the penis. Medically supervised adult male circumcision is a scientifically proven method for reducing a man's risk of acquiring HIV through heterosexual intercourse. Voluntary medical male circumcision is an important part of national HIV prevention programs in most HIV high-burden countries.

Older Adolescents: Unless otherwise noted, individuals aged 15-19 years are referred to as older adolescents (older adolescent girls and older adolescent boys). Note that while older adolescents are included as part of the aggregated adult population for reporting purposes, they are distinct from young adults as a population of concern for HIV programs.

Population Viremia: Population viremia is the prevalence of unsuppressed viral load (defined here as ≥ 1,000 copies/mL) measured without regard to HIV status. The numerator is the number of people with unsuppressed viral loads, and the denominator is the entire population tested. Subnational areas with higher population viremia could be at risk of higher incidence.

Pre-exposure Prophylaxis (PrEP): PrEP is the use of ARVs by people at risk for HIV to prevent HIV acquisition.

Prevention of Mother-to-Child Transmission (PMTCT): In order to prevent women living with HIV from passing the virus to their babies during pregnancy, labor and delivery, or breastfeeding, the World Health Organization (WHO) recommends a four-pronged 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 and their children and families.

Tuberculosis: Tuberculosis (TB) is a bacterial disease that most often affects the lungs but can also affect other parts of the body. When a person with active TB coughs, sneezes, sings, or talks, TB bacilli can spread through the air and may remain airborne in an enclosed area for hours. TB is the leading cause of death among people living with HIV.

Young Adults: Unless otherwise noted, individuals aged 20-24 years are defined as young adults, including young women and young men.

Young People: In this report, individuals aged 15-24 years are defined as young people. By sex, this includes older adolescent girls aged 15-19 years and young women aged 20-24 years and older adolescent boys aged 15-19 years and young men aged 20-24 years.

LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ALTC	Active Linkage to Care
ANC	Antenatal Care
ART	Antiretroviral Therapy
ARV	Antiretroviral
BMC	Bugando Medical Centre
CDC	US Centers for Disease Control and Prevention
CD4	CD4+ T cell
CI	Confidence Interval
DBS	Dried Blood Spot
DTS	Dried Tube Specimens
EA	Enumeration Area
EID	Early Infant Diagnosis
HBsAg	Hepatitis B Surface Antigen
HBTC	Home-Based Testing and Counseling
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HTS	HIV Testing Services
IQR	Interquartile Range
LAg	Limiting Antigen
mL	Milliliter
µL	Microliter
MOH	Ministry of Health
MOS	Measure of Size
NASHCoP	National AIDS, STIs and Hepatitis Control Programme
NBS	National Bureau of Statistics
NIMR	National Institute for Medical Research
NPHL	National Public Health Laboratory
ODn	(normalized) Optical Density
OCGS	Office of Chief Government Statistician in Zanzibar
PCR	Polymerase Chain Reaction
PEPFAR	US President's Emergency Plan for AIDS Relief
PHIA	Population-based HIV Impact Assessment
PMTCT	Prevention of Mother-to-Child Transmission
PO-RALG	President's Office Regional Administration and Local Government (Mainland Tanzania)
PO-RALGSD	President's Office Regional Administration and Local Government and Special Department
PrEP	Pre-Exposure Prophylaxis
PSU	Primary Sampling Unit
QA	Quality Assurance
QC	Quality Control
RR	Response Rate
TACAIDS	Tanzania Commission for AIDS
TB	Tuberculosis
THIS 2022-2023	Tanzania HIV Impact Survey 2022-2023
TNA	Total Nucleic Acid
UNAIDS	Joint United Nations Programme on HIV and AIDS
VLS	Viral Load Suppression
WHO	World Health Organization
ZAC	Zanzibar AIDS Commission
ZAHRI	Zanzibar Health Research Institute
ZIHHTLP	Zanzibar Integrated HIV, Hepatitis, Tuberculosis, and Leprosy Program

FOREWORD

The Tanzania HIV Impact Survey 2022-2023 (THIS 2022-2023) is the fifth in a historic series of household-based HIV surveys conducted in Tanzania since 2003. This survey included nearly 36,000 participants aged 15 years and older from all 31 regions of the country. It has provided essential data on national HIV incidence, national and regional HIV prevalence, and national and regional prevalence of HIV viral load suppression (VLS) among those living with HIV. THIS 2022-2023 also provided critical information on national and regional progress toward HIV epidemic control—including progress towards achieving the Joint United Nations Programme on HIV and AIDS (UNAIDS) 95-95-95 targets.

THIS 2022-2023 was a successful collaboration with many stakeholders. It was led by the Government of the United Republic of Tanzania through the Tanzania Commission for AIDS (TACAIDS), Zanzibar AIDS Commission (ZAC), and Ministries of Health of the United Republic of Tanzania and the Revolutionary Government of Zanzibar. The National Bureau of Statistics (NBS); Office of Chief Government Statistician (OCGS) Zanzibar; National AIDS, STIs and Hepatitis Control Programme (NASHCoP); and Zanzibar Integrated HIV, Hepatitis, Tuberculosis and Leprosy Program (ZIHHTLP) implemented THIS 2022-2023. The survey was conducted with funding from the United States (US) President's Emergency Plan for AIDS Relief (PEPFAR) with technical assistance from the US Centers for Disease Control and Prevention (CDC) and ICAP at Columbia University. Local partners, including the National Institute for Medical Research (NIMR), Zanzibar Health Research Institute (ZAHRI), Bugando Medical Centre (BMC), President's Office Regional Administration and Local Government (PO-RALG), President's Office Regional Administration and Local Government and Special Department (PO-RALGSD) in Zanzibar, National Public Health Laboratory (NPHL), and others also collaborated on the survey.

We have learned that Tanzania has made great strides toward HIV epidemic control. Knowledge of HIV status, antiretroviral therapy (ART) coverage, and HIV VLS have all improved since the last survey was conducted in 2016-2017, and now nearly 4 in 5 people living with HIV aged 15 years and older have achieved VLS. We have learned that our biggest gap to reaching epidemic control remains in the first 95, or knowledge of HIV status among adults living with HIV. We also learned that some populations have not made the same progress as the rest of the country, and we must find innovative ways to reach these people.

In addition to HIV epidemic status and program progress data, this report provides comprehensive findings around access to and use of services related to HIV and other related health areas. The detailed descriptive statistics and accompanying analyses offer the government, stakeholders, and the public official data to inform planning, policymaking, monitoring, and evaluation of HIV and other health programs.

I encourage planners, policy makers, program managers, and other stakeholders across HIV and related disease domains to utilize these findings to inform decisions. By leveraging the current data presented in this report and conducting additional analyses of the rich dataset generated by the survey, we can enhance our understanding and improve strategies for combating HIV and other diseases.

Dr. Jerome Kamwela
Ag. Executive Director
Tanzania Commission for AIDS

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THIS 2022-2023 was successfully implemented by the NBS in Mainland Tanzania and the OCGS in Zanzibar. The completion of the survey was made possible through the collaborative efforts of many institutions, organizations, and individuals, each contributing significantly and receiving our full gratitude. The NBS and OCGS extend sincere appreciation to the Government of the United Republic of Tanzania, represented by the Ministries of Health both in Mainland Tanzania and Zanzibar, for its support in implementing THIS 2022-2023.

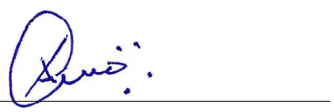
Similarly, we would like to thank TACAIDS and ZAC for their leadership in coordinating the steering committee, which was instrumental to survey's success. Gratitude is also due to NASHCoP and ZIHHTLP for their invaluable leadership and technical support throughout all phases of the survey. Special thanks go to ICAP at Columbia University for its collaboration with both NBS and OCGS in developing and implementing the survey, and to NIMR and ZAHRI for providing the necessary ethical clearance. Furthermore, NPHL and BMC were instrumental in testing survey's blood samples and in performing quality assurance (QA) and validation of testing methods and equipment, and we are grateful for their work.

We also acknowledge the crucial role of US Centers for Disease Control for funding THIS 2022-2023 through PEPFAR and providing technical support. Additionally, Westat is commended for its technical expertise in survey statistics and support in all aspects of electronic data collection and data management. Westat's contribution to capacity building in both survey statistics and electronic data collection and data management is deeply valued.

Numerous individuals have played pivotal roles in the success of this survey. We extend our heartfelt thanks to Dr. Mohamed Jalloh, Dr. George Mgomella, Ms. Sarah Porter, Dr. Alexander Kailembo, Dr. Stephen McCracken, Dr. Rebecca Laws, Dr. Erika Fazito, Dr. Shannon Farley, Ms. Melissa Metz, and Ms. Hanna Chung for their invaluable technical assistance during planning and through implementation phases of the survey. Recognition is also due to ICAP Project Director Dr. Deogratias Morice Kakiziba, Ms. Tepa Nkumbula, and Dr. Abubakary Mziray from ICAP Tanzania; Dr. Albina Chuwa, Mr. Emilian Karugendo, and Ms. Jocelyn Rwehumbiza from NBS; and Mr. Salum Kassim Ali, Ms. Fahima Issa, Ms. Sabina Raphael, and Ms. Aisha Ali Haji from OCGS for their dedication and contributions. Our gratitude is further extended to Dr. Nyambura Moremi from NPHL and Dr. Bernard Mwesiga from BMC.

We are especially thankful to Dr. Jerome Kamwela, Dr. Ahmed Khatib, Dr. Mohamed Dahoma, and Dr. Werner Maokola from TACAIDS, ZAC, ZIHHTLP, and NASHCoP, respectively, for their commitment and hard work, which were crucial to the survey's success. Our deepest appreciation also goes to the writing team at ICAP, CDC Tanzania and CDC Atlanta for their expert preparation of the draft report. In addition, we acknowledge the primary and co-investigators and collaborating partners representatives who participated in the writing workshop and crafted a document that truly reflects the positions of the Government of the United Republic of Tanzania.

Finally, we extend our gratitude to the team of community mobilizers who sensitized the communities to encourage participation in the survey, as well as to the field coordinators, team supervisors, interviewers, and drivers who travelled all over the country to collect the survey data. Appreciation is also due to the local leaders for their invaluable cooperation and support in their communities. Most importantly, we thank the survey participants, who generously opened their doors to our teams and responded to our questions, making this survey possible.



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EXECUTIVE SUMMARY

TOPLINE FINDINGS

1. Annual HIV incidence among adults (defined as individuals aged 15 years and older) in Tanzania was 0.18%, which corresponds to approximately 60,000 new cases of HIV per year among adults.
2. Prevalence of HIV among adults in Tanzania was 4.4%, which corresponds to approximately 1,548,000 adults living with HIV. HIV prevalence was higher among women at 5.6% than men at 3.0%.
3. Prevalence of VLS among all adults living with HIV in Tanzania was 78.0%. VLS prevalence was higher among women at 80.9% than men at 72.2%.
4. Prevalence of VLS among all adults living with HIV in Mainland Tanzania was 78.1%.
5. Tanzania's conditional achievement of the UNAIDS 95-95-95 targets were: 82.7% of adults living with HIV were aware of their status, 97.9% of those aware of their HIV-positive status were on ART, and 94.3% of those on ART achieved VLS.

The survey interviewed almost 36,000, nearly 33,700 of whom consented to have their blood drawn.

SURVEY BACKGROUND

The Tanzania HIV Impact Survey 2022-2023 (THIS 2022-2023) was a household-based national survey among adults (defined as those aged 15 years and older) which measured the impact of the country's national and regional HIV response. THIS 2022-2023, which was conducted from November 2022 through March 2023, offered HIV counseling and testing with return of results and collected information about uptake of HIV prevention, care, and treatment services. THIS 2022-2023 estimated national HIV incidence and national and regional HIV prevalence among adults, as well as national and regional prevalence of HIV VLS, defined as HIV RNA <1,000 copies per mL among adults living with HIV. THIS 2022-2023 provided critical information on national and regional progress toward HIV epidemic control including progress towards achieving the Joint United Nations Programme on HIV/AIDS (UNAIDS) 95-95-95 targets.

THIS 2022-2023 used a two-stage stratified cluster sample design that first selected census enumeration areas (EAs) then households within each EA. EA selection was stratified by region in Mainland Tanzania (n=26), and by island in Zanzibar (n=2), totaling 28 geographic strata.* Due to the heterogeneous nature of the HIV epidemic in Tanzania, the number of EAs selected varied by region, based on HIV prevalence and levels of population VLS (see Chapter 2 and Appendix A). The first stage of sampling selected 566 EAs, with an average of 35 households per EA (Table 2.1). The overall sample size and allocation by regional area were calculated to estimate HIV incidence at the national level among adults aged 15-49 years, and VLS at national and selected regional levels among adults aged 15-49 years living with HIV.

Of 18,586 occupied eligible households in selected EAs, 17,301 (92.7%) completed a household interview (Table 2.2). Among 39,442 eligible adults aged 15 years and older (22,031 women and 17,411 men), 35,957 (90.5%) participated in the individual interview: 93.0% of women and 87.3% of men. Among those interviewed, 33,663 (92.8%; 19,292 women and 14,371 men) also had their blood drawn (Table 2.3).

HIV testing was conducted in each household using a serological rapid diagnostic testing algorithm in accordance with the national guidelines in Tanzania, with laboratory confirmation of seropositive samples using a supplemental assay. For confirmed HIV-positive samples, laboratory-based testing was conducted for quantitative evaluation of viral load and qualitative detection of antiretrovirals (ARVs) (dolutegravir, efavirenz, atazanavir, and lopinavir). A laboratory-based incidence testing algorithm (HIV-1 limiting antigen [LAg]-avidity assay with correction for viral load and detectable ARVs) was used to distinguish recent from long-term infection. Incidence estimates were obtained using the formula recommended by the World Health Organization Incidence Working Group and Consortium for Evaluation and Performance of Incidence Assays.

Survey weights were utilized for all estimates.

Hepatitis B virus (HBV) and hepatitis C virus (HCV) testing was performed for all participants from whom adequate plasma samples were collected (see Chapter 2, section 5: Laboratory-based Biomarker Testing).

In this report, estimates based on a denominator less than 25 have been suppressed. In this executive summary, estimates based on a denominator between 25 and 49 survey participants are indicated by a dagger (†) and should be interpreted with caution. Also, whenever a comparison is made between estimates, 95% confidence intervals (CIs) are presented to show that the CIs do not

* Out of 31 regions in Tanzania, the 5 Zanzibar regions were aggregated into two strata: Pemba (which includes 2 regions: Kaskazini Pemba and Kusini Pemba) and Unguja (which includes 3 regions: Kusini Unguja, Mjini Magharibi, and Kaskazini Unguja). The other 26 regions were treated as separate strata.

overlap. Note that these CIs are not always available in the table. CIs are also presented to show the precision of incidence estimates. Refer to Chapter 2, section 6 for more information.

The survey found there were approximately 60,000 new HIV cases per year among adults.

TOPLINE FINDINGS IN FOCUS

1) Annual HIV incidence among adults aged 15 years and older was 0.18% (95% CI: 0.09%-0.26%), which corresponds to approximately 60,000 (95% CI: 31,000-88,000) new cases of HIV per year among adults. Annual HIV incidence was 0.24% (95% CI: 0.11%-0.37%) among women and 0.11% (95% CI: 0.01%-0.20%) among men (Tables 5.1 and 5.2).

2) HIV prevalence among adults was 4.4%, which corresponds to approximately 1,548,000 adults living with HIV. HIV prevalence was higher among women at 5.6% (95% CI: 5.1%-6.0%) than men at 3.0% (95% CI: 2.7%-3.4%) (Tables 5.2 and 6.2).

3) VLS prevalence among adults living with HIV was 78.0%. VLS prevalence was higher among women at 80.9% (95% CI: 78.4%-83.4%) than men at 72.2% (95% CI: 67.4%-77.1%). Note, these estimates of VLS are among all adults living with HIV regardless of their knowledge of HIV status or use of ART (Table 8.1).

4) VLS prevalence among all adults living with HIV in Mainland Tanzania was 78.1%. Estimates are not reported in Zanzibar and selected regions in Mainland Tanzania because fewer than 25 adults living with HIV were identified in the survey. The regional VLS prevalence varied considerably from 65.8% in Tabora to 93.5%[†] in Tanga (Table 8.1, Figures 8.1.1 and 8.1.2).

UNAIDS 95-95-95 TARGETS

UNAIDS 95-95-95 targets call for 95% of all people living with HIV to know their HIV status, 95% of those who were diagnosed to be on ART, and 95% of those who were receiving ART to have VLS by the year 2025.[*] Progress toward achieving these targets is presented in two ways in this report: as a conditional 95-95-95 and the overall 95-95-95.

The measurement of the 95-95-95 indicators uses self-reported data adjusted with biomarker data indicating that a person living with HIV was aware of their HIV-positive status and on ART. In the ARV-adjusted estimates, adults living with HIV were defined as 'aware' of their HIV-positive status if they reported knowing they were HIV positive before testing as part of THIS 2022-2023 or if they had an ARV detectable in their blood. Adults living with HIV were categorized as 'on treatment' if they reported ART use or if they had an ARV detectable in their blood.

ARV-adjusted 95-95-95: Adults aged 15 years and older

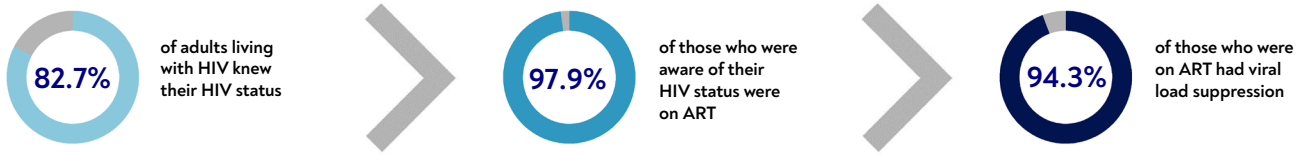
For the conditional 95-95-95, the denominator for the second and third 95 is the value of the preceding 95 (Figure 1, Table 9.1.B, and Figure 9.1.B).

- **Diagnosed:** In Tanzania, 82.7% of adults living with HIV were aware of their HIV status: 84.8% of women and 78.4% of men.

* Joint United Nations Programme on HIV/AIDS (UNAIDS). *Prevailing against pandemics by putting people at the centre.* Geneva: UNAIDS; 2020. https://www.unaids.org/sites/default/files/media_asset/prevailing-against-pandemics_en.pdf. Accessed March 27, 2024.

- **On treatment:** Among those who were aware of their HIV-positive status, 97.9% were on ART: 98.4% of women and 96.7% of men.
- **With viral load suppression:** Among those aware of their HIV status and on treatment, 94.3% had VLS: 94.9% of women and 92.9% of men.

Figure 1
Conditional 95-95-95 achievements among adults living with HIV (ages 15 years and older), THIS 2022-2023



Only 68% of young people living with HIV were aware of their HIV-positive status.

For the overall 95-95-95, the denominator for all three 95s is the overall population of adults living with HIV in Tanzania (Table 9.1.A, Figure 9.1.A). These estimates are limited to the survey population of participants with a positive HIV result for whom data on treatment status and viral load are available.

- **Diagnosed:** In Tanzania, 82.7% of all adults living with HIV were aware of their HIV status: 84.8% of women and 78.4% of men.
- **On treatment:** Among all adults living with HIV in Tanzania, 80.9% were on ART, with a higher proportion among women at 83.4% (95% CI: 80.8%-86.1%) than among men at 75.8% (95% CI: 70.8%-80.7%).
- **On treatment with viral load suppression:** Among all adults living with HIV in Tanzania, 76.3% had achieved VLS on treatment, with a higher proportion among women at 79.2% (95% CI: 76.5%-81.9%) than among men at 70.4% (95% CI: 65.4%-75.4%).

(Please see chapter 9 for a full explanation of the differences between estimates of VLS among people living with HIV, and in the two 95-95-95 cascades).

ARV-adjusted 95-95-95: Young people* aged 15-24 years

Conditional 95-95-95 (Table 9.1.B):

- **Diagnosed:** 67.7% of young people living with HIV were aware of their HIV status, with a lower prevalence among young women, at 59.5% (95% CI: 46.4%-72.7%) than among young men, at 87.3%† (95% CI: 73.4%-100.0%†).
- **On treatment:** Among young people aware of their HIV-positive status, 99.7% were on ART: 99.5% among young women. Estimates are not reported among the young men living with HIV because there were fewer than 25 who were aware of their HIV-positive status.
- **With viral load suppression:** Among the young people living with HIV on ART, 84.8% had achieved VLS: 86.6% among young women. Estimates are not reported among the young men living with HIV because there were fewer than 25 who were aware of their HIV-positive status and on ART.

* The term "young people" includes older adolescents aged 15-19 years and young adults aged 20-24 years. Older adolescents are a distinct population of concern from young adults, but this report uses the terms "young women aged 15-24 years" and "young men aged 15-24 years" when young people are disaggregated by sex.

For the overall 95-95-95 (Table 9.1.A):

- **Diagnosed:** 67.7% of all young people living with HIV were aware of their HIV status, with a lower prevalence among young women at 59.5% (95% CI: 46.4%-72.7%) than among young men at 87.3%† (95% CI: 73.4%-100.0%†).
- **On treatment:** 67.4% of all the young people living with HIV were on ART, with a lower prevalence among young women at 59.2% (95% CI: 46.0%-72.4%) than among young men at 87.3%† (95% CI: 73.4%-100.0%†).
- **On treatment with viral load suppression:** 57.2% of all young people living with HIV in Tanzania had achieved VLS on treatment: 51.3% among young women and 71.5%† among young men.

Over a third of the survey population were young people aged 15-24 years.

Other 95-95-95 analyses by age and sex

1) In contrast to the observed pattern in overall 95-95-95 target achievements for young people, differences by sex were evident among adults living with HIV aged 35-49 years:
   a) A higher percentage of women were aware of their HIV-positive status at 87.0% (95% CI: 83.4%-90.5%) than men at 73.1% (95 CI: 63.9%-82.3%).
   b) A higher percentage of women were on ART at 85.1% (95 CI: 81.2%-88.9%) than men at 69.2% (95 CI: 60.3%-78.2%).
   c) A higher percentage of women achieved VLS on treatment at 81.9% (95 CI: 77.8%-86.0) than men at 64.9% (95 CI: 55.8%-73.9%) (Table 9.1.A).
2) Achievement of the overall 95-95-95 targets was also greater with age. Specifically, among all adults living with HIV aged 15 years and older:
   a) A higher percentage of those aged 50 years and older were aware of their HIV-positive status at 87.7% (95% CI: 84.1%-91.2%) than those aged 15-49 years at 80.5% (95% CI: 77.5%-83.6%).
   b) A higher percentage of those aged 50 years and older were on ART at 87.5% (95% CI: 83.9%-91.1%) than those aged 15-49 years at 78.0% (95% CI: 74.9%-81.2%).
   c) A higher percentage of those aged 50 years and older achieved VLS on treatment at 84.4% (95% CI: 80.6%-88.3%) than those aged 15-49 years at 72.8% (95% CI: 69.4%-76.1%) (see Table 9.1.A).

OTHER KEY FINDINGS

Household characteristics

1) In the survey, 72.7% of the households were headed by men and 27.3% by women. The median household size was 4 (interquartile range [IQR] 3-6), with a median of 2 (IQR 0-3) minors younger than 18 years per household (Table 3.1).
2) Of the de facto household population, which includes individuals who slept in the household the night before the survey, 53.1% were women and girls and 46.9% were men and boys (Table 3.2).
3) Children younger than 15 years constituted two-fifths of the de facto household population in urban areas, with those aged 0-4 years accounting for 16.2% and those aged 5-14 years accounting for 26.0%; and nearly half of the de facto household population in rural settings, with those aged 0-4 years accounting for 16.1% and those aged 5-14 years accounting for 31.0%. Adults aged 15-49 years represented 48.6% of the de facto household population in urban areas and 39.8% in rural settings, while those aged 50 years and older were 10.6% of the de facto household population in urban areas and 13.1% in rural settings (Table 3.3).
4) The proportion of households with a member living with HIV was 8.9%: 9.9% in urban areas and 8.2% in rural settings (Table 3.4 and Figure 3.4).

HIV prevalence among adults aged 15 years and older was 4.4%.

5) Among all households, 7.2% were headed by a person living with HIV. The proportion of households headed by a person living with HIV was higher in female-headed households than in male-headed households: 12.7% (95% CI: 11.3%-14.1%) compared to 4.5% (95% CI: 4.0%-5.1%) (Table 3.5 and Figure 3.5).

Survey population characteristics

1. Adults aged 15-49 years constituted the main group of the survey population, accounting for 81.3%; and those aged 50 years and older, 18.7%. Young people aged 15-24 years comprised over one-third (33.5%) of the survey population (Table 4.1).
2. The survey population was predominantly rural, with 61.5% residing in rural settings and 38.5% in urban areas (Table 4.1)
3. A majority (56.4%) of the survey population were married or living with someone, 29.3% had never married, 8.7% were divorced, and 5.5% were widowed (Table 4.1).
4. Within the survey population, the highest level of schooling attended was primary for 56.9%, secondary for 25.9%, more than secondary for 3.7%, while 13.5% had no formal education (Table 4.1).

HIV incidence

1. Annual HIV incidence among adults aged 15 years and older was 0.18% (95% CI: 0.09%-0.26%). Among adults aged 15-49 years, HIV incidence was 0.21% (95% CI: 0.11%-0.31%): 0.29% (95 CI: 0.13%-0.46%) among women and 0.12% (95% CI: 0.01%-0.23%) among men (Table 5.1).
2. Among young people aged 15-24 years, HIV incidence was 0.17% (95% CI: 0.03%-0.31%). However, the survey was not powered to estimate incidence with confidence among subgroups smaller than the population aged 15-49 years (Table 5.1).

HIV prevalence

1. The overall HIV prevalence among adults aged 15 years and older was 4.4%. HIV prevalence was higher among women at 5.6% (95% CI: 5.1%-6.0%) than men at 3.0% (95% CI: 2.7%-3.4%) (Tables 6.2).
2. By 5-year age groups, the highest HIV prevalence among women was 13.0% for those aged 45-49 years and among men was 8.4% for those aged 50-54 years (Table 6.3 and Figure 6.3).
3. Adults aged 15 years and older living in urban areas had a higher HIV prevalence at 5.0% (95% CI: 4.5%-5.6%) compared to those in rural settings at 4.0% (95% CI: 3.6%-4.3%) (Table 6.2).
4. There were notable state and regional variations:
    a. HIV prevalence was 4.5% in Mainland Tanzania while it was 0.4% in Zanzibar.
    b. In Mainland Tanzania regions, HIV prevalence ranged from 1.7% in Kigoma to 12.7% in Njombe.
    c. Nearly half (12 out of 16) of the regions in Mainland Tanzania had an HIV prevalence below 4.0%.
    d. In the regions of Mbeya, Iringa, and Njombe, HIV prevalence was above 9.0% (Table 6.2, and Figures 6.2.1 and 6.2.2).
5. HIV prevalence varied by marital status, particularly among women. HIV prevalence was 11.5% (95% CI: 9.8%-13.1%) among divorced or separated women, 13.3% (95% CI: 11.5%-15.1%) among widows, 4.3% (95% CI: 3.8%-4.8%) among married women, and 2.9% (95% CI: 2.3%-3.6%) among never married women (Table 6.2).

6. Higher levels of educational attainment correlated with lower HIV prevalence. Adults who had an education beyond secondary school and those who attended up to secondary school without further studies had a lower HIV prevalence at 2.1% (95% CI: 1.0%-3.2%) and 2.3% (95% CI: 1.9%-2.7%), respectively, than those whose education was limited to primary school attendance at 5.2% (95% CI: 4.8%-5.7%) and those who did not have any formal education at 5.4% (95% CI: 4.5%-6.2%) (Table 6.2).
7. Wealth had no consistent association with HIV prevalence. The highest wealth quintile had an HIV prevalence of 3.8%, and the lowest quintile had an HIV prevalence of 4.0% (Table 6.2).

Almost 74% of adults aged 15 years and older reported they had ever received an HIV test.

HIV testing, diagnosis, and treatment status

1. Overall, 73.9% of adults aged 15 years and older reported having ever received an HIV test. A higher proportion of women reported receipt of an HIV test at 78.5% (95% CI: 77.8%-79.3%) compared to men at 68.8% (95% CI: 67.8%-69.8%) (Table 7.1.A-C).
2. Recent HIV testing (in the 12 months prior to the survey) among all the adults who said they were not previously diagnosed with HIV was 38.5%, and varied by age group, sex, and region:
    a. Among adults aged 50 years and older, 27.0% reported they had recently tested. Within this age bracket, 32.6% of women aged 50-54 years reported recent testing. However, recent testing was reported by less than 30% of women in each older 5-year age group, with only 16.8% of women aged 65 years and older reporting recent testing. Among men, recent testing prevalence remained relatively consistent above 30% for each 5-year age group from 50-64 years but was reported by 22.3% of those aged 65 years and older (Table 7.1.A-C).
    b. Among adults aged 15-49 years, 40.9% reported they had recently tested: 44.3% of women and 37.3% of men. Within this age bracket, recent testing rates varied by sex and 5-year age groups. For women, recent testing prevalence ranged from 24.2% among older adolescent girls aged 15-19 years to 57.1% among women aged 25-29 years. For men, recent testing prevalence ranged from 10.2% among older adolescent boys aged 15-19 years to 51.8% among men aged 30-34 years (Table 7.1.A-C).
    c. Regionally, recent testing ranged from 28.6% in Manyara to 49.1% in Ruvuma for Mainland Tanzania and from 28.6% in Kaskazini Pemba to 49.1% in Kusini Unguja in Zanzibar (Table 7.1.C).
3. A portion of those who tested HIV positive in the survey reported they were not previously aware of their status:
    a. Among the adults aged 15 years and older who tested HIV positive in the survey, 17.3% were unaware of their HIV status: 15.2% of women and 21.6% of men (Tables 7.2.A-C).
    b. Among young people aged 15-24 years who tested HIV positive in the survey, 32.3% were unaware of their HIV status: 40.5% of young women and 12.7%† of young men (Tables 7.2.A-C).
4. Among the adults living with HIV aged 15 years and older who did not report being aware of their HIV-positive status, 25.0% had an ARV detectable in their blood. Among adults living with HIV aged 15 years and older who were aware of their HIV status but did not report taking ART, 18.6%† had an ARV detectable in their blood, indicating under-reporting of treatment uptake (Table 7.3.C).

Viral load suppression among adults living with HIV

1. Overall, VLS prevalence was 78.0% among all adults living with HIV. VLS prevalence was higher among women at 80.9% (95% CI: 78.4%-83.4%) than men at 72.2% (95% CI: 67.4%-77.1%) (Table 8.1).

34% of young people aged 15-24 years had discriminatory attitudes against people living with HIV.

2. When disaggregated by age and sex:
   a. VLS prevalence among women ranged from 54.5% among those aged 15-24 years to 87.3% among those aged 65 years and older.
   b. Among men, VLS prevalence ranged from 57.0% among those aged 25-34 years to 92.8%† among those aged 65 years and older (Table 8.2).
3. Examining VLS by 10-year age groups, VLS prevalence was lower among men aged 35-44 years at 62.9% (95% CI: 52.1%-73.8%) than among women in the same age group at 84.0% (95% CI: 79.3%-88.7%) (Table 8.2).
4. By region, among adults aged 15 years and older, VLS ranged from 65.8% in Tabora to 93.5%† in Tanga. However, in certain regions, the sample sizes of adults living with HIV were too small for reliable estimates of VLS prevalence (Table 8.1).
5. There were no marked disparities in VLS prevalence based on education levels or wealth quintiles. Specifically, VLS prevalence was 75.2% among individuals with no formal education and 74.6% among those whose highest level of education was secondary school attendance. VLS prevalence was also similar across wealth quintiles (Table 8.1).
6. Among adults aware of their HIV-positive status and receiving ART (based on self-reported data and the detection of ARVs in blood), VLS prevalence was 94.3% (Table 8.1).
7. Population viremia, defined as the proportion of adults aged 15 years and older with a viral load ≥1,000 HIV RNA copies/mL (see Chapter 8) was 1.0% in Mainland Tanzania and 0.1% in Zanzibar. In Mainland Tanzania, population viremia ranged regionally from 0.2% in Tanga to 1.9% in Tabora (Table 8.3 and Figure 8.3).
8. Among adults living with HIV, the proportion with a viral load <200 copies/mL was 74.4%, with a higher proportion among women at 77.4% (95% CI: 74.6%-80.1%) than among men at 68.5% (95% CI: 63.6%-73.4%). Among those on ART (based on self-report and detection of ARVs in blood), the proportion with a viral load <200 copies/mL was 90.7% (Table 8.4).
9. Among adults living with HIV in care, 83.4% reported that they had ever received a viral load test; of those, 52.5% reported that they had received the results of their last viral load test. A higher proportion of urban residents in care reported having received a viral load test than those in rural settings, at 88.8% (95% CI: 86.0%-91.5%) and 79.5% (95% CI: 76.1%-82.9%), respectively (Table 8.5).

Clinical features of adults living with HIV

1. The median CD4 count among adults living with HIV was 554 cells/µL (IQR: 380-743): 599 cells/µL (IQR: 421-793) among women and 475 cells/µL: (IQR: 318-623) among men (Table 10.1).
2. CD4 count variations were observed based on the individuals' awareness of their HIV status and treatment status:
   a. Those unaware of their HIV status had a median CD4 count of 372 cells/µL (IQR: 239-556).
   b. Individuals aware of their status but not on ART had a median of 350 cells/µL (IQR: 194-537†).
   c. For those aware and on ART, the median CD4 count was 589 cells/µL (IQR: 426-777) (Table 10.1 and Figure 10.1).
3. Almost half of those diagnosed with HIV for the first time during the survey (based on self-report and ARV detection) presented with late diagnoses, including 30.3% with CD4 counts indicating immunosuppression (200-349 cells/µL) and 16.7% with advanced HIV disease (<200 cells/µL) (Table 10.2).
4. Based upon self-report, 98.7% of adults living with HIV who had started on ART were still taking it, and there were no marked differences by age, sex, or duration of being on treatment since ART initiation (Table 10.3).

Stigma and discrimination towards people living with HIV

1. Among adults aged 15 years or older, 25.8% exhibited two discriminatory attitudes towards individuals living with HIV.
    a. There was a higher prevalence of reporting two discriminatory attitudes in Zanzibar at 37.9% (95% CI: 32.9%-42.9%) than in Mainland Tanzania at 25.3% (95% CI: 24.1%-26.5%).
    b. Of the specific manifestations of discrimination, 22.4% said that they wouldn't buy fresh vegetables from a shopkeeper or vendor living with HIV, and 12.7% said that they did not think children living with HIV should be able to attend school with their children without HIV (Table 11.1).
2. The prevalence of exhibiting two discriminatory attitudes was 34.1% among young people aged 15-24 years. By 5-year age group, the prevalence of reporting two discriminatory attitudes peaked among those aged 15-19 years at 37.3% (Table 11.1).

Approximately 89% of women living with HIV who delivered a child in the previous 12 months were aware of their status during pregnancy.

Prevention of mother-to-child transmission of HIV (PMTCT)

1. Overall, 98.2% of women of childbearing age (ages 15-49 years, henceforth referred to as women in this section) who had a live birth in the 3 years before the survey reported attending at least one antenatal care (ANC) visit for their most recent birth (Table 12.1).
2. When disaggregated by residence, education, and wealth:
    a. Urban women reported higher ANC attendance at 99.2% (95% CI: 98.7%-99.7%) than rural women at 97.6% (95% CI: 97.0%-98.2%).
    b. ANC attendance correlated with educational attainment: Women with more than a secondary school education had a reported ANC attendance of 100% (95% CI: 100%-100%). Those who attended up to secondary school reported ANC attendance at 99.3% (95% CI: 98.8%-99.8%). In contrast, attendance rates were lower among women whose highest educational attainment was primary school at 98.0% (95% CI: 97.4%-98.6%) and among those with no formal education at 96.5% (95% CI: 95.0%-98.0%).
    c. Women in the lowest wealth quintile reported lower ANC attendance at 95.9% (95% CI: 94.8%-97.1%). In contrast, ANC attendance for women in the higher wealth quintiles was consistently above 98.5% (with 95% CI ranges from 97.6%-99.3% and 98.9%-100%).
    d. Regionally, ANC attendance varied, with Simiyu at 94.3%, while several regions achieved 100% (Table 12.1).
3. Most women who delivered in the 12 months before the survey were either tested for HIV during ANC, or already knew of their HIV-positive status prior to attending ANC.
    a. Through HIV testing in the ANC, 86.6% received an HIV-negative result, and 0.6% received an HIV-positive result. An additional 1.8% of women entered ANC already aware of their HIV-positive status. Thus, a total of 88.9% were aware of their HIV status. However, 11.1% of women either reported their HIV status was unknown or they did not report on awareness of their status (Table 12.2 and Figure 12.3).
    b. Over 2.0% of women learned about their HIV-positive status for the first time through ANC testing in Katavi (2.3%) and Njombe (2.1%) (Table 12.2).
4. There was high ART uptake among women living with HIV who were aware of their status who delivered in the 12 months before the survey.
    a. Overall, 98.8% reported that they took ART during their most recent pregnancy.
    b. The majority, 74.8%, were already on ART before pregnancy (Table 12.3 and Figure 12.3).
5. Breastfeeding patterns among women living with HIV who gave birth in the previous 3 years were assessed at the time of the survey:
    a. A majority, 62.4%, reported that they were currently breastfeeding their youngest child, while 1.2% reported that they had never breastfed.

Less than 6.4% of adults had heard of pre-exposure prophylaxis (PrEP) to prevent HIV acquisition.

   b. The survey found that 94.3% of women with infants aged 4-5 months were currently breastfeeding, with a lower breastfeeding prevalence among those with older infants (Table 12.4).
6. Infant HIV testing: Among infants born to women living with HIV in the 3 years before the survey, 62.3% were tested for HIV before 2 months of age and another 25.0% were tested between 2 and 12 months of age (Table 12.5).
7. VLS prevalence varied among women living with HIV of childbearing age by pregnancy and breastfeeding status:
   a. VLS prevalence was higher among women who had ever been pregnant at 81.3% (95% CI: 78.3%-84.3%) than among those who had never been pregnant at 58.5% (95% CI: 44.5%-72.4%).
   b. Among those currently breastfeeding, VLS prevalence was 85.7% (Table 12.6 and Figure 12.6).

HIV risk factors and prevention interventions

1. Early sexual debut (sexual intercourse before the age of 15 years) was reported by 7.6% of adults aged 15 years and older (Table 13.1).
   a. The proportion reporting early sexual debut was higher among men at 9.1% (95% CI: 8.5%-9.8%) than women at 6.3% (95% CI: 5.7%-6.9%) (Table 13.1).
   b. HIV prevalence among adults with an early sexual debut was higher for women at 7.7% (95% CI: 5.9%-9.5%) than for men at 2.4% (95% CI: 1.5%-3.3%) (Table 13.2).
2. Among those who had two or more sexual partners in the last year, HIV prevalence was higher among women at 12.1% (95% CI: 9.6%-14.7%) than men at 3.0% (95% CI: 2.3%-3.6%) (Table 13.2).
3. For young people aged 15-24 years, the survey highlighted variations in early sexual debut, with analyses by sex, place of residence, region, level of education attainment, and wealth:
   a. Overall, 9.2% reported an early sexual debut, with a higher prevalence among young men at 12.9% (95% CI: 11.6%-14.2%) than young women at 5.9% (95% CI: 5.0%-6.7%) (Table 13.3).
   b. The proportion reporting early sexual debut was higher in Mainland Tanzania at 9.5% (95% CI: 8.6%-10.3%) than in Zanzibar at 2.3% (95% CI: 0.5%-4.1%). Within Mainland Tanzania, the prevalence of early sexual debut varied widely by sex and region, ranging from 1.1% among young women in Kilimanjaro to 11.3% in Morogoro and Kigoma, and from 4.6% among young men in Rukwa to 21.8% in Dodoma.
   c. A higher proportion of young women reported an early sexual debut in rural settings at 7.4% (95% CI: 6.2%-8.7%) than in urban areas at 3.6% (95% CI: 2.6%-4.7%).
   d. The level of education was inversely related to the prevalence of early sexual debut, ranging from 3.1% among young people with more than a secondary education to 18.7% among those with no formal education. Similarly, a gradient was observed with wealth, ranging from 4.6% among those in the highest wealth quintile to 12.8% among those in the lowest wealth quintile (Table 13.3).
4. Among adults aged 15 years and older who reported having sex in the previous 12 months, 33.7% reported that they had had sex with a nonmarital, noncohabitating partner: 25.7% of women and 41.9% of men. Among these, 25.9% reported condom use during their last sexual encounter with such a partner: 20.8% of women and 29.1% of men (Tables 13.4.A-C and Figure 13.4).
5. Among men aged 15 years and older, 56.8% reported they had a medical circumcision, 30.2% a nonmedical circumcision, and 13.0% reported they were uncircumcised. Regional and residential disparities were evident:

   a. In Mainland Tanzania, the proportion of uncircumcised men varied widely from a low of 0.0% in Pwani (95% CI: 0.0%-0.0%) to a high of 50.3% in Rukwa (95% CI: 42.7%-57.9%). In Mainland Tanzania, 15 of 26 regions had not reached the male circumcision target of 95% by 2025.
   b. The proportion of uncircumcised men was substantially higher in rural areas at 17.4% (95% CI: 15.6%-19.3%) than in urban areas at 5.4% (95% CI: 4.3%-6.6%) (Table 13.5).
6. Awareness of pre-exposure prophylaxis (PrEP) to prevent HIV acquisition among adults was 6.4%. Within the subgroup of HIV-negative individuals who knew about PrEP, 54.7% said that they would be willing to take it, while 7.5% reported that they had previously taken it (Tables 13.6-13.8).

Little more than half of the people living with HIV reporting receiving TB symptom screening at their last HIV care-related clinic visit.

Other health concerns: cervical cancer, hepatitis B and hepatitis C, noncommunicable conditions, and tuberculosis

1. Overall, 33.2% of women living with HIV (ages 15 years and older) reported they had ever been screened for cervical cancer, with 2.6% of these women indicating they had received an abnormal result (Table 14.1).
2. The proportion of women reporting they had ever been screened for cervical cancer was lower in rural areas at 26.6% (95% CI: 21.6%-31.6%) than in urban areas at 41.1% (95% CI: 35.9%-46.3%) (Table 14.1).
3. The prevalence of acute or chronic hepatitis B among adults was 3.5%: 2.7% among women and 4.4% among men. The prevalence of acute or chronic hepatitis B was higher among adults living with HIV at 6.2% (95% CI: 4.7%-7.7%) than adults without HIV at 3.4% (95% CI: 3.1%-3.7%) (Table 14.3).
4. Vaccination against hepatitis B was reported by 0.8% of adults, with similar percentages among women and men (Table 14.4).
5. Hepatitis C prevalence was 0.1% among adults and 0.5% among adults living with HIV (Table 14.5).
6. Among adults who attended a tuberculosis (TB) clinic in the 12 months before the survey, most (60.4%) reported they were tested for HIV during the visit or already knew they were HIV positive (5.4%). The remainder, 34.2%, reported that they were not tested and did not know their HIV status (Table 14.6 and Figure 14.6).
7. Among adults living with HIV, 15.1% reported that they had visited a TB clinic in the previous 12 months, and among these, 11.3% said they received a TB diagnosis. The proportion of adults living with HIV who reported receiving a TB diagnosis varied by sex and place of residence, ranging from 8.5% of women to 17.2% of men and from 7.9% in urban settings to 14.5% in rural areas (Table 14.7).
8. Among adults living with HIV, 53.5% reported that they had received symptom screening for TB at their last HIV care-related clinic visit (Table 14.8 and Figure 14.8).

GAPS AND UNMET NEEDS

Achieving the 95-95-95 targets:

Through concerted efforts and significant investment, and with the support of its partners with regards to the conditional 95-95-95 targets, Tanzania has met the second 95 target, with well over 95% of those aware of their HIV-positive status receiving ART. The country is also very close to reaching the third target of ensuring 95% of those on treatment achieve VLS, aiming to meet this benchmark ahead of the 2025 target date.

Nearly 40% of infants born to women living with HIV were not tested for HIV within the recommended 2 months of age.

1. Yet, notable challenges remain, particularly in identifying and supporting people living with HIV who are unaware of their status. An estimated 17% of adults living with HIV did not know their status, nearly 17% of whom had advanced HIV disease. Young women aged 15-24 years and men aged 35-49 years were disproportionately unaware of their HIV-positive status, representing a significant portion of the undiagnosed HIV population.
2. Disparities achieving VLS among those on treatment were also evident among young people aged 15-24 years and men aged 25-44 years.
3. The shortfall in awareness of HIV-positive status and failure to achieve VLS among certain subgroups threaten reaching the UNAIDS' 2030 goal of ending the AIDS epidemic. Failure to suppress viral replication in undiagnosed people living with HIV and in those who find it difficult to consistently adhere to treatment allows for transmission of HIV to others (population viremia). The survey documented an overall population viremia of 1% in Mainland Tanzania, and higher in some regions, representing an ongoing risk of HIV acquisition among the HIV-negative population. In some regions, such as Tabora, population viremia levels were as high as in regions with substantially higher HIV prevalence.

HIV incidence and prevalence:

1. Tanzania experienced approximately 60,000 new adult HIV cases annually, highlighting the magnitude of the challenge achieving the national goal of zero new infections.
2. Among adults aged 15 years and older, HIV prevalence among women was nearly twice that of men.
3. The prevalence of HIV was substantially higher among divorced, separated, and widowed women compared to those who have never been married or are single, pinpointing a group that might need tailored supportive services.
4. In Mainland Tanzania, HIV prevalence remained particularly high in the regions Mbeya, Iringa, and Njombe, where it surpassed 9.0%.
5. Educational disparities in HIV prevalence were evident. Adults who had no formal education or who did not attend school beyond the primary level had more than twice the prevalence of those with higher levels of education.

Gaps in the delivery and uptake of prevention interventions:

1. While antenatal care attendance was generally high, there was variation by region and education level.
2. A gap existed in the proportion of women who reported awareness of their HIV status during their last pregnancy, with more than one out of 10 having an unknown HIV status.
3. Approximately 20% of the pregnant women living with HIV did not have VLS, highlighting the need for adherence support.
4. Nearly 40% of infants born to women living with HIV were not tested for HIV within the recommended 2 months of age, falling short of the 95% prevention of mother-to-child transmission (PMTCT) target.*
5. Early sexual debut among young people aged 15-24 years was more commonly reported in certain regions, rural settings, and was higher among those with lower education levels and from the lowest wealth quintile.
6. Three quarters of adults who reported having sexual encounters with nonmarital, noncohabitating partners in the previous 12 months did not use a condom the last time they had sex, highlighting the importance of continued condom promotion and access.
7. Nearly 58% of the regions on Mainland Tanzania had not met the male circumcision target, with less than 95% of men circumcised.

* Joint United Nations Programme on HIV/AID. 2025 AIDS TARGETS. Online at https://www.unaids.org/sites/default/files/2025-AIDS-Targets_en.pdf. Accessed February 13, 2024.

8. Awareness of PrEP was low; more than 90% of adults had not heard of PrEP. However, more than half of those who had heard of this prevention method expressed a willingness to use PrEP, signaling an untapped potential for HIV prevention among individuals at risk for HIV acquisition.

Specific differentiated service delivery models should be tailored to diagnose, link, and retain young people and men.

Gaps in advancing the health and wellbeing among people living with HIV:

1. Stigma and discrimination against people living with HIV persist, with a quarter of adults expressing discriminatory attitudes towards such individuals.
2. One out of six people living with HIV and in care reported they had not had a viral load test and more than half of those who had did not receive their most recent viral load test results, hindering effective engagement in their healthcare, the opportunity to advance their own health, and the prevention of HIV transmission.
3. Two-thirds of women living with HIV aged 15 years and older reported they had never received cervical cancer screening services. In rural areas, three-fourths of women indicated they had never received screening.
4. Less than one in 100 adults had been vaccinated against hepatitis B. This low uptake of hepatitis B vaccination emphasizes the importance of vigorous vaccination efforts.
5. Reported receipt of HIV/TB co-screening services was approximately half the global and national targets. Specifically, the targets aim for universal HIV testing of individuals not already aware of their HIV-positive status when visiting a facility for TB services, and universal TB symptom screening for people living with HIV at every health facility visit.

PROGRAMMATIC RESPONSES AND RECOMMENDATIONS FROM THE GOVERNMENT OF THE UNITED REPUBLIC OF TANZANIA*

The United Republic of Tanzania continues to demonstrate a deep commitment in its HIV response. Achievements such as meeting the second of the three UNAIDS 95-95-95 targets ahead of 2025 shows that access to effective treatment programs for those aware of their HIV-positive status is attainable.

Programmatic interventions focused on key diagnosis, treatment, and VLS indicators:

1. Despite this accomplishment, increased efforts are needed to close programmatic gaps and reach 95-95-95 goals as quickly as possible. Improved programmatic interventions are needed to increase achievement of the first 95, which includes scaling up evidence-based interventions like index testing and social network strategies. In addition, innovative practices like status neutral testing and self-testing needs to be implemented at scale to increase HIV testing services (HTS) and linkage to other HIV prevention interventions. Many gaps remain for case finding in Tanzania, so new approaches and efforts are needed by all stakeholders (eg, Government of Tanzania, multi-lateral organizations, donors, and implementing partners) to reach people who have been missed by current HTS approaches.
2. Improving awareness of HIV-positive status should remain a top priority. Case finding efforts should be enhanced to identify those who are unaware of their HIV-positive status. Programmatic efforts for HIV case finding need to adapt to find people who are currently being missed. Interventions need to be tailored to people's needs, preferences, and expectations to

* Please note that the programmatic and policy recommendations and directives herein are provided by the Government of the United Republic of Tanzania through the Tanzania Commission for AIDS (TACAIDS), the Zanzibar AIDS Commission (ZAC), and the Ministries of Health of the United Republic of Tanzania and the Revolutionary Government of Zanzibar. These recommendations are not those of the funding agency or non-governmental collaborative partners.

HIV testing services will continue to be prioritized at youth-centric locations, like educational institutions and sports areas.

increase uptake. Programmatic adaptations need to be evidence-based, client-centered, and targeted to encourage people who do not know their HIV status to test for HIV.

3. While second 95 achievement has been met, programs must continue to strengthen services to link and initiate people onto ART. Tanzania has done well to offer differentiated service delivery options to people on ART, including multi-month dispensing, but other models, such as community drug distribution points, need to be explored. Simplifying the process of initiating and staying on ART needs to be prioritized for people living with HIV.
4. Specific differentiated service delivery models that are tailored to diagnose, link, and retain priority groups—including young people and men—on treatment should improve their health outcomes and reduce the risk of HIV acquisition among their partners.
5. Tanzania is close to reaching the third 95, but sustaining this achievement is critical. Expanded access to viral load testing and receipt of results can empower people living with HIV to live positively and strive to achieve undetectable viral loads for their own health, as well as to protect their partners and children from HIV acquisition. Improved counseling and messaging to clients is urgently needed to better engage ART clients in their own care.

Preventing mother-to-child HIV transmission and enhancing early infant HIV diagnosis

Efforts to prevent mother-to-child transmission of HIV and enhance early infant diagnosis (EID) are essential components of the comprehensive approach to maternal and child health in Tanzania.

1. Strengthening safer pregnancy strategies among women of reproductive age to progress toward the elimination of maternal-to-child HIV transmission.
    a. Investigating the factors contributing to the lack of self-reported HIV status awareness during pregnancy is crucial for addressing gaps in knowledge.
    b. Expanding HIV testing at points providing sexual and reproductive health (SRH) services can enhance the detection of HIV-positive status among childbearing women.
    c. Ensuring the availability of optimal treatment for women prior to conception should lead to improved health outcomes for mothers and their babies.
    d. Retesting mothers for HIV during antenatal care visits, delivery, and breastfeeding periods could identify women who acquire HIV during or shortly after pregnancy and provide an opportunity to initiate ART and reduce the exposure of infants to HIV.
    e. Integrating scientifically validated interventions, such as PrEP, within SRH and PMTCT settings, will bolster prevention measures during and around the time of pregnancy planning.
2. Enhancing Early Infant Diagnosis (EID):*
    a. Tanzania aims to bolster EID within two months of birth to improve the health trajectory of exposed infants.
    b. Integrating EID into postnatal care, immunization schedules, and community outreach programs ensures a comprehensive approach to infant health.
    c. Utilizing mentor mothers to maintain contact with and support mother-infant pairs is vital for continuity of care.
    d. Promptly registering exposed infants within the first week of life is needed for timely initiation of any required interventions, such as infant prophylaxis and co-trimoxazole prophylaxis when necessary.
    e. Enhancing the point-of-care testing for EID will facilitate immediate diagnosis and treatment, which is crucial for infants' long-term health.

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* The United Republic of Tanzania (URT) Ministry Of Health (MOH), Tanzania Mainland. *Tanzania Elimination of Mother to Child Transmission of HIV Strategic Plan II 2018 – 2021.* Dodoma, Tanzania: URT MOH; 2018 . https://platform.who.int/docs/default-source/mca-documents/policy-documents/plan-strategy/TZA-RH-43-01-PLAN-STRATEGY-2018-eng-Final-eMTCT-Plan-II-2-TJK-WHO-inputs.pdf. Accessed June, 2024.

By adhering to these strategic priorities, Tanzania can continue to reduce the incidence of HIV among newborns and improve the overall wellbeing of mothers and children.

Care services that cater to the aging population living with HIV should be developed.

Interventions to prevent new HIV infections:

1. To bridge the programmatic gaps among youth, HTS must be made available at youth-centric locations, like educational institutions and sports areas. Moreover, engagement with young people should be intensified through platforms like social media, to not only increase general HIV status awareness but to substantially enhance the detection of HIV-positive status among young people living with HIV.
2. There is a pressing need for further investments in social behavioral change communication and advocacy. These should aim to postpone the initiation of sexual activity among adolescents and equip them with the necessary skills and interventions to protect themselves from HIV. Additionally, efforts should be made to increase the acceptance and utilization of comprehensive HIV testing, prevention, and treatment services among adults.
3. In addition, other HIV prevention interventions need to reach populations that are currently underserved and would benefit from these programs, including voluntary medical male circumcision and PrEP. This requires precise, region-specific implementation plans and resource allocation to ensure these life-saving interventions are accessible to the sub-populations most in need.

Interventions to improve the quality of life of people living with HIV and those with or at risk of other serious illnesses:

1. Leveraging community organizations: Community-based organizations, including civil society, faith-based groups, and networks of people living with HIV, are critical allies in dismantling stigma and enhancing engagement with HIV services for varied population groups. Strategic initiatives should be undertaken to ensure these organizations are integrally involved in the planning, assessment of needs, and execution of HIV programs, thereby aligning services closely with community needs and enhancing their effectiveness.
2. Enhancing support services: It is crucial to augment comprehensive psychosocial counseling and therapeutic services to support individuals living with HIV. Strengthening interventions to counter stigma and discrimination in both healthcare settings and the community could potentially increase disclosure of HIV status and adherence to ART.
3. Strengthening integration with sexual health and reproductive services: The integration of HIV and sexual and reproductive health services needs to be reinforced, particularly the accessibility and quality of cervical cancer screening for women living with HIV, with an emphasis on expanding these services in rural settings.
4. Addressing the needs of an aging population living with HIV: As life expectancy increases, it is imperative to develop care services that cater to the aging population living with HIV, including the management of prevalent noncommunicable diseases.
5. TB/HIV co-infection screening and treatment: A reinvigorated effort towards the co-management of TB and HIV is required. This includes enhancing the integration of screening, state-of-the-art TB preventive therapy, diagnostics, and treatment of TB among people living with HIV.
6. Management of viral hepatitis: There is a pressing need to advance the management of hepatitis B and hepatitis C, focusing on educating, screening, and vaccinating at-risk populations for hepatitis B to curb the spread of these infections.

Tailored strategies are needed to address disparities in service access and uptake based upon urban versus rural residency, educational attainment, and economic status.

By prioritizing these interventions, Tanzania aims to improve the health outcomes of individuals living with HIV and to address the broader health risks associated with co-infections and other serious illnesses.

CONCLUSION

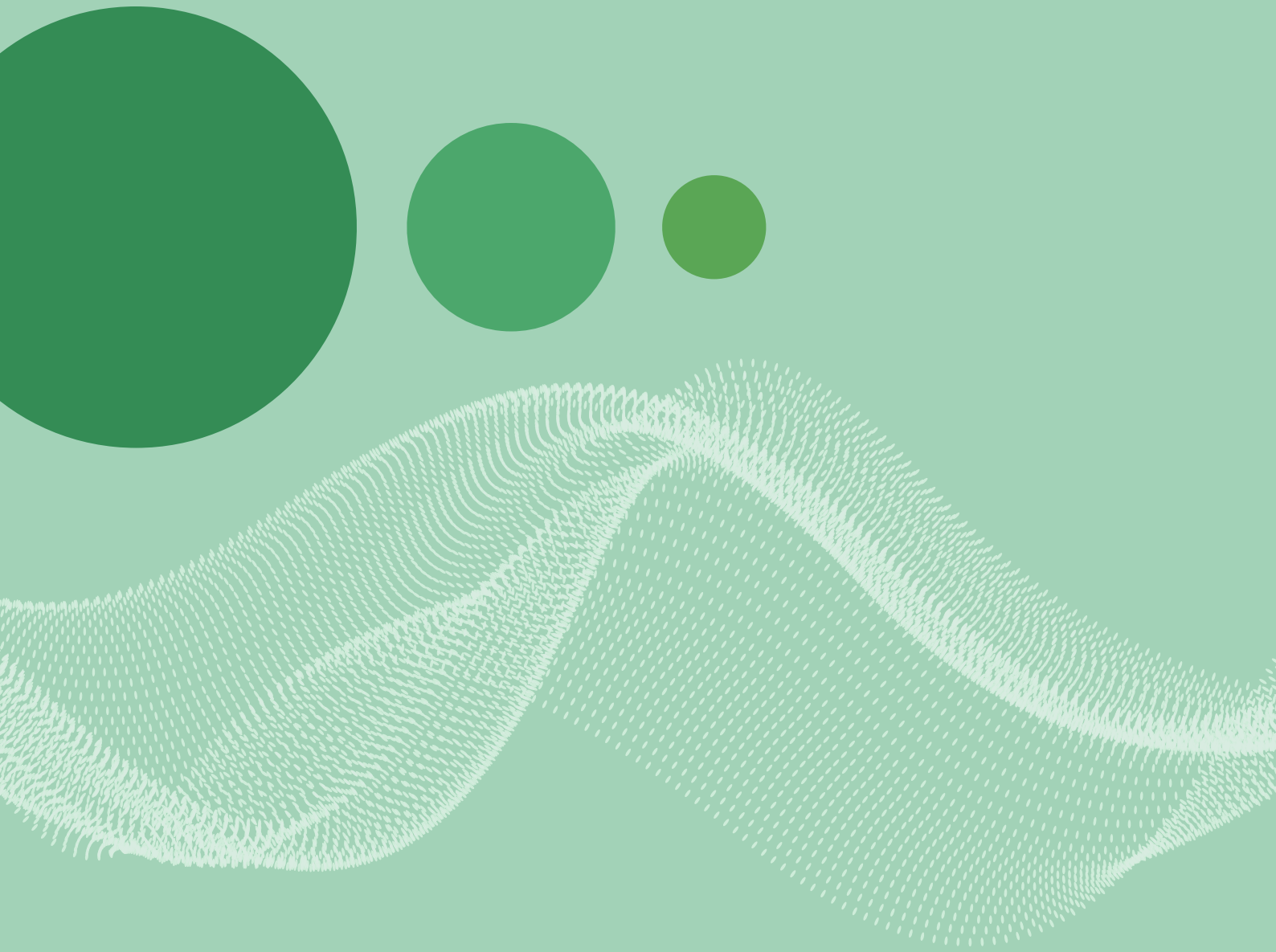
THIS 2022-2023 has provided pivotal insights into current state of Tanzania's HIV response. With some programmatic targets met, the survey also indicates that there are clear opportunities for strategic enhancement and focus.

- The attainment of the second UNAIDS 95-95-95 target highlights the effective treatment access for adults diagnosed with HIV. The final 95 target is within reach, signaling the effectiveness of ongoing support for those in treatment to achieve VLS.
- National strategies are directed at achieving and exceeding the global 95-95-95 HIV targets and aim to eliminate new HIV infections, with initiatives grounded in present-day evidence and best practices.
- The survey reflects high antenatal care attendance, indicative of successful outreach and service provision to expectant mothers. Additionally, male circumcision objectives have been met in more than 40% of the regions in Mainland Tanzania, indicating both an achievement in combination HIV prevention efforts, and the task still ahead.

However, the survey also illuminated several challenges:

- The disproportionately higher HIV prevalence in women calls for targeted, evidence-based interventions to prevent new infections, especially among young women.
- There are discernible gaps in the detection, treatment, and achievement of VLS, especially among young adults and men aged 25-34 years. Customized programs are necessary to engage these groups effectively, thereby enhancing their health outcomes and curtailing HIV transmission.
- Disparities in reaching Tanzania's health goals—evident across various regions and demographic groups—are shaped by factors such as urban versus rural residency, educational attainment, and economic status. This highlights the necessity for tailored strategies that address the distinct needs of individuals and communities in their specific sociodemographic contexts.

The survey underscores the multifaceted nature of Tanzania's response to HIV and emphasizes the need for sustained, evidence-based, and adaptable strategies to cater to the diverse needs of the population, setting the stage for continued improvements in public health.



1. INTRODUCTION

1.1 BACKGROUND

The Population-based HIV Impact Assessment (PHIA) is a multicountry project funded by the United States (US) 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 area HIV-related parameters, including progress toward the achievement of the Joint United Nations Programme on HIV and AIDS (UNAIDS) 95-95-95 targets for 2025 and will guide policy and funding priorities.*

In Tanzania, the survey was branded as the Tanzania HIV Impact Survey 2022-2023 (THIS 2022-2023). It was led by the Government of the United Republic of Tanzania through the Tanzania Commission for AIDS (TACAIDS), Zanzibar AIDS Commission (ZAC), and Ministries of Health of the United Republic of Tanzania and the Revolutionary Government of Zanzibar. The National Bureau of Statistics (NBS); Office of Chief Government Statistician (OCGS) Zanzibar; National AIDS, STIs and Hepatitis Control Programme (NASHCoP); and Zanzibar Integrated HIV, Hepatitis, Tuberculosis and Leprosy Program (ZIHHTLP) implemented THIS 2022-2023. The survey was conducted with funding from PEPFAR with technical assistance from the US Centers for Disease Control and Prevention (CDC) and ICAP at Columbia University. Local partners, including the National Institute for Medical Research (NIMR), Zanzibar Health Research Institute (ZAHRI), Bugando Medical Centre (BMC), President's Office Regional Administration and Local Government (PO-RALG), President's Office Regional Administration and Local Government and Special Department (PO-RALGSD) in Zanzibar, National Public Health Laboratory (NPHL), and others also collaborated on the survey.

1.2 SURVEY OVERVIEW

THIS 2022-2023 was a household-based national survey among adults (defined as those aged 15 years and older) that measured the status of Tanzania's national HIV response. It was conducted from November 2022 through March 2023. THIS 2022-2023 offered home-based HIV testing and counseling (HBTC) with return of results and collected information about households and individuals' backgrounds, and the uptake of HIV care and treatment services. THIS 2022-2023 estimated national HIV incidence, the national and regional HIV prevalence, and the prevalence of viral load suppression (VLS) defined as HIV RNA <1,000 copies/mL among all adults living with HIV in Tanzania.

With its focus on measuring key biological endpoints in a nationally representative sample of the population, THIS 2022-2023 provides direct estimates of HIV-infection risk and burden, hepatitis B virus (HBV) and hepatitis C virus (HCV) burden, the effectiveness and population-level impact of HIV-related prevention, care, and treatment interventions implemented in the country, and Tanzania's progress toward the achievement of the UNAIDS 95-95-95 targets.

1.3 SURVEY OBJECTIVES

The goal of the survey was to assess the status of the HIV epidemic in Tanzania as well as 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.

The specific objectives of the survey were :

- To estimate the regional prevalence of VLS among adults living with HIV
- To generate national HIV incidence estimates
- To measure national and regional HIV prevalence
- To collect high-quality data on the prevalence of HIV-related risk behaviors, knowledge, and attitudes
- To explore the behavioral and demographic determinants of HIV incidence and prevalence

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* Joint United Nations Programme on HIV/AIDS (UNAIDS). *Prevailing against pandemics by putting people at the centre*. Geneva: UNAIDS; 2020. https://www.unaids.org/sites/default/files/media_asset/prevailing-against-pandemics_en.pdf. Accessed February 13, 2024

- To assess health response coverage by gathering data on the uptake and barriers to uptake, of HIV-related services and exposure to HIV interventions
- To produce weighted estimates of the prevalence of primary and secondary antiretroviral (ARV) drug resistance in adults living with HIV
- To document the country's progress towards achievement of UNAIDS 95-95-95 targets
- To determine the prevalence of HBV infection and HCV infection

2. SURVEY DESIGN, METHODS, AND RESPONSE RATES

THIS 2022-2023 was a nationally representative, cross-sectional, two-stage, population-based survey of households across Tanzania. Its target population was adults (defined as individuals aged 15 years and older for the purposes of the survey).

2.1 SAMPLE FRAME AND DESIGN

THIS 2022-2023 is a household-based, cross-sectional survey designed for individuals aged 15 years and older, using a two-stage cluster sample approach that first selected census enumeration areas (EAs), then households within each EA. The sampling frame was comprised of all EAs of Tanzania based on the 2022 Population and Housing Census data obtained from Tanzania National Bureau of Statistics (NBS), which included 104,188 EAs, and 14,966,262 households. The first stage selected EAs (clusters) using a probability proportional to size (PPS) method, stratified by geographical regions. However, because HIV prevalence varies widely across Tanzania's 31 regions, from below 0.2% to over 11%, a very large sample size would be required to capture accurate estimates. Consequently, modifications were made to the sampling design strategy. This included dividing specific sub-national units (SNUs) into three priority tiers:

- Highest Priority: This tier focused on achieving a VLS 95% CI of +/-10%.
- Intermediate Priority: This tier focused on achieving a VLS 95% CI of +/-20%.
- Lowest Priority: This tier aimed to estimate HIV prevalence with a 95% CI of +/- 1.2% and ensure at least 12 EAs in each group.

Regions in Tanzania were also categorized based on their HIV prevalence:
- Low: Less than 3%
- Intermediate: Between 3% and 5.9%
- High: 6% and above

Three regions with large populations, Morogoro, Dodoma, and Dar es Salaam, were moved to the highest priority tier due to the high number of adults living with HIV not achieving VLS. Additionally, to achieve efficiency, the five low-prevalence HIV regions in Zanzibar were grouped into two distinct categories: Pemba and Unguja. See *Appendix A: Sample Design and Weighting* for more details.

After these modifications, 566 EAs were selected. During the second stage sampling, households were randomly selected within each EA, using a PPS method, where the average number of households to be selected was 35.

The sample size was calculated to estimate the following indicators: 1) the prevalence of VLS in adults living with HIV aged 15-49 years at the regional level with varying precision levels around VLS based on the tiered approach; and 2) to identify the national HIV incidence in the general population for the same age group with a relative standard error (RSE) less than 0.3%. To reach the target sample size, the study planned to identify approximately 34,729 eligible adults aged 15-49 years and 8,700 eligible adults aged 50 years and older—with approximately 39,750 persons aged 15 years and older expected to participate in the survey.

Table 2.1 Distribution of sampled enumeration areas and households by region

Distribution of sampled enumeration areas and households by region, THIS 2022-2023

	Enumeration Areas			Households		
Region	Urban	Rural	Total	Urban	Rural	Total
Mainland/Zanzibar						
Mainland	184	358	542	6,864	12,115	18,979
Zanzibar	9	15	24	309	531	840
Mainland, by region						
Dodoma	13	23	36	447	812	1,259
Arusha	4	8	12	208	212	420
Kilimanjaro	3	9	12	161	259	420
Tanga	4	11	15	140	385	525
Morogoro	14	22	36	426	834	1,260
Pwani	5	10	15	224	300	524
Dar es Salaam	36	0	36	1,260	0	1,260
Lindi	2	10	12	57	363	420
Mtwara	3	9	12	136	284	420
Ruvuma	3	12	15	145	380	525
Iringa	5	31	36	182	1,056	1,238
Mbeya	14	22	36	596	664	1,260
Singida	3	12	15	109	416	525
Tabora	3	12	15	121	404	525
Rukwa	4	11	15	129	396	525
Kigoma	4	11	15	125	400	525
Shinyanga	7	8	15	227	298	525
Kagera	6	30	36	232	1,028	1,260
Mwanza	18	18	36	668	590	1,258
Mara	5	10	15	155	370	525
Manyara	2	9	11	115	305	420
Njombe	9	27	36	359	901	1,260
Katavi	5	10	15	132	393	525
Simiyu	3	12	15	127	398	525
Geita	6	9	15	227	298	525
Songwe	3	12	15	156	369	525
Zanzibar, by island						
Unguja	6	6	12	205	215	420
Pemba	3	9	12	104	316	420
Zanzibar, by region						
Kaskazini Unguja	0	2	2	0	60	60
Kusini Unguja	0	2	2	0	64	64
Mjini Magharibi	6	2	8	205	91	296
Kaskazini Pemba	1	5	6	31	171	202
Kusini Pemba	2	4	6	73	145	218
Total	193	373	566	7,173	12,646	19,819

Although the survey did not disaggregate findings by national zones, the country's regions fall into zones that may share some common sociodemographic characteristics and which may be useful in the interpretation of survey data.

Mainland zones

- Western zone: Tabora, Kigoma
- Northern zone: Kilimanjaro, Tanga, Arusha
- Central zone: Dodoma, Singida, Manyara
- Southern Highlands zone: Iringa, Njombe, Ruvuma
- Southern zone: Lindi, Mtwara
- South West Highlands zone: Mbeya, Rukwa, Katavi, Songwe
- Lake zone: Kagera, Mwanza, Geita, Mara, Simiyu, Shinyanga
- Eastern zone: Dar es Salaam, Pwani, Morogoro

Zanzibar zones

- Kaskazini Unguja
- Kusini Unguja
- Mjini Magharibi
- Kaskazini Pemba
- Kusini Pemba

2.2 ELIGIBILITY CRITERIA, RECRUITMENT, AND CONSENT PROCEDURES

In THIS 2022-2023, individuals aged 15 years and older were eligible to participate in the survey. The consent criteria included:

- Adults aged 18 years and older or emancipated minors (older adolescents aged 15-17 years who are married or no longer depend on the parents and therefore do not require parental permission to participate in the survey) who slept in the household the night before the survey, whether they were usual residents in the selected household or overnight visitors, who were willing and able to provide verbal consent.
- Minors aged 15-17 years who slept in the household the night before the survey visit, whether they were usual residents in the selected household or overnight visitors, who were willing and able to provide verbal assent, and whose parents or guardians were willing and able to provide verbal permission for their participation.

A survey interviewer administered the informed consent process using electronic consent forms (see Appendix G) in the following order. First, a head of household / designated head of household provided verbal consent for the household interview, after which individual household members were rostered. Once the household interview was completed, eligible adults and emancipated minors could then provide verbal consent for an interview and for participation in the biomarker component of the survey, including HBTC, with return of HIV-testing results during the household visit. Participants had to consent to receipt of their HIV test results to participate in the biomarker component of the survey. If an individual did not want to receive their HIV test result, this was considered a refusal to participate in the testing portion of the survey. The interviewer also asked participants for verbal consent to store their blood samples in a repository to perform additional tests in the future.

After the return of HIV rapid test results during the biomarker component of the survey, the interviewer asked all participants who tested HIV-positive to provide consent for their viral load, CD4 test and hepatitis test results returned with his or her name and age to a health facility of their choice. The interviewer counselled all those who tested positive for HIV and were not on ART on the urgency of seeking prompt care and treatment at the health facility and asked for their consent to share their contact information with a trained healthcare worker or counselor to facilitate active linkage to HIV care (ALTC) at their chosen health facility. Upon consent, an ALTC form was filled out and sent to the health care provider to facilitate linkage to care. Those who did not consent were given an MOH Referral Form to a health facility of their choice, but their contact information was not shared with health facilities or organizations conducting ALTC.

All survey staff, healthcare workers, and counselors participating in linkage to care were trained in confidentiality procedures and detailed procedures on active linkage to care. This included eligibility for linkage to care, how contact information should be shared with the linkage to care coordinator, and documentation of linkage to care.

The interviewer asked minors aged 15-17 years for their assent to the interview and biomarker components after permission was granted by their parents or guardians. Although parental permission was required for their participation in the survey, minors aged 15-17 years could receive their HIV testing results without their parents being present. The consent process to share contact information for active linkage to care (ALTC) and return of viral load and CD4 results to a health facility was the same as for adults.

At each stage of the consent process, the interviewer recorded on the consent form on the tablet whether verbal consent/assent was given, and a printed copy was provided to the participant.

Prior to informed consent, the interviewer assessed the cognitive ability of each potential participant by providing information on survey participation and asking them to summarize their understanding of the purpose of the survey and what the survey involves. Standard operating procedures on eligibility determination process and verification of eligibility criteria were used to guide the interviewers on how to assess the respondent's cognitive ability based on the summary they provide. Persons who were unable to give consent or assent due to cognitive impairment or intellectual disability were not eligible to participate. Individuals with disabilities who were otherwise able to give verbal consent were offered survey participation.

All THIS 2022-2023 survey protocols, consent forms, screening forms, referral forms, recruitment materials, and questionnaires were reviewed and approved by in-country ethics and regulatory bodies, including NIMR, ZAHRI, and the institutional review boards of Columbia University Medical Center, Westat, and CDC.

2.3 SURVEY IMPLEMENTATION

Training of Field and Laboratory Staff

All 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, how to complete survey forms, communication skills, data collection, staff roles and responsibilities, recruitment of participants, and reporting of protocol deviations and adverse events. Interviewers and counselors were also trained in informed consent procedures, including human participants' protection, privacy and confidentiality, HBTC, and referral of participants to health and social services. Laboratory technicians participated in practical sessions and competency assessments in blood collection including venipuncture and finger prick, management and transportation of blood specimens, and biosafety.

Laboratory staff were trained in specimen management, including sample processing, labeling, and quality assurance (QA). Main laboratory staff were trained in viral load measurement, HIV confirmatory testing, HIV recency testing using the limiting antigen (LAg) avidity enzyme immunoassay, testing for antibodies to hepatitis B core antigen (anti-HBc) and hepatitis B surface antigen (HBsAg), and testing for HCV antibody and HCV RNA (HCV viral load).

Survey Staff

The fieldwork was conducted by 65 locally hired field teams with nine members each, including four interviewers, two testers who performed phlebotomy and HBTC, a team leader, and two drivers. Field teams split into two sub teams, each of which included both male and female staff who spoke English and Kiswahili.

Overall, there were a total of 650 field staff who participated in data collection, comprised of 13 field team supervisors, seven field lab supervisors, six information and communications technology officers, 390 data collectors, 65 team leaders, and 169 drivers. The field teams were supervised by their team leaders and field supervisors and managed by central staff who guided and oversaw data collection activities, performed quality checks, and provided technical support (See Appendix D).

There were a total of 49 satellite laboratory technologists, seven satellite laboratory team leads, and two main laboratory technologists.

Community Sensitization and Mobilization

The survey also employed community mobilization officers to maximize community support and participation before data collection. The community mobilization team consisted of one communication and community mobilization coordinator, 14 community mobilization officers, and 1132 community mobilizers. Mobilization began before fieldwork commenced with a high-level national launch meeting in Mainland Tanzania and Zanzibar that included key national and regional leaders, mass media, and other stakeholders. Community mobilization teams visited each EA before initiation of data collection and partnered with community mobilizers to connect with key gatekeepers in the communities (local government officials, traditional leaders, religious and community leaders). The mobilization team held community sensitization meetings, disseminated written informational materials such as posters and fliers, and held discussions with community residents. Community radio was used to educate the public and increase awareness of the survey.

Supervision

Data collection teams were continuously overseen by 13 field supervisors as well as periodically monitored by national and international teams with representation from collaborating institutions. Monitoring teams visited field teams and satellite laboratories frequently and provided direct supervision as well as verification of results by household revisits. Electronic monitoring forms completed by field monitors on tablets/phones, and survey management forms used by teams for household and individual outcome tracking were also reviewed by monitors for completeness. Field laboratory supervisors supported teams by organizing supplies and transport of blood samples, while the central management team supported community-mobilization efforts, provided technical troubleshooting, and checked 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. Weekly debriefing sessions were held between field-based supervisors and monitoring teams.

An electronic dashboard system was established to monitor the progression of the survey. The dashboard summarized data uploaded to the THIS 2022-2023 server daily. The dashboard tracked coverage and completion of EAs, sampled households, household response, eligible household members providing consent to the interview, biomarker components of the survey, blood draws, response rates (RRs), and overall progress towards the achievement of the target sample.

Survey Instruments

Questionnaire and field laboratory data were collected on mobile tablet devices using an application programmed in Census and Survey Processing System (CSPro) software, a public domain mobile data collection application. The household questionnaire collected information on household residents, assets, economic support, recent deaths, and orphans and vulnerable children (see Appendix E). The individual questionnaire was administered to all participants and included modules on demographic characteristics, sexual and reproductive health, marriage, male circumcision, sexual activity, the HIV testing and treatment history, TB and other health issues, hepatitis risk factors, COVID-19 vaccination status, stigma and discrimination, and alcohol use (see Appendix F). Participants who self-reported their HIV-positive status were asked questions about their HIV care experience. Women were interviewed by female staff and men by male staff, whenever possible. The questionnaire was administered in English and Kiswahili. The Kiswahili versions of the questionnaires were reviewed and tested thoroughly for acceptability, feasibility, and flow of questions.

2.4 FIELD-BASED BIOMARKER TESTING

Blood Collection

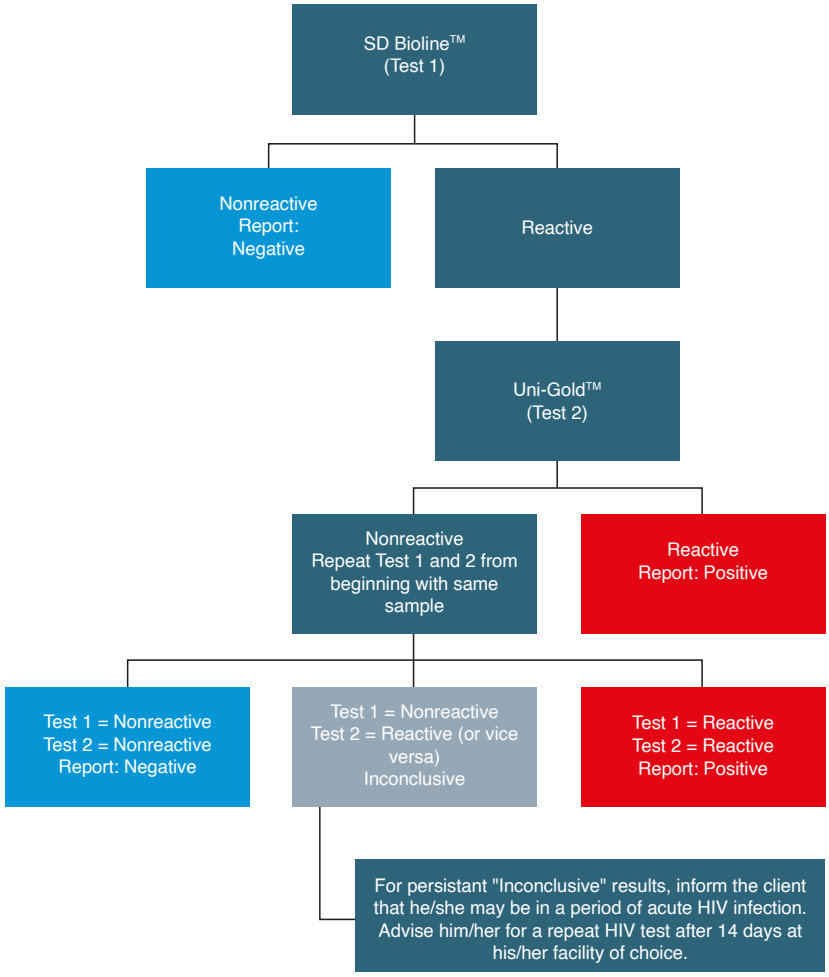
Trained field testers collected blood from consenting participants: approximately 14 mL of venous blood or 1 mL of capillary blood using finger-prick from individuals who either refused to give venous blood or for whom venous blood draw failed. Blood samples were labeled with a unique barcoded participant 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 at -20° Celsius. On a weekly basis, plasma and DBS were shipped to the main laboratory at BMC and stored at -80° Celsius.

HIV Home-Based Testing and Counseling

HIV HBTC was conducted in each household in accordance with National HIV Rapid Testing Algorithm (Figure 2.1). The survey used a sequential rapid-testing algorithm in the field.

SD Bioline™ HIV-1/2 (Standard Diagnostics, Inc., Gyeonggi-do, South Korea) was used as a screening test and Uni-Gold™ (Trinity Biotech, plc., Wicklow, Ireland) as a confirmatory test. Individuals with a nonreactive result on the screening test were reported as HIV negative. Individuals with a reactive screening test underwent subsequent testing with Uni-Gold™. Those with reactive results on both the screening and confirmatory tests were reported as HIV-positive. Individuals with a reactive SD Bioline™ test followed by a nonreactive Uni-Gold™ test were classified as inconclusive: in such situations, the first and second test were repeated using the same sample. For persistent inconclusive results, the participants were informed that they may be in a period of acute HIV infection and were referred to go for a repeat HIV test after 14 days at a facility of their choice.

Figure 2.1
Household-based HIV testing algorithm, THIS 2022-2023



Participants who tested HIV-positive who reported not being on ART were counseled on linkage to a clinic for ART initiation, care and support and were referred to a health facility of their choice using a National Health Referral Form completed by field staff. All participants were given handouts, which provided them with some basic information on HIV and a list of medical facilities and social services organizations in the community.

If a person who self-reported an HIV-positive status tested HIV negative in the survey, additional HIV rapid testing was conducted at the satellite lab (following the same national algorithm) to resolve any discrepancies. If these tests did not resolve the discrepancy, additional testing was performed at the main laboratory to confirm their status (see below). Once the participant's status was confirmed, survey staff returned to the household after consultation with the Ministries of Health (MOH) to share the results and provide counseling to these participants.

Field Quality Control (QC) and proficiency testing

QC using a panel of HIV-positive and -negative dried tube specimens (DTS) was performed biweekly by field testers performing HIV testing. In addition, Quality Assurance (QA) proficiency testing was conducted during training, using a panel of masked HIV-positive and -negative DTS. Proficiency in the correct performance and interpretation of the HIV testing algorithm was assessed for each tester.

2.5 LABORATORY-BASED BIOMARKER TESTING

Satellite Laboratory and Main Laboratory

Twenty-nine satellite laboratories (13 stationary and 16 mobile labs) were established nationally for management of field supplies, sample processing, temporary storage of samples and biological waste management. Also, at each satellite laboratory, Pima CD4, Geenius HIV 1/2 confirmatory assays, and QA tests were performed.

At the main laboratory at BMC, trained laboratory technologists performed additional tests. Main laboratory procedures included QA testing, HIV RNA (HIV viral load) testing, HIV recency testing using LAg assay, HIV confirmatory testing, testing for anti-HBc, HBsAg, HCV antibody and HCV RNA (HCV viral load), QA testing and long-term storage of samples at -80°C.

HIV QA and confirmatory testing: For QA of the HIV rapid testing conducted in the household, the first 25 samples tested by each field tester were retested in each satellite laboratory using the National HIV Rapid-Testing Algorithm. All specimens that tested HIV positive or indeterminate during HBTC, and those that had confirmed positive rapid test results during QA, underwent confirmatory testing using the Geenius HIV 1/2 Confirmatory Assay (Bio-Rad, Hercules, California, United States). A positive Geenius result defined HIV-positive status for the survey.

For participants who self-reported an HIV-positive status but tested HIV-negative at the time of the survey, if discrepancies remained after repeated laboratory-based rapid testing HIV total nucleic acid (TNA) polymerase chain reaction (PCR) testing was conducted for confirmation of status. These TNA PCR results were then provided to the participants as described earlier.

CD4 Count Measurement

Blood samples from participants who tested HIV positive in HBTC underwent CD4 count measurement at each satellite laboratory. The measurement was performed using the Pima™ CD4 Analyzer (Abbott Laboratories, Chicago, Illinois, United States, formerly Alere).

Viral Load Testing

The HIV-1 viral load (HIV RNA copies/ mL) of all confirmed HIV-positive participants was measured on plasma samples using the COBAS AmpliPrep/Taqman 96 assay on the COBAS AmpliPrep/COBAS TaqMan (CAP/CTM) HIV-1, v2.0 Test (Roche Molecular Diagnostics, Branchburg, New Jersey, United States). In cases where plasma samples were not available, HIV-1 viral load was performed on DBS samples using the COBAS AmpliPrep/COBAS TaqMan (CAP/CTM) Free Virus Elution (FVE) Protocol (Roche Molecular Diagnostics, Branchburg, New Jersey, United States). The COBAS AmpliPrep/TaqMan HIV-1 is a nucleic acid amplification test for the quantification of HIV Type 1 (HIV-1) RNA in human plasma or dried blood spots. Specimen preparation was automated using COBAS AmpliPrep with amplification and detection using TaqMan.

Hepatitis B and Hepatitis C

All HBV and HCV testing was performed using plasma samples. If a survey participant only provided a 1 mL tube (ie, fingerstick) or a 4 mL tube (eg, vein failed venous blood draw), the specimens were not tested for HBV or HCV.

Participants with sufficient samples were screened for HBV infection using Abbott Architect Ci4100 (Abbott Molecular Inc., Des Plaines, Illinois, United States) for the detection of antibodies to hepatitis B core antigen (anti-HBc). Samples that tested positive for anti-HBc were further tested for hepatitis B surface antigen (HBsAg using the SD Bioline HBsAg rapid test (Standard Diagnostics, Inc., Kyonggido, South Korea). Participants who tested positive for anti-HBc and negative for HBsAg were considered to have past or resolved infection. Participants who tested positive for both anti-HBc and HBsAg were reported as having acute or chronic hepatitis B and had results sent to the health facility of their choice, where they were to be referred for subsequent management.

Participants were screened for HCV antibody using the SD Bioline HCV antibody test. Participants with a positive HCV antibody test had diagnostic HCV RNA (HCV viral load) quantitative PCR performed using the Roche platform COBAS AmpliPrep/Taqman 96 assay on the COBAS AmpliPrep/COBAS TaqMan (CAP/CTM) HCV, v2.0 Test (Roche Molecular Diagnostics, Branchburg, New Jersey, United States). Participants with a detectable HCV viral load were reported as positive for current hepatitis C and had their results sent to the health facility of their choice, where they were to be referred for subsequent management.

Return of Hepatitis, CD4 and Viral Load Results

The return-of-results coordinator delivered CD4 and viral load results within 8 to 12 weeks to the health facility chosen by each participant living with HIV. Participants living with HIV were provided with a referral form during HBTC for subsequent retrieval of their results.

HBV test results were returned to participants who tested positive for both anti-HBc and HBsAg 8-16 weeks after sample collection. HCV test results were also returned to participants with HCV detectable viral load 8-16 weeks after sample collection.

Survey staff also contacted each participant via mobile phones, if available, informing them that their viral load/hepatitis results were available at the chosen facility and further advising them to seek care and treatment.

HIV Recent Infection Testing Algorithm

To distinguish recent from long-term HIV infections, to estimate annual incidence, the survey used a laboratory-based testing algorithm that employed a combination of assays: an HIV-1 LAg avidity assay, HIV-1 viral load, and ARV detection (Figure 2.2), as described in Appendix B.

HIV-1 LAg avidity assay testing was performed on specimens from everyone who tested HIV positive in the survey. The Sedia HIV-1 LAg-Avidity EIA (Sedia Biosciences Corporation, Portland, Oregon, United States) was used on plasma specimens, while the Maxim HIV-1 LAg-Avidity DBS EIA (Maxim Biomedical, Bethesda, Maryland, United States) was used on DBS specimens. Plasma specimens with a median normalized optical density (ODn) value >1.5 and DBS specimens with an ODn value >1.0 were classified as long-term infections. All remaining specimens with ODn values ≤1.5 (or ≤1.0 for DBS) and their viral load results were assessed. Those with viral load <1,000 copies/mL were classified as long-term infections, while those with viral load ≥ 1,000 copies/mL were classified as potential recent infections. Then ARV detection data were also assessed (see below). Those with an ARV detectable in their blood were classified as long-term infections and those without were classified as recent infections (Figure 2.2).

Figure 2.2
HIV-1 recent infection testing algorithm, THIS 2022-2023

Abbreviations: mL: milliliter; ODn: normalized optical density; ARVs: antiretrovirals.

Detection of Antiretroviral Drug Resistance

HIV resistance to ARVs was assessed for participants who tested positive for HIV including recent cases, those without VLS (HIV RNA ≥1,000 copies/mL; both on treatment and not on treatment), and those with a viral load of 200-999 copies/mL. The findings will be released separately.

Detection of Antiretrovirals

Qualitative screening for detectable concentrations of ARVs was conducted on DBS specimens from all participants who tested HIV positive and participants who self-reported as HIV-positive but tested HIV-negative at the time of the survey 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.[1] 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, four were selected as markers for the most prescribed first- and second-line regimens in Tanzania (dolutegravir, efavirenz, atazanavir, 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 indicates participant use of a given drug at the time of blood collection. Results below the limit of detection among individuals who reported taking ART indicate that there was no recent exposure to the regimen and that adherence to a prescribed regimen is suboptimal, 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 regimens 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, South Africa.

2.6 DATA PROCESSING AND ANALYSIS

All field data were collected on tablets, transmitted to a central server using a secure and encrypted network connection, 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 barcodes 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 were adjusted for nonresponse and noncoverage. Nonresponse adjusted weights were calculated for households, individual interviews, and individual blood draws in a hierarchical form. Weighting adjustment cells, defined by a combination of variables that are potential predictors of response, were developed to adjust initial individual and blood-level weights for nonresponse. The nonresponse adjustment cells were constructed using chi-square automatic interaction detection, or the Chi-square Automatic Interaction Detector (CHAID) 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 5-year age groups. Descriptive analyses of RR, characteristics of respondents, and other indicators 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 viral load and ARV detection algorithm, and obtained using the formula recommended by the World Health Organization (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 = 130 days (95% CI: 118, 142), a time cutoff = 1.0 year and percentage false recent = 0.00.[2]

In this report, denominators for a characteristic in a table may differ from the overall table totals due to nonresponse, missing data, and conditional responses. Also, unless otherwise noted, comparisons between estimates in the report are based upon nonoverlapping 95% CIs. Note that CIs are not provided in most report tables, except for those reporting HIV incidence where they are shown to illustrate the precision of the estimates. However, instructions for calculating the CIs for other tables will be included in the public-use data package, which will be available on the PHIA website.

Where applicable, the UNAIDS and PEPFAR indicators (that were in effect when the survey concluded) corresponding to a given table are specified at the end of the table. The UNAIDS Global Monitoring indicators refer to the release of the indicators, available at: https://www.unaids.org/sites/default/files/media_asset/global-aids-monitoring_en.pdf (Accessed November 6, 2023) and the Monitoring, Evaluation, and Reporting (MER) indicators available at: https://www.state.gov/wp-content/uploads/2022/12/PEPFAR-2023-COP_ROP-Guidance-Draft-for-Public-Comment.pdf (Accessed November 6, 2023).

2.7 RESPONSE RATES

Household RRs were calculated using the American Association for Public Opinion Research Response Rate 4 method[3] 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). Vacant and destroyed households, nonresidential units, and household units with no eligible respondents were considered not eligible and excluded from the calculation.

Individual interview RRs were calculated as the number of individuals who were interviewed divided by the number of individuals eligible to participate in the survey. Blood draw RRs were calculated as the number of individuals who provided blood divided by the number of individuals who were interviewed. All RRs presented below are weighted unless otherwise specified.

Of the 19,819 households selected, 18,586 were occupied and of those, 17,301 were interviewed. The overall unweighted household RR was 92.8% (Table 2.2).

A total of 39,442 adults aged 15 years and older (22,031 women and 17,411 men) were eligible to participate in the survey. A total of 35,957 adults participated in the individual interview: interview RRs were 93.0% among women, and 87.3% among men. Among those interviewed, 93.0% of women and 92.6% of men had their blood drawn (Table 2.3).

Table 2.2 Household response rates

Number of households selected, occupied, and interviewed and household response rates (unweighted and weighted), by residence, THIS 2022-2023

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households selected	7,173	12,646	19,819
Households occupied	6,729	11,857	18,586
Households interviewed	6,256	11,045	17,301
Household response rate[1] (unweighted)	92.5	93.0	92.8
Household response rate[1] (weighted)	92.6	92.8	92.7

[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 2.3 Individual 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, THIS 2022-2023

Result	Residence				Total by sex		Total
	Urban		Rural				
	Men	Women	Men	Women	Men	Women	
Eligible individuals, ages 15-24 years							
Number of eligible individuals	1,723	2,402	3,497	4,077	5,220	6,479	11,699
Interview response rate (unweighted)	86.1	93.0	86.4	92.8	86.3	92.9	90.0
Interview response rate (weighted)	85.1	92.6	85.9	92.6	85.6	92.6	89.5
Blood draw response rate (unweighted)	92.5	93.3	94.9	94.6	94.1	94.1	94.1
Blood draw response rate (weighted)	91.9	92.8	95.2	94.1	94.0	93.6	93.8
Eligible individuals, ages 15-49 years							
Number of eligible individuals	4,608	6,401	8,776	10,698	13,384	17,099	30,483
Interview response rate (unweighted)	83.8	94.4	88.9	94.2	87.2	94.2	91.1
Interview response rate (weighted)	82.7	94.0	87.9	93.7	85.9	93.8	90.3
Blood draw response rate (unweighted)	90.0	91.6	94.3	94.6	92.9	93.5	93.2
Blood draw response rate (weighted)	89.0	91.0	94.1	93.9	92.2	92.7	92.4
Eligible individuals, ages 15+ years							
Number of eligible individuals	5,693	7,794	11,718	14,237	17,411	22,031	39,442
Number of interviewed individuals	4,833	7,314	10,563	13,247	15,396	20,561	35,957
Number of individuals with blood draw	4,369	6,708	10,002	12,584	14,371	19,292	33,663
Interview response rate (unweighted)	84.9	93.8	90.1	93.0	88.4	93.3	91.2
Interview response rate (weighted)	83.9	93.5	89.2	92.6	87.3	93.0	90.5
Blood draw response rate (unweighted)	90.4	91.7	94.7	95.0	93.3	93.8	93.6
Blood draw response rate (weighted)	89.4	91.1	94.5	94.3	92.6	93.0	92.8
Overall response rate (unweighted)[3]	71.0	79.6	79.4	82.2	76.6	81.3	79.2

[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.
[3] Overall response rate = household response rate * interview response rate * blood draw response rate.

2.8 REFERENCES

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2. World Health Organization. *WHO Working Group on HIV Incidence Measurement and Data Use.* Geneva: WHO; 2018. https://apps.who.int/iris/bitstream/handle/10665/272940/WHO-CDS-HIV-18.9-eng.pdf. Accessed August 30, 2023.

3. American Association for Public Opinion Research (AAPOR). *Final Dispositions of Case Codes and Outcome Rates for Surveys.* Revised 2023. AAPOR; 2023. https://aapor.org/wp-content/uploads/2023/05/Standards-Definitions-10th-edition.pdf. Accessed August 30, 2023.

3. SURVEY HOUSEHOLD CHARACTERISTICS

3.1 BACKGROUND

This chapter presents characteristics of households surveyed in THIS 2022-2023. Household composition is described in terms of sex of the head of household, as well as the size of the household. The age structure of the de facto household population (ie, persons who slept in the household the night before the survey) is described by sex as well as urban/rural residence. This chapter also describes the prevalence and composition of households impacted by HIV, which are households with one or more members living with HIV.

3.2 RESULTS

The following tables and figures describe household characteristics.

Table 3.1 Household composition

Percent distribution of households by sex of head of household; median (quartile 1, quartile 3 [Q1, Q3]) size of household and median (Q1, Q3) number of children under 18 years of age, by residence, THIS 2022-2023

Characteristic	Residence				Total	
	Urban		Rural			
	Percent	Number	Percent	Number	Percent	Number
Head of household						
Male	70.8	4,415	74.0	8,165	72.7	12,580
Female	29.2	1,841	26.0	2,880	27.3	4,721
Total	100.0	6,256	100.0	11,045	100.0	17,301

Characteristic	Residence				Total	
	Urban		Rural			
	Median	Q1, Q3	Median	Q1, Q3	Median	Q1, Q3
Size of households	4	2, 6	4	3, 6	4	3, 6
Number of children under 18 years of age	1	0, 3	2	1, 4	2	0, 3

Table 3.2 Distribution of de facto household population (population pyramid)

Percent distribution of the de facto household population, by 5-year age groups and sex, THIS 2022-2023

Age (years)	Male		Female		Total	
	Percent	Number	Percent	Number	Percent	Number
0-4	7.9	5,752	7.7	5,640	15.6	11,392
5-9	7.6	5,577	7.4	5,496	15.1	11,073
10-14	7.0	5,215	7.1	5,243	14.2	10,458
15-19	4.1	2,909	4.6	3,208	8.6	6,117
20-24	3.3	2,339	4.7	3,302	8.0	5,641
25-29	2.9	2,093	4.1	2,900	7.1	4,993
30-34	2.7	1,876	3.3	2,366	5.9	4,242
35-39	2.2	1,517	3.0	2,142	5.2	3,659
40-44	1.9	1,427	2.5	1,748	4.4	3,175
45-49	1.7	1,251	2.0	1,465	3.7	2,716

Table 3.2 Distribution of de facto household population (population pyramid) (continued)

Percent distribution of the de facto household population, by 5-year age groups and sex, THIS 2022-2023

Age (years)	Male		Female		Total	
	Percent	Number	Percent	Number	Percent	Number
50-54	1.5	1,067	1.9	1,340	3.3	2,407
55-59	1.0	724	1.2	847	2.2	1,571
60-64	1.0	780	1.2	884	2.2	1,664
65-69	0.6	470	0.8	585	1.4	1,055
70-74	0.5	404	0.7	505	1.2	909
75-79	0.3	231	0.4	279	0.7	510
80+	0.5	351	0.7	493	1.2	844
Total	46.9	33,983	53.1	38,443	100.0	72,426

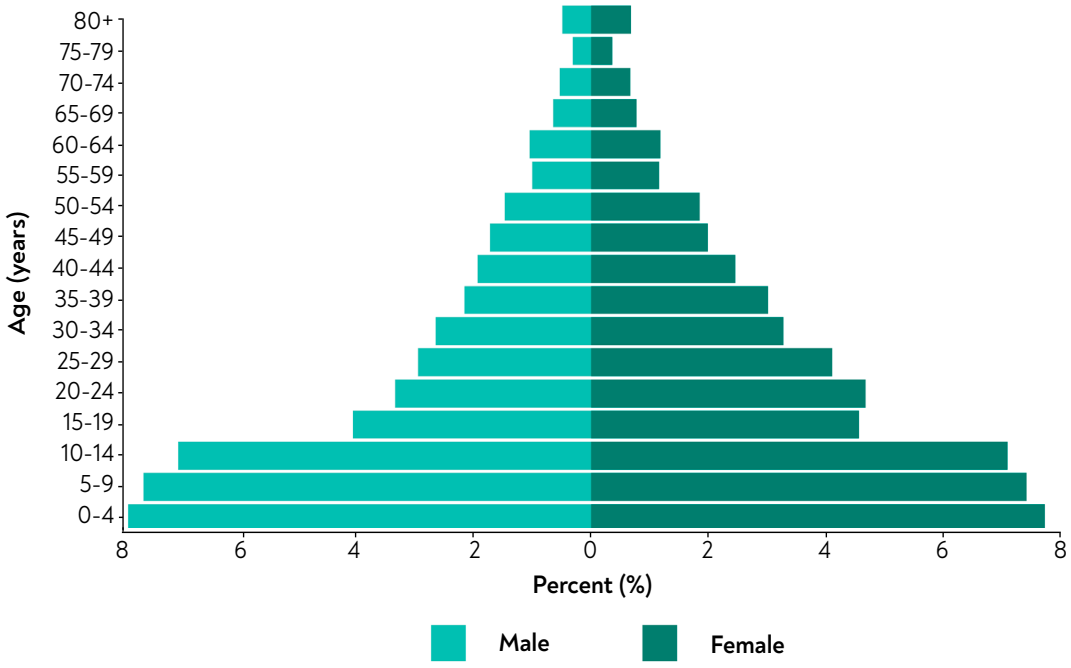


Figure 3.2
Distribution of the de facto population by sex and age, THIS 2022-2023

Table 3.3 Household population by age, sex, and residence

Percent distribution of the household population, by age, sex, and residence, THIS 2022-2023

Age (years)	Urban					
	Male		Female		Total	
	Percent	Number	Percent	Number	Percent	Number
0-4	16.2	1,700	13.7	1,758	14.8	3,458
5-9	15.3	1,576	12.4	1,628	13.7	3,204
10-14	13.0	1,389	11.7	1,537	12.2	2,926
15-19	8.7	888	8.9	1,110	8.8	1,998
20-24	8.3	839	10.3	1,296	9.4	2,135
25-29	7.9	809	9.6	1,191	8.8	2,000
30-34	6.9	689	7.5	954	7.2	1,643
35-39	5.3	534	6.4	797	5.9	1,331
40-44	4.4	463	5.0	609	4.8	1,072
45-49	3.8	390	3.5	449	3.7	839
50-54	2.9	314	3.3	406	3.1	720
55-59	1.9	189	2.0	252	1.9	441
60-64	2.0	210	2.0	249	2.0	459
65-69	1.2	127	1.2	170	1.2	297
70-74	1.0	109	1.0	139	1.0	248
75-79	0.5	59	0.4	59	0.5	118
80+	0.8	77	0.9	119	0.8	196
0-4	16.2	1,700	13.7	1,758	14.8	3,458
5-14	28.3	2,965	24.1	3,165	26.0	6,130
15-49	45.2	4,612	51.3	6,406	48.6	11,018
50+	10.3	1,085	10.8	1,394	10.6	2,479
Total	100.0	10,362	100.0	12,723	100.0	23,085

Age (years)	Rural					
	Male		Women		Total	
	Percent	Number	Percent	Number	Percent	Number
0-4	17.2	4,052	15.1	3,882	16.1	7,934
5-9	16.8	4,001	14.9	3,868	15.8	7,869
10-14	16.1	3,826	14.4	3,706	15.2	7,532
15-19	8.7	2,021	8.5	2,098	8.6	4,119
20-24	6.5	1,500	7.9	2,006	7.2	3,506
25-29	5.5	1,284	6.6	1,709	6.1	2,993
30-34	5.0	1,187	5.4	1,412	5.2	2,599
35-39	4.2	983	5.3	1,345	4.8	2,328
40-44	4.0	964	4.4	1,139	4.2	2,103
45-49	3.6	861	3.9	1,016	3.7	1,877
50-54	3.2	753	3.6	934	3.4	1,687
55-59	2.3	535	2.3	595	2.3	1,130
60-64	2.3	570	2.4	635	2.4	1,205
65-69	1.4	343	1.6	415	1.5	758

Table 3.3 Household population by age, sex, and residence (continued)

Percent distribution of the household population, by age, sex, and residence, THIS 2022-2023

Age (years)	Rural					
	Male		Female		Total	
	Percent	Number	Percent	Number	Percent	Number
70-74	1.2	295	1.4	366	1.3	661
75-79	0.8	172	0.8	220	0.8	392
80+	1.2	274	1.5	374	1.4	648
0-4	17.2	4,052	15.1	3,882	16.1	7,934
5-14	32.9	7,827	29.3	7,574	31.0	15,401
15-49	37.4	8,800	42.0	10,725	39.8	19,525
50+	12.5	2,942	13.7	3,539	13.1	6,481
Total	100.0	23,621	100.0	25,720	100.0	49,341

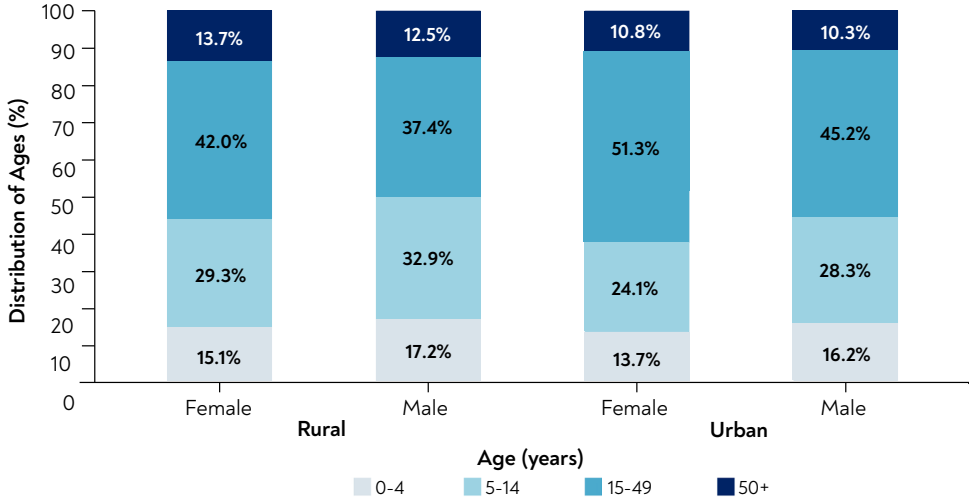


Figure 3.3
Household population by age, sex, and residence, THIS 2022-2023

Table 3.4 Prevalence of HIV-affected households

Percentage of households with at least one household member living with HIV, by residence, THIS 2022-2023

Residence	Percent	Number
Urban	9.9	5,718
Rural	8.2	10,533
Total	8.9	16,251

Figure 3.4
Prevalence of HIV-affected households by residence, THIS 2022-2023

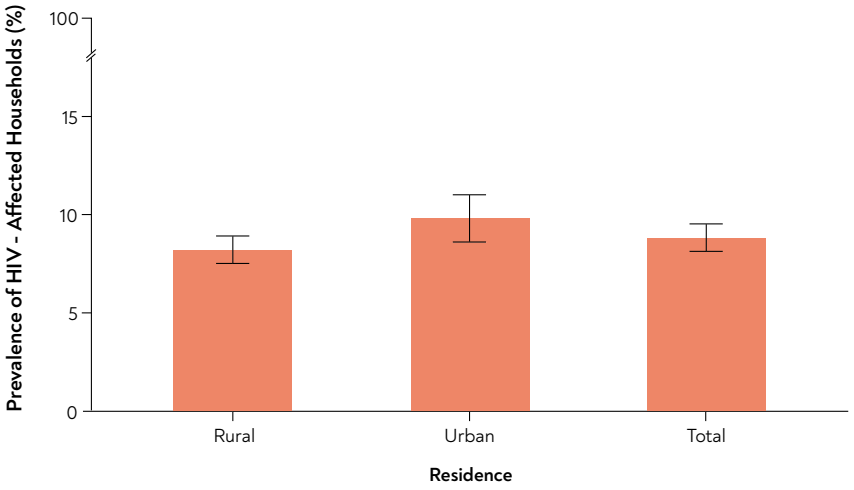


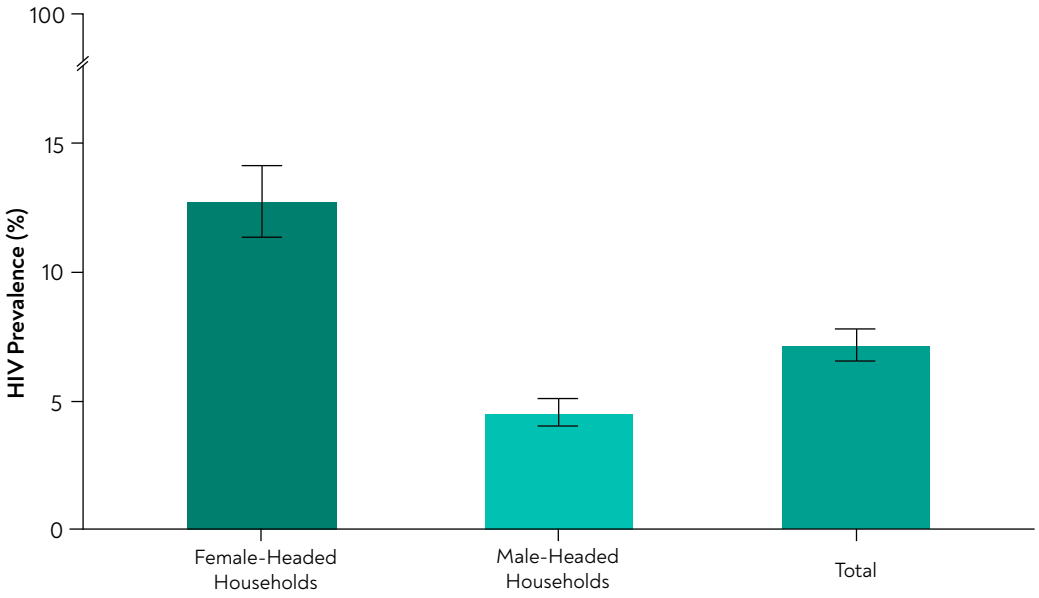
Table 3.5 Prevalence of households with a head of household living with HIV

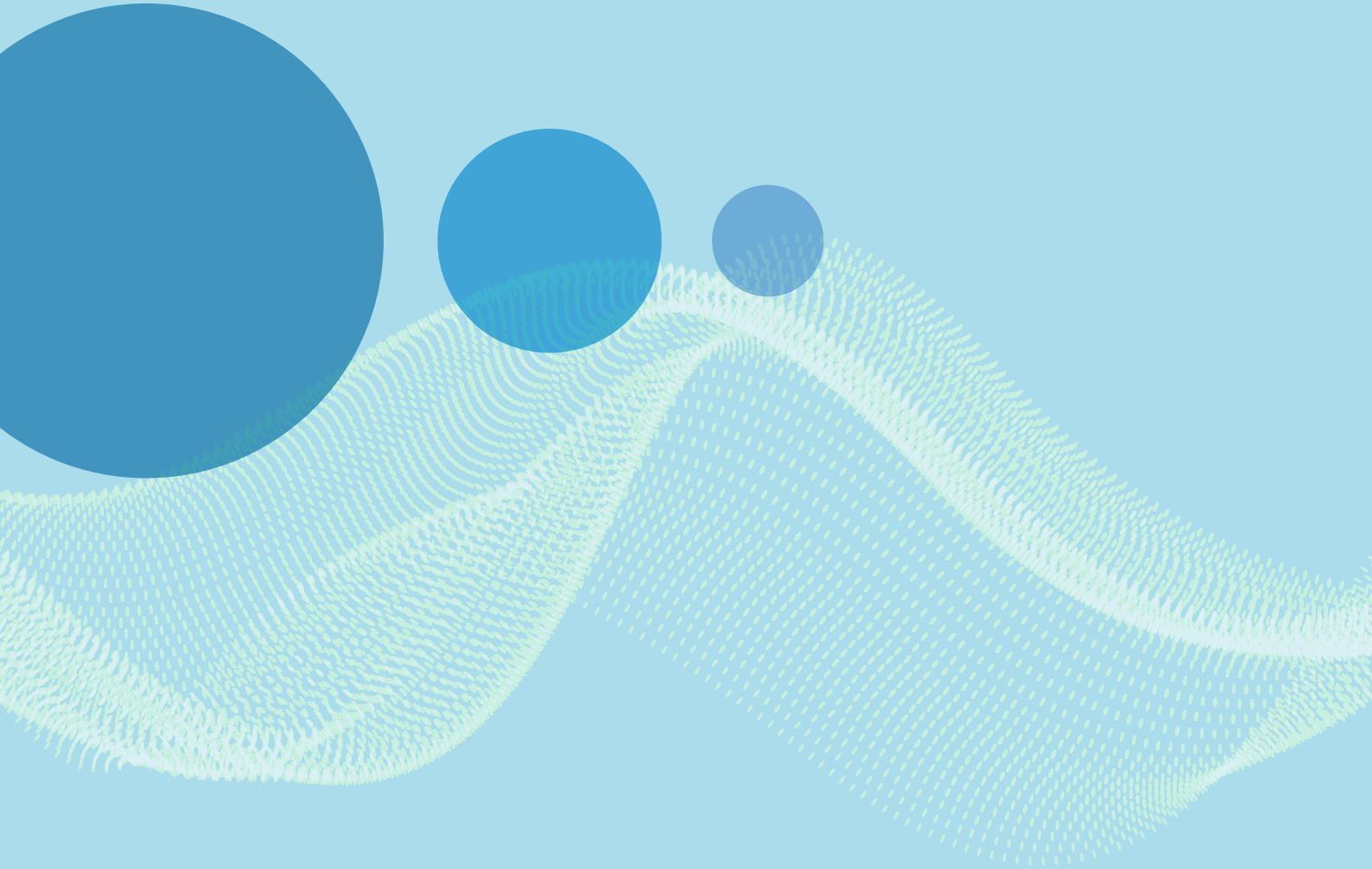
Percentage of households with a head of household living with HIV by sex of head of household, THIS 2022-2023

Sex of head of household	Percent	Number
Male	4.5	8,857
Female	12.7	4,109
Total	7.2	12,966

The sex of the household head may not represent the sex of household head designee who responded to the interview.

Figure 3.5
Prevalence of HIV among heads of households, by sex, THIS 2022-2023





4. SURVEY POPULATION CHARACTERISTICS

4.1 BACKGROUND

THIS 2022-2023 assessed key indicators and outcomes for adults (defined as those aged 15 years and older). To provide context for these outcomes, this chapter summarizes the basic demographic and socioeconomic characteristics of the survey population. Most key indicators in this report are stratified according to these characteristics.

4.2 RESULTS

Table 4.1 presents the demographic characteristics of the population in THIS 2022-2023.

Table 4.1 Demographic characteristics of the adult population

Percent distribution of the population aged 15 years and older, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percent	Number	Percent	Number	Percent	Number
Residence						
Urban	37.0	4,833	40.0	7,314	38.5	12,147
Rural	63.0	10,563	60.0	13,247	61.5	23,810
Mainland/Zanzibar						
Mainland	96.1	14,477	96.5	19,457	96.3	33,934
Zanzibar	3.9	919	3.5	1,104	3.7	2,023
Mainland, by region						
Dodoma	5.2	866	5.3	1,173	5.3	2,039
Arusha	4.3	250	4.0	347	4.1	597
Kilimanjaro	3.8	274	4.3	405	4.1	679
Tanga	4.1	428	4.0	550	4.0	978
Morogoro	4.7	917	5.0	1,288	4.9	2,205
Pwani	5.3	382	5.8	553	5.6	935
Dar es Salaam	8.1	809	8.4	1,199	8.3	2,008
Lindi	1.7	282	1.7	374	1.7	656
Mtwara	2.8	287	2.9	411	2.9	698
Ruvuma	3.2	468	3.0	590	3.1	1,058
Iringa	1.5	850	1.5	1,122	1.5	1,972
Mbeya	3.6	787	3.6	1,057	3.6	1,844
Singida	2.8	533	2.6	688	2.7	1,221
Tabora	5.2	490	4.9	608	5.0	1,098
Rukwa	1.7	360	1.7	490	1.7	850
Kigoma	2.8	469	3.0	662	2.9	1,131
Shinyanga	2.9	418	3.0	585	2.9	1,003
Kagera	5.2	1,029	4.8	1,241	5.0	2,270
Mwanza	7.2	1,134	6.9	1,512	7.0	2,646
Mara	4.0	420	4.2	602	4.1	1,022
Manyara	1.9	259	1.8	339	1.9	598
Njombe	1.4	757	1.5	1,137	1.5	1,894
Katavi	2.3	496	2.2	615	2.3	1,111
Simiyu	3.0	601	2.8	738	2.9	1,339
Geita	5.5	534	5.2	690	5.3	1,224
Songwe	2.0	377	1.9	481	2.0	858

Table 4.1 Demographic characteristics of the adult population (continued)

Percent distribution of the population aged 15 years and older, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percent	Number	Percent	Number	Percent	Number
Zanzibar, by island						
Unguja	2.8	462	2.5	558	2.6	1,020
Pemba	1.1	457	1.0	546	1.1	1,003
Zanzibar, by region						
Kaskazini Unguja	0.4	64	0.3	70	0.3	134
Kusini Unguja	(0.3)	48	0.3	65	0.3	113
Mjini Magharibi	2.1	350	1.9	423	2.0	773
Kaskazini Pemba	0.5	193	0.5	267	0.5	460
Kusini Pemba	0.6	264	0.5	279	0.6	543
Marital status						
Never married	35.9	4,791	23.3	4,094	29.3	8,885
Married or living together	56.4	9,265	56.5	12,002	56.4	21,267
Divorced or separated	6.4	1,008	10.9	2,234	8.7	3,242
Widowed	1.4	302	9.3	2,195	5.5	2,497
Education						
No education	9.4	1,646	17.3	3,903	13.5	5,549
Primary	58.6	9,371	55.3	11,607	56.9	20,978
Secondary	27.2	3,763	24.7	4,558	25.9	8,321
More than secondary	4.8	602	2.7	471	3.7	1,073
Wealth quintile						
Lowest	21.8	3,494	21.0	4,449	21.4	7,943
Second	20.7	3,599	20.1	4,578	20.4	8,177
Middle	21.1	3,496	20.5	4,482	20.8	7,978
Fourth	18.7	2,625	18.6	3,637	18.7	6,262
Highest	17.7	2,172	19.8	3,410	18.8	5,582
Age (years)						
15-19	18.4	2,468	17.2	2,921	17.8	5,389
20-24	15.2	2,038	16.3	3,097	15.8	5,135
25-29	13.2	1,807	13.6	2,731	13.4	4,538
30-34	11.3	1,646	11.1	2,255	11.2	3,901
35-39	9.1	1,318	9.1	2,044	9.1	3,362
40-44	7.8	1,272	7.6	1,684	7.7	2,956
45-49	6.7	1,117	6.3	1,382	6.5	2,499
50-54	5.4	990	5.1	1,256	5.2	2,246
55-59	3.7	679	3.4	794	3.5	1,473
60-64	3.3	730	3.2	831	3.3	1,561
65+	6.1	1,331	7.1	1,566	6.6	2,897
Total 15-24 years	33.6	4,506	33.5	6,018	33.5	10,524
Total 15-49 years	81.6	11,666	81.1	16,114	81.3	27,780
Total 50+ years	18.4	3,730	18.9	4,447	18.7	8,177
Total 15+ years	100.0	15,396	100.0	20,561	100.0	35,957

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

5. HIV INCIDENCE

5.1 BACKGROUND

HIV incidence, the measure of new HIV infections in a population over time, provides important information on the status of the HIV epidemic. It 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 (aged 15 years and older) 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 THIS 2022-2023 was not powered to estimate incidence at the regional level or across different sub-groups.

A laboratory-based incidence testing algorithm (HIV-1 LAg avidity plus viral load and ARV detection) was 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 mean duration of recent infection = 130 days (95% CI: 118, 142), with time cutoff = 1.0 year and residual proportion false recent = 0.00. Survey weights are utilized for all estimates. All HIV-positive participants were tested for recent infection using HIV-1 LAg avidity assay.

Incidence estimation is based on recent/long-term classification by the recent infection algorithm using LAg avidity to identify potential recent infections.[1,2,3] The algorithm uses viral load testing to exclude specimens with low viral load and limit misclassification of persons as recent infections who are elite controllers* or on effective ART. The algorithm uses ARV detection to exclude specimens with high viral load and limit misclassification as recent infections of persons with longstanding infection who are on ART but have drug resistance or poor treatment adherence.[4]

5.2 RESULTS

Table 5.1 reports estimated HIV incidence. Table 5.2 presents estimates for the total number of new infections among adults using the recent infection algorithm, as well as the total number of adults living with HIV using prevalence estimates in Chapter 6.

Table 5.1 Annual HIV incidence using the recent infection testing algorithm

Annual incidence of HIV among adults aged 15-49 and 15 years and older, by sex and age, using the recent infection testing algorithm (limiting antigen plus viral load plus antiretroviral biomarker testing), THIS 2022-2023

Age (years)	Men		Woman		Total	
	Percentage annual incidence[1]	95% CI	Percentage annual incidence[1]	95% CI	Percentage annual incidence[1]	95% CI
15-24	0.00	(0.00 - 0.25)	0.33	(0.07 - 0.60)	0.17	(0.03 - 0.31)
25-34	0.22	(0.00 - 0.49)	0.32	(0.03 - 0.60)	0.27	(0.07 - 0.47)
35-49	0.19	(0.00 - 0.45)	0.20	(0.00 - 0.45)	0.19	(0.01 - 0.38)
50+	0.07	(0.00 - 0.22)	0.00	(0.00 - 0.27)	0.03	(0.00 - 0.11)
Total 15-49 years	0.12	(0.01 - 0.23)	0.29	(0.13 - 0.46)	0.21	0.11 - 0.31
Total 15+ years	0.11	(0.01 - 0.20)	0.24	0.11 - 0.37	0.18	0.09 - 0.26

[1] Relates to Global AIDS Monitoring 2022 Indicator 3.1: HIV incidence.

* Elite controllers are a small subset of people living with HIV whose immune systems can maintain viral load suppression for years without treatment.

Table 5.2 Adults living with HIV and number of new HIV infections per year using the recent infection algorithm

People living with HIV and number of new HIV infections per year among adults aged 15-49 years and 15 years and older, by age, using the recent infection testing algorithm (limiting antigen plus viral load plus antiretroviral biomarker testing), THIS 2022-2023

Age (years)	People living with HIV[1]	95% CI	Number of new HIV infections per year	95% CI
15-24	114,000	(87,000 - 142,000)	20,000	(3,000 - 37,000)
25-34	293,000	(253,000 - 333,000)	23,000	(5,000 - 40,000)
35-49	675,000	(611,000 - 738,000)	15,000	(1,000 - 28,000)
50+	466,000	(411,000 - 520,000)	2,000	(0 - 6,000)
50-59	288,000	(248,000 - 328,000)	2,000	(0 - 7,000)
60+	178,000	(152,000 - 204,000)	0	(0 - 10,000)
Total 15-49 years	1,082,000	(996,000 - 1,169,000)	58,000	(29,000 - 86,000)
Total 15+ years	1,548,000	(1,436,000 - 1,660,000)	60,000	(31,000 - 88,000)

[1] People living with HIV is calculated as the weighted total number of people living with HIV, equivalent to multiplying the HIV prevalence by the population count. Please note that these estimates are rounded to the nearest thousand.

5.3 REFERENCES

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6. HIV PREVALENCE

6.1 BACKGROUND

This chapter presents representative estimates of HIV prevalence among adults aged 15 years and older at the national and regional level by selected demographic and behavioral characteristics. It also presents estimates of the number of people living with HIV in Tanzania. HIV testing was conducted in each household using a serological rapid diagnostic testing algorithm based on Tanzania's national guidelines, with laboratory confirmation of seropositive samples using a supplemental assay. Appendix B describes the PHIA HIV testing methodology.

6.2 RESULTS

The following tables and figures report estimated HIV prevalence data by demographic characteristics.

Table 6.1 HIV prevalence by demographic characteristics: Adults aged 15-49 years

Prevalence of HIV among adults aged 15-49 years, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Residence						
Urban	2.6	3,474	5.6	5,532	4.3	9,006
Rural	2.3	7,359	4.6	9,532	3.4	16,891
Mainland/Zanzibar						
Mainland	2.5	10,127	5.2	14,193	3.9	24,320
Zanzibar	0.3	706	0.5	871	0.4	1,577
Mainland, by region						
Dodoma	0.7	567	4.0	819	2.4	1,386
Arusha	0.5	169	4.0	243	2.3	412
Kilimanjaro	1.5	156	4.4	247	3.2	403
Tanga	2.9	281	3.5	373	3.2	654
Morogoro	1.8	635	3.0	937	2.5	1,572
Pwani	2.8	251	5.0	377	4.0	628
Dar es Salaam	1.6	555	5.7	894	3.8	1,449
Lindi	1.4	165	4.3	242	2.9	407
Mtwara	1.0	186	3.4	263	2.2	449
Ruvuma	2.8	335	4.7	436	3.7	771
Iringa	6.3	551	15.1	736	10.8	1,287
Mbeya	6.1	539	10.2	741	8.2	1,280
Singida	2.0	363	2.8	475	2.4	838
Tabora	3.8	356	5.2	468	4.5	824
Rukwa	1.8	268	2.4	369	2.1	637
Kigoma	1.4	338	1.7	514	1.6	852
Shinyanga	2.4	322	5.7	483	4.2	805
Kagera	3.8	766	6.2	963	5.0	1,729
Mwanza	2.6	850	5.7	1,168	4.2	2,018
Mara	2.6	317	7.4	447	5.1	764
Manyara	1.6	183	1.4	241	1.5	424

Table 6.1 HIV prevalence by demographic characteristics: Adults aged 15-49 years (continued)

Prevalence of HIV among adults aged 15-49 years, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Njombe	8.4	510	15.9	788	12.4	1,298
Katavi	2.0	377	4.3	504	3.2	881
Simiyu	1.7	435	4.5	585	3.1	1,020
Geita	2.1	408	5.2	545	3.7	953
Songwe	4.0	244	7.2	335	5.7	579
Zanzibar, by island						
Unguja	0.3	374	0.6	457	0.4	831
Pemba	0.3	332	0.2	414	0.2	746
Zanzibar, by region						
Kaskazini Unguja	(0.0)	47	(2.1)	48	0.9	95
Kusini Unguja	(0.0)	39	1.8	52	0.9	91
Mjini Magharibi	0.3	288	0.3	357	0.3	645
Kaskazini Pemba	0.0	131	0.0	203	0.0	334
Kusini Pemba	0.4	201	0.4	211	0.4	412
Marital status						
Never married	1.0	4,417	2.7	3,709	1.7	8,126
Married or living together	3.1	5,679	4.1	9,286	3.7	14,965
Divorced or separated	6.2	662	11.5	1,586	9.7	2,248
Widowed	13.5	53	24.5	456	23.2	509
Education						
No education	3.1	919	6.3	1,995	5.1	2,914
Primary	3.0	6,238	6.2	8,563	4.6	14,801
Secondary	1.2	3,231	2.8	4,101	2.0	7,332
More than secondary	2.8	437	0.9	399	2.0	836
Wealth quintile						
Lowest	2.4	2,407	4.5	3,197	3.5	5,604
Second	2.9	2,459	5.5	3,172	4.2	5,631
Middle	1.8	2,415	5.0	3,200	3.4	5,615
Fourth	3.1	1,953	5.8	2,778	4.5	4,731
Highest	1.8	1,591	4.4	2,714	3.3	4,305
Pregnancy status						
Currently pregnant	NA	NA	2.3	1,351	NA	NA
Not currently pregnant	NA	NA	5.3	13,580	NA	NA
Total 15-49 years	2.4	10,833	5.0	15,064	3.8	25,897

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

Table 6.2 HIV prevalence by demographic characteristics: Adults aged 15 years and older

Prevalence of HIV among adults aged 15 years and older, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Residence						
Urban	3.3	4,369	6.5	6,708	5.0	11,077
Rural	2.9	10,002	5.0	12,584	4.0	22,586
Mainland/Zanzibar						
Mainland	3.2	13,474	5.8	18,211	4.5	31,685
Zanzibar	0.3	897	0.6	1,081	0.4	1,978
Mainland, by region						
Dodoma	1.3	800	4.5	1,098	3.0	1,898
Arusha	0.4	220	5.2	304	2.9	524
Kilimanjaro	2.8	261	5.0	381	4.0	642
Tanga	2.4	405	3.4	515	2.9	920
Morogoro	2.8	839	3.6	1,182	3.3	2,021
Pwani	3.2	332	6.0	485	4.8	817
Dar es Salaam	2.3	667	5.9	1,034	4.2	1,701
Lindi	1.0	247	4.0	340	2.6	587
Mtwara	1.3	267	4.1	387	2.8	654
Ruvuma	3.9	452	5.9	582	4.9	1,034
Iringa	7.5	785	14.3	1,065	11.1	1,850
Mbeya	7.5	727	11.4	978	9.6	1,705
Singida	2.3	494	3.7	651	3.0	1,145
Tabora	4.5	454	6.7	564	5.6	1,018
Rukwa	2.3	347	3.7	463	3.0	810
Kigoma	1.3	452	2.0	642	1.7	1,094
Shinyanga	3.4	407	7.5	567	5.6	974
Kagera	4.8	1,003	6.6	1,215	5.7	2,218
Mwanza	3.4	1,062	5.9	1,423	4.7	2,485
Mara	2.7	405	7.0	577	5.0	982
Manyara	1.3	237	2.3	292	1.8	529
Njombe	8.6	723	16.0	1,099	12.7	1,822
Katavi	3.1	466	4.5	584	3.8	1,050
Simiyu	2.7	558	4.7	688	3.7	1,246
Geita	4.2	525	5.6	672	4.9	1,197
Songwe	4.5	339	7.6	423	6.0	762
Zanzibar, by island						
Unguja	0.2	447	0.7	542	0.5	989
Pemba	0.4	450	0.3	539	0.3	989
Zanzibar, by region						
Kaskazini Unguja	0.0	62	1.6	66	0.7	128
Kusini Unguja	(0.0)	48	1.5	63	0.8	111
Mjini Magharibi	0.3	337	0.4	413	0.4	750
Kaskazini Pemba	0.0	187	0.3	263	0.2	450
Kusini Pemba	0.6	263	0.3	276	0.5	539

Table 6.2 HIV prevalence by demographic characteristics: Adults aged 15 years and older (continued)

Prevalence of HIV among adults aged 15 years and older, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Marital status						
Never married	1.1	4,501	2.9	3,835	1.9	8,336
Married or living together	3.7	8,611	4.3	11,220	4.0	19,831
Divorced or separated	7.3	947	11.5	2,121	10.0	3,068
Widowed	7.6	284	13.3	2,083	12.6	2,367
Education						
No education	4.1	1,535	6.0	3,678	5.4	5,213
Primary	3.6	8,807	6.8	10,918	5.2	19,725
Secondary	1.5	3,505	3.0	4,258	2.3	7,763
More than secondary	2.7	513	1.3	420	2.1	933
Wealth quintile						
Lowest	3.0	3,296	5.1	4,187	4.0	7,483
Second	3.5	3,400	5.9	4,330	4.7	7,730
Middle	2.7	3,297	5.6	4,279	4.2	7,576
Fourth	3.7	2,437	6.6	3,386	5.2	5,823
Highest	2.3	1,932	4.9	3,106	3.8	5,038
Pregnancy status						
Currently pregnant	NA	NA	2.3	1,357	NA	NA
Not currently pregnant	NA	NA	5.9	17,796	NA	NA
Total 15+ years	3.0	14,371	5.6	19,292	4.4	33,663

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

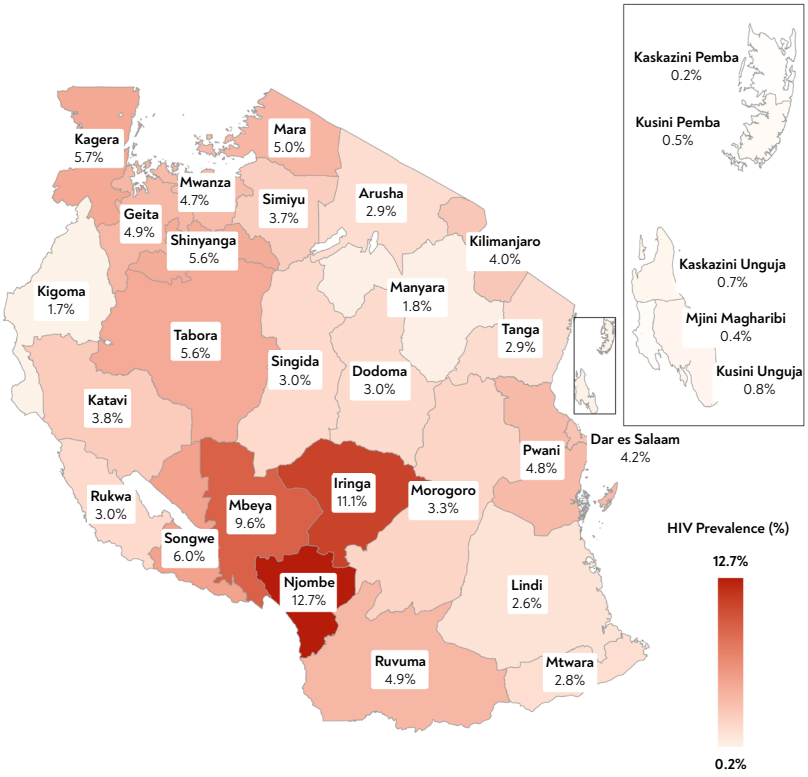


Figure 6.2.1
HIV prevalence among adults aged 15 years and older by region, THIS 2022-2023

Figure 6.2.2
HIV prevalence among adults aged 15 years and older by region, THIS 2022-2023

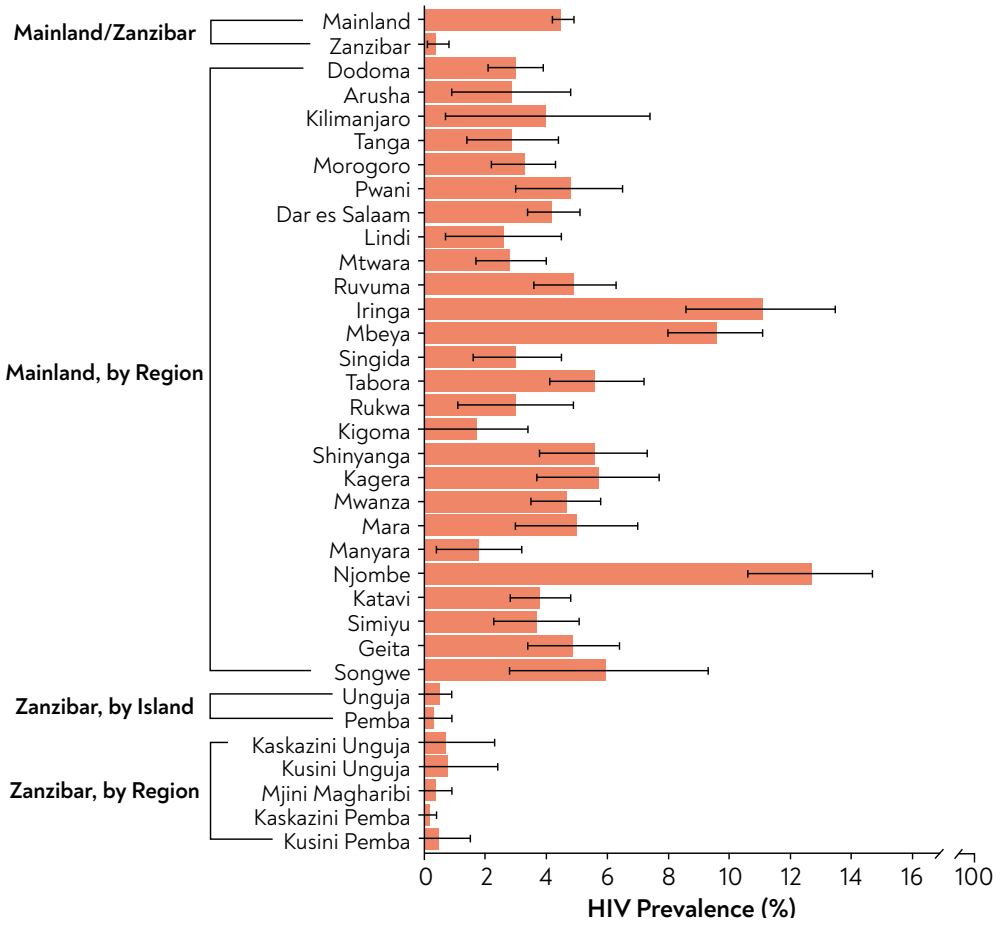


Table 6.3 HIV prevalence by age and sex

Prevalence of HIV among adults aged 15 years and older by sex and age, THIS 2022-2023

Age (years)	Men		Women		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
15-19	0.3	2,346	0.8	2,759	0.6	5,105
20-24	0.9	1,896	1.8	2,903	1.4	4,799
25-29	1.8	1,645	3.2	2,530	2.5	4,175
30-34	2.1	1,520	6.6	2,089	4.4	3,609
35-39	4.0	1,201	9.0	1,894	6.6	3,095
40-44	6.1	1,184	11.2	1,574	8.7	2,758
45-49	6.6	1,041	13.0	1,315	9.9	2,356
50-54	8.4	930	11.6	1,184	10.1	2,114
55-59	5.9	645	10.2	754	8.1	1,399
60-64	6.3	691	8.1	789	7.2	1,480
65+	3.7	1,272	4.3	1,501	4.0	2,773
Total 15-24 years	0.6	4,242	1.3	5,662	1.0	9,904
Total 15-49 years	2.4	10,833	5.0	15,064	3.8	25,897
Total 50+ years	6.0	3,538	8.0	4,228	7.1	7,766
Total 15+ years	3.0	14,371	5.6	19,292	4.4	33,663

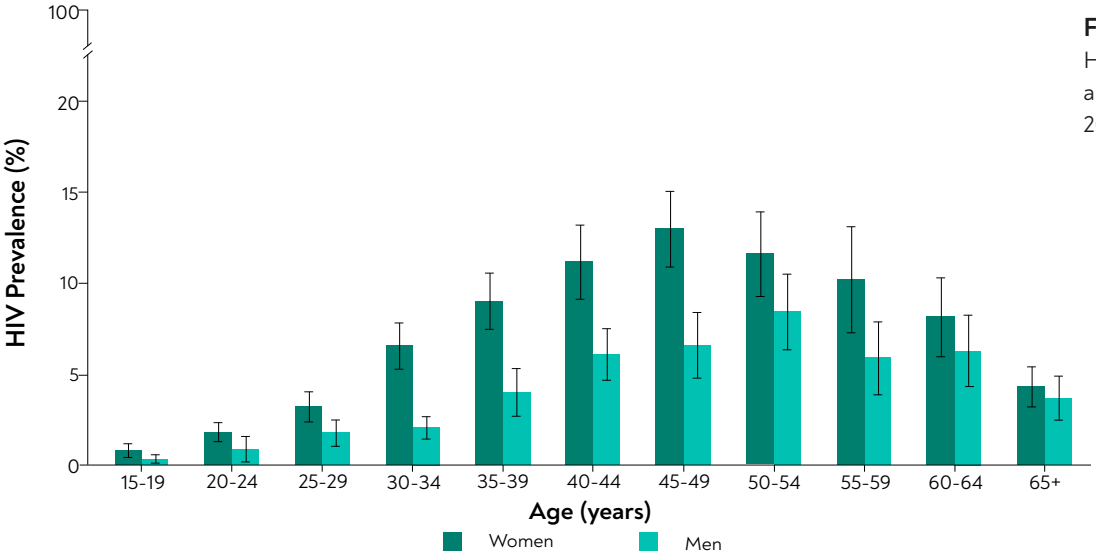


Figure 6.3
HIV prevalence by age and sex, THIS 2022-2023

7. HIV DIAGNOSIS AND TREATMENT

7.1 BACKGROUND

HIV testing is necessary for awareness of HIV status and is an essential first step to accessing prevention or treatment. It facilitates access to ART and prevention counseling for both people living with and without HIV, reducing the risk of HIV transmission or acquisition. Additionally, it can help individuals access screening services for other comorbidities. While many countries have expanded uptake of HIV testing services, enabling everyone to know their current HIV status remains a challenge. THIS 2022-2023 gathered data on HIV testing and awareness to help identify gaps in testing uptake, and whether there were subpopulations, such as adolescent girls and young women or men, who may need expanded or community-based HIV testing service options such as self-testing, mobile testing, partner notification/testing, and index case testing.

Once someone has been diagnosed with HIV, current guidelines recommend that they immediately be linked to HIV treatment services to start ART as soon as possible.[1,2] Treating people living with HIV as soon as possible can improve their immune recovery and preserve health, decreasing the risk of opportunistic infections, cancers, and other serious non-AIDS related events and mortality.[1] In addition, it can help them to protect their loved ones from sexual and vertical transmission HIV. In 2016, after an extensive review of evidence of both the clinical and population-level benefits of expanding ART, WHO changed their ART policy recommendations to "Treat All" regardless of CD4 count. By November 2017, all countries in sub-Saharan Africa had adopted this policy, despite the challenges in ensuring uptake and implementation.[2] This policy was adopted in Tanzania in 2016.[3]

7.2 RESULTS

Tables 7.1.A-C report on self-reported uptake of testing and receipt of results (ever or within the 12 months before the survey) among men, women, and adults aged 15 years and older by survey HIV test result and other selected characteristics. Figure 7.1 illustrates self-reported testing in the 12 months before the survey to understand frequent or recent testing by age and sex.

Tables 7.2.A-C and Figure 7.2 present the proportion of participants who tested positive in THIS 2022-2023 who reported awareness of their status as well as the proportion of those who were aware of their HIV-positive status who reported that they were also on ART.

Note that since participants are sometimes reluctant to reveal their HIV and treatment status in a household survey, THIS 2022-2023 determined whether they were taking ART by screening their blood for the presence of selected ARVs (efavirenz, nevirapine, atazanavir, lopinavir, and dolutegravir) used in first- and second-line regimens in the country at the time of the survey. Since many tables in this report describe estimates among self-reported people living with HIV without adjustment for ARV detection, Tables 7.3.A-C reports the concordance of self-reported and actual ART use based upon these ARV biomarker data.

Table 7.1.A Self-reported HIV testing: Men

Percentage of men aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all men			Among men who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Result of THIS HIV test						
HIV positive	92.8	39.2	534	73.3	31.4	116
HIV negative	67.5	35.2	13,255	67.4	35.2	13,252
Not tested	75.2	48.0	984	75.1	48.1	974

Table 7.1.A Self-reported HIV testing: Men (continued)

Percentage of men aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all men			Among men who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Residence						
Urban	71.3	37.9	4,631	70.7	37.9	4,507
Rural	67.3	35.3	10,142	66.6	35.1	9,835
Mainland/Zanzibar						
Mainland	69.1	36.4	13,941	68.4	36.3	13,511
Zanzibar	59.9	32.8	832	59.9	32.8	831
Mainland, by region						
Dodoma	58.1	28.4	843	57.6	28.4	833
Arusha	56.7	28.2	237	56.5	27.9	236
Kilimanjaro	70.8	33.3	262	70.2	33.5	255
Tanga	66.4	36.2	405	65.8	35.6	398
Morogoro	70.9	37.9	874	70.4	37.4	857
Pwani	69.3	37.7	364	68.9	37.4	359
Dar es Salaam	74.7	40.6	790	74.4	40.6	777
Lindi	67.2	39.8	269	67.1	39.5	268
Mtwara	63.7	33.2	277	63.6	33.2	276
Ruvuma	80.0	47.3	447	79.2	46.8	430
Iringa	78.3	31.3	820	76.9	30.2	767
Mbeya	72.1	33.8	756	70.6	33.2	712
Singida	63.1	33.1	509	62.6	32.9	500
Tabora	78.1	46.7	482	77.5	47.5	467
Rukwa	73.5	34.0	339	73.0	34.3	331
Kigoma	64.7	33.9	437	64.4	33.9	433
Shinyanga	78.5	43.3	406	78.0	43.7	395
Kagera	73.3	37.5	997	72.1	37.3	951
Mwanza	65.7	36.1	1,104	64.8	35.8	1,077
Mara	64.8	31.7	410	64.2	31.6	402
Manyara	47.9	23.0	257	47.7	22.7	256
Njombe	79.9	35.0	724	78.2	35.1	664
Katavi	74.7	41.6	478	73.9	42.0	462
Simiyu	72.6	37.3	585	71.9	37.7	569
Geita	66.7	36.8	508	65.7	36.4	490
Songwe	69.5	35.2	361	68.2	35.0	346
Zanzibar, by island						
Unguja	62.3	35.0	440	62.3	35.0	440
Pemba	53.3	26.6	392	53.2	26.7	391

Table 7.1.A Self-reported HIV testing: Men (continued)

Percentage of men aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all men			Among men who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Zanzibar, by region						
Kaskazini Unguja	46.1	35.6	59	46.1	35.6	59
Kusini Unguja	(75.3)	(50.7)	48	(75.3)	(50.7)	48
Mjini Magharibi	63.3	32.6	333	63.3	32.6	333
Kaskazini Pemba	49.2	24.6	169	49.2	24.6	169
Kusini Pemba	56.4	28.3	223	56.3	28.4	222
Marital status						
Never married	40.5	20.0	4,685	40.2	19.8	4,654
Married or living together	86.0	46.9	8,810	85.6	47.0	8,495
Divorced or separated	81.4	40.4	970	80.4	39.8	909
Widowed	67.6	23.9	278	65.2	23.5	255
Education						
No education	63.4	32.1	1,540	62.1	32.0	1,483
Primary	69.9	36.2	8,982	69.0	36.0	8,659
Secondary	64.6	35.1	3,658	64.3	35.0	3,612
More than secondary	89.1	52.0	580	89.0	52.1	575
Wealth quintile						
Lowest	63.5	32.9	3,347	62.6	32.7	3,253
Second	65.6	33.2	3,456	64.6	32.9	3,339
Middle	69.0	35.6	3,356	68.3	35.4	3,244
Fourth	73.6	39.9	2,520	73.0	39.7	2,444
Highest	73.6	41.0	2,085	73.2	41.0	2,053
Age (years)						
15-19	22.6	10.2	2,426	22.3	10.2	2,416
20-24	61.2	34.9	1,983	61.0	34.7	1,977
25-29	85.5	50.7	1,758	85.4	50.7	1,743
30-34	90.1	51.7	1,583	90.0	51.8	1,549
35-39	91.0	49.2	1,266	90.8	48.8	1,218
40-44	88.4	45.9	1,215	88.0	46.3	1,153
45-49	87.8	44.4	1,049	87.2	44.2	988
50-54	80.9	34.6	940	79.5	34.3	866
55-59	78.9	35.6	634	77.8	35.4	591
60-64	69.5	31.8	694	67.8	31.3	659
65+	58.3	23.2	1,225	56.8	23.2	1,182

Table 7.1.A Self-reported HIV testing: Men (continued)

Percentage of men aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all men			Among men who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Total 15-24 years	40.0	21.3	4,409	39.7	21.2	4,393
Total 15-49 years	68.3	37.5	11,280	67.8	37.3	11,044
Total 50+ years	71.1	30.6	3,493	69.6	30.3	3,298
Total 15+ years	68.8	36.3	14,773	68.1	36.1	14,342

[1] Relates to PEPFAR indicator HTS_TST: Number of individuals who received HIV testing services and received their test results.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

Table 7.1.B Self-reported HIV testing: Women

Percentage of women aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all women			Among women who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Result of THIS HIV test						
HIV positive	96.3	39.3	1,242	81.3	38.7	217
HIV negative	77.0	39.5	17,169	77.0	39.5	17,161
Not tested	84.3	56.7	1,202	84.1	57.0	1,185
Residence						
Urban	81.2	43.6	6,979	80.2	43.8	6,579
Rural	76.8	38.7	12,634	75.8	38.7	11,984
Mainland/Zanzibar						
Mainland	78.7	40.7	18,663	77.7	40.8	17,617
Zanzibar	72.8	39.3	950	72.7	39.4	946
Mainland, by region						
Dodoma	69.9	31.4	1,139	68.9	30.9	1,102
Arusha	76.2	37.7	330	75.3	36.6	320
Kilimanjaro	78.2	33.4	388	77.2	33.3	367
Tanga	78.2	46.8	518	77.6	46.3	502
Morogoro	81.9	40.0	1,224	81.5	39.9	1,196
Pwani	79.5	40.4	525	78.5	40.3	497
Dar es Salaam	83.9	45.2	1,163	83.2	44.8	1,113
Lindi	75.6	38.1	345	74.8	37.5	333

Table 7.1.B Self-reported HIV testing: Women (continued)

Percentage of women aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all women			Among women who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Mtwara	73.1	35.8	396	72.2	35.6	382
Ruvuma	87.1	51.5	571	86.5	51.4	543
Iringa	86.8	39.4	1,081	85.0	39.6	952
Mbeya	81.5	40.3	1,011	79.6	41.0	912
Singida	73.1	37.9	663	72.4	37.9	644
Tabora	83.0	47.1	590	82.2	48.4	562
Rukwa	77.6	40.0	466	76.9	39.8	451
Kigoma	71.9	32.3	609	71.4	32.4	596
Shinyanga	81.7	46.1	567	80.7	47.2	532
Kagera	79.9	41.5	1,178	78.7	41.8	1,103
Mwanza	76.7	39.2	1,462	75.7	39.6	1,396
Mara	76.7	38.7	585	75.3	39.0	551
Manyara	72.2	34.2	322	72.0	34.4	320
Njombe	85.7	36.6	1,086	83.2	37.3	918
Katavi	79.9	46.7	595	79.1	47.0	572
Simiyu	78.7	41.2	723	77.9	41.3	693
Geita	75.9	45.6	667	74.6	46.1	632
Songwe	84.2	41.8	459	83.0	41.9	428
Zanzibar, by island						
Unguja	75.6	41.1	511	75.6	41.3	509
Pemba	64.9	34.1	439	64.7	34.0	437
Zanzibar, by region						
Kaskazini Unguja	70.3	43.3	63	70.3	43.3	63
Kusini Unguja	78.3	47.0	64	77.9	47.7	63
Mjini Magharibi	76.1	39.8	384	76.1	39.9	383
Kaskazini Pemba	61.2	32.3	219	61.0	32.4	218
Kusini Pemba	68.7	36.0	220	68.6	35.8	219
Marital status						
Never married	48.7	29.0	3,978	47.7	28.6	3,879
Married or living together	91.2	46.4	11,477	90.9	46.6	11,022
Divorced or separated	90.0	47.7	2,125	88.9	49.2	1,880
Widowed	64.5	26.9	2,001	60.1	25.5	1,751
Education						
No education	70.7	32.0	3,616	69.4	31.6	3,430
Primary	83.1	41.7	11,122	82.1	41.9	10,378
Secondary	72.6	42.7	4,399	72.0	42.9	4,286
More than secondary	90.0	52.9	459	89.9	53.1	454

Table 7.1.B Self-reported HIV testing: Women (continued)

Percentage of women aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all women			Among women who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Wealth quintile						
Lowest	74.4	38.0	4,224	73.5	38.0	4,064
Second	75.9	37.2	4,350	74.6	36.9	4,094
Middle	77.9	38.9	4,281	76.9	39.1	4,005
Fourth	82.2	43.5	3,481	81.2	43.9	3,254
Highest	82.8	46.0	3,273	82.2	46.0	3,142
Age (years)						
15-19	38.2	24.5	2,844	37.9	24.2	2,829
20-24	89.3	54.1	3,015	89.3	54.2	2,983
25-29	97.1	56.7	2,652	97.1	57.1	2,578
30-34	97.4	50.9	2,176	97.2	51.7	2,040
35-39	95.7	45.1	1,955	95.4	45.3	1,795
40-44	93.1	41.8	1,616	92.4	41.5	1,456
45-49	88.8	35.5	1,305	87.4	34.6	1,133
50-54	80.5	32.7	1,166	78.3	32.6	1,037
55-59	71.4	26.6	736	69.0	26.3	671
60-64	66.3	24.1	744	64.0	23.5	691
65+	45.5	17.2	1,404	43.3	16.8	1,350
Total 15-24 years	63.0	38.9	5,859	62.8	38.8	5,812
Total 15-49 years	81.8	44.2	15,563	81.1	44.3	14,814
Total 50+ years	63.6	24.4	4,050	61.0	23.9	3,749
Total 15+ years	78.5	40.6	19,613	77.6	40.7	18,563

[1] Relates to PEPFAR indicator HTS_TST: Number of individuals who received HIV testing services and received their test results.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 7.1.C Self-reported HIV testing: Total

Percentage of adults aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all adults			Among adults who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Result of THIS HIV test						
HIV positive	95.1	39.3	1,776	78.1	35.8	333
HIV negative	72.4	37.4	30,424	72.4	37.4	30,413
Not tested	79.8	52.4	2,186	79.6	52.6	2,159

Table 7.1.C Self-reported HIV testing: Total (continued)

Percentage of adults aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all adults			Among adults who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Residence						
Urban	76.6	41.0	11,610	75.8	41.1	11,086
Rural	72.1	37.0	22,776	71.2	36.9	21,819
Mainland/Zanzibar						
Mainland	74.1	38.6	32,604	73.2	38.6	31,128
Zanzibar	66.1	35.9	1,782	66.1	36.0	1,777
Mainland, by region						
Dodoma	64.3	30.0	1,982	63.5	29.7	1,935
Arusha	66.6	33.0	567	65.8	32.3	556
Kilimanjaro	74.9	33.3	650	74.0	33.4	622
Tanga	72.5	41.7	923	71.8	41.1	900
Morogoro	76.8	39.0	2,098	76.3	38.7	2,053
Pwani	74.9	39.2	889	74.0	38.9	856
Dar es Salaam	79.6	43.0	1,953	79.0	42.8	1,890
Lindi	71.6	38.9	614	71.0	38.5	601
Mtwara	68.7	34.6	673	68.1	34.5	658
Ruvuma	83.7	49.5	1,018	83.0	49.1	973
Iringa	82.8	35.6	1,901	81.1	35.0	1,719
Mbeya	77.0	37.2	1,767	75.2	37.2	1,624
Singida	68.3	35.6	1,172	67.6	35.5	1,144
Tabora	80.6	46.9	1,072	79.9	48.0	1,029
Rukwa	75.7	37.1	805	75.0	37.1	782
Kigoma	68.6	33.1	1,046	68.1	33.1	1,029
Shinyanga	80.2	44.8	973	79.4	45.5	927
Kagera	76.6	39.5	2,175	75.3	39.6	2,054
Mwanza	71.3	37.7	2,566	70.3	37.7	2,473
Mara	71.1	35.4	995	70.0	35.4	953
Manyara	60.1	28.6	579	59.9	28.6	576
Njombe	83.1	35.9	1,810	80.9	36.3	1,582
Katavi	77.3	44.2	1,073	76.5	44.5	1,034
Simiyu	75.7	39.3	1,308	74.9	39.5	1,262
Geita	71.4	41.3	1,175	70.3	41.4	1,122
Songwe	77.0	38.6	820	75.7	38.5	774
Zanzibar, by island						
Unguja	68.8	38.0	951	68.7	38.0	949
Pemba	58.9	30.2	831	58.7	30.2	828
Zanzibar, by region						
Kaskazini Unguja	57.4	39.2	122	57.4	39.2	122

Table 7.1.C Self-reported HIV testing: Total (continued)

Percentage of adults aged 15 years and older who reported they had ever received an HIV test, and percentage who reported they had received an HIV test in the 12 months before the survey, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Among all adults			Among adults who did not report an HIV-positive status		
	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number	Percentage who had ever received an HIV test	Percentage who received an HIV test in the 12 months before the survey[1]	Number
Kusini Unguja	76.9	48.7	112	76.7	49.1	111
Mjini Magharibi	69.5	36.1	717	69.4	36.1	716
Kaskazini Pemba	55.4	28.6	388	55.3	28.6	387
Kusini Pemba	61.9	31.7	443	61.8	31.7	441
Marital status						
Never married	43.9	23.7	8,663	43.3	23.4	8,533
Married or living together	88.7	46.6	20,287	88.4	46.8	19,517
Divorced or separated	87.0	45.2	3,095	85.8	45.8	2,789
Widowed	64.9	26.5	2,279	60.7	25.3	2,006
Education						
No education	68.3	32.0	5,156	67.0	31.7	4,913
Primary	76.6	39.0	20,104	75.6	38.9	19,037
Secondary	68.6	38.9	8,057	68.1	38.9	7,898
More than secondary	89.5	52.3	1,039	89.4	52.4	1,029
Wealth quintile						
Lowest	69.1	35.5	7,571	68.1	35.4	7,317
Second	70.9	35.2	7,806	69.7	34.9	7,433
Middle	73.6	37.3	7,637	72.7	37.3	7,249
Fourth	78.1	41.8	6,001	77.2	41.9	5,698
Highest	78.7	43.7	5,358	78.1	43.7	5,195
Age (years)						
15-19	30.5	17.4	5,270	30.2	17.2	5,245
20-24	76.4	45.2	4,998	76.2	45.2	4,960
25-29	91.7	53.9	4,410	91.5	54.1	4,321
30-34	93.9	51.3	3,759	93.7	51.7	3,589
35-39	93.4	47.0	3,221	93.1	47.0	3,013
40-44	90.9	43.8	2,831	90.2	43.9	2,609
45-49	88.3	39.8	2,354	87.3	39.4	2,121
50-54	80.7	33.6	2,106	78.9	33.4	1,903
55-59	75.1	31.0	1,370	73.4	30.8	1,262
60-64	67.8	27.9	1,438	65.9	27.3	1,350
65+	51.2	19.9	2,629	49.4	19.7	2,532
Total 15-24 years	52.0	30.4	10,268	51.7	30.3	10,205
Total 15-49 years	75.3	41.0	26,843	74.6	40.9	25,858
Total 50+ years	67.2	27.4	7,543	65.1	27.0	7,047
Total 15+ years	73.9	38.5	34,386	73.0	38.5	32,905

[1] Relates to PEPFAR indicator HTS_TST: Number of individuals who received HIV testing services and received their test results.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

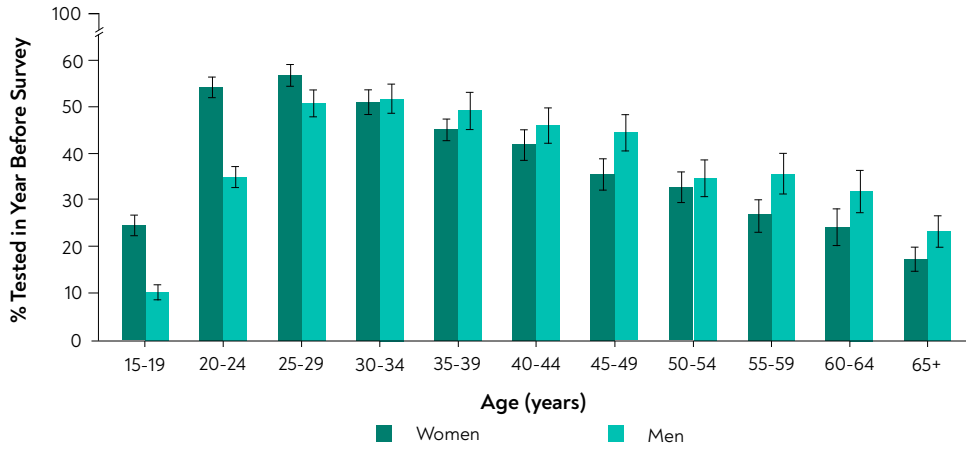


Figure 7.1.
Proportion of adults who reported having received an HIV test in the 12 months before the survey, by age and sex, THIS 2022-2023

Table 7.2.A HIV diagnosis and treatment status: Men

Percent distribution of men living with HIV aged 15 years and older, diagnosed and on treatment, based on self-reported HIV status and antiretroviral (ARV) therapy (ART) use (adjusted by detection of an ARV in blood), by selected demographic characteristics, THIS 2022-2023

Characteristic	Unaware of HIV status	Aware of HIV status and not on ART	Aware of HIV status and on ART[1]	Total	Number
Residence					
Urban	23.4	1.4	75.2	100.0	172
Rural	20.5	3.4	76.2	100.0	379
Mainland/Zanzibar					
Mainland	21.5	2.6	75.9	100.0	548
Zanzibar	*	*	*	*	*
Mainland, by region					
Dodoma	*	*	*	*	*
Arusha	*	*	*	*	*
Kilimanjaro	*	*	*	*	*
Tanga	*	*	*	*	*
Morogoro	(28.6)	(0.0)	(71.4)	(100.0)	27
Pwani	*	*	*	*	*
Dar es Salaam	*	*	*	*	*
Lindi	*	*	*	*	*
Mtwara	*	*	*	*	*
Ruvuma	*	*	*	*	*
Iringa	19.9	0.0	80.1	100.0	61
Mbeya	22.0	0.0	78.0	100.0	61
Singida	*	*	*	*	*
Tabora	*	*	*	*	*
Rukwa	*	*	*	*	*
Kigoma	*	*	*	*	*
Shinyanga	*	*	*	*	*

Table 7.2.A HIV diagnosis and treatment status: Men (continued)

Percent distribution of men living with HIV aged 15 years and older, diagnosed and on treatment, based on self-reported HIV status and antiretroviral (ARV) therapy (ART) use (adjusted by detection of an ARV in blood), by selected demographic characteristics, THIS 2022-2023

Characteristic	Unaware of HIV status	Aware of HIV status and not on ART	Aware of HIV status and on ART[1]	Total	Number
Kagera	15.3	0.0	84.7	100.0	54
Mwanza	(6.2)	(5.0)	(88.8)	(100.0)	38
Mara	*	*	*	*	*
Manyara	*	*	*	*	*
Njombe	8.0	3.3	88.7	100.0	66
Katavi	*	*	*	*	*
Simiyu	*	*	*	*	*
Geita	(35.1)	(0.0)	(64.9)	(100.0)	27
Songwe	*	*	*	*	*
Zanzibar, by island					
Unguja	*	*	*	*	*
Pemba	*	*	*	*	*
Zanzibar, by region					
Kaskazini Unguja	*	*	*	*	*
Kusini Unguja	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*
Kusini Pemba	*	*	*	*	*
Marital status					
Never married	(24.3)	(0.0)	(75.7)	(100.0)	49
Married or living together	21.6	3.0	75.4	100.0	395
Divorced or separated	21.0	3.4	75.6	100.0	82
Widowed	*	*	*	*	*
Education					
No education	24.6	0.0	75.4	100.0	70
Primary	20.7	3.3	76.0	100.0	398
Secondary	20.2	2.1	77.7	100.0	71
More than secondary	*	*	*	*	*
Wealth quintile					
Lowest	20.2	0.9	78.9	100.0	118
Second	16.8	6.8	76.4	100.0	145
Middle	15.4	1.2	83.3	100.0	131
Fourth	29.3	0.7	70.1	100.0	105
Highest	28.5	3.1	68.3	100.0	52
Age (years)					
15-19	*	*	*	*	*
20-24	*	*	*	*	*
25-29	(38.0)	(4.1)	(57.9)	(100.0)	29
30-34	(26.0)	(6.5)	(67.4)	(100.0)	44
35-39	24.5	6.7	68.8	100.0	59
40-44	35.0	2.3	62.7	100.0	88

Table 7.2.A HIV diagnosis and treatment status: Men (continued)

Percent distribution of men living with HIV aged 15 years and older, diagnosed and on treatment, based on self-reported HIV status and antiretroviral (ARV) therapy (ART) use (adjusted by detection of an ARV in blood), by selected demographic characteristics, THIS 2022-2023

Characteristic	Unaware of HIV status	Aware of HIV status and not on ART	Aware of HIV status and on ART[1]	Total	Number
45-49	20.0	3.3	76.7	100.0	76
50-54	18.1	1.0	80.9	100.0	87
55-59	10.2	0.0	89.8	100.0	53
60-64	(15.9)	(0.0)	(84.1)	(100.0)	41
65+	(1.6)	(0.0)	(98.4)	(100.0)	49
Total 15-24 years	(12.7)	(0.0)	(87.3)	(100.0)	25
Total 15-49 years	26.7	3.8	69.5	100.0	321
Total 50+ years	12.8	0.4	86.8	100.0	230
Total 15+ years	21.6	2.6	75.8	100.0	551

[1] Relates to Global AIDS Monitoring Indicator 2022 1.2: People living with HIV on antiretroviral therapy (ART) and PEPFAR TX_CURR_NAT / SUBNAT: Percentage of adults and children receiving antiretroviral therapy.

* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 7.2.B HIV diagnosis and treatment status: Women

Percent distribution of women living with HIV aged 15 years and older, diagnosed and on treatment, based on self-reported HIV status and antiretroviral (ARV) therapy (ART) use (adjusted by detection of an ARV in blood), by selected demographic characteristics, THIS 2022-2023

Characteristic	Unaware of HIV status	Aware of HIV status and not on ART	Aware of HIV status and on ART[1]	Total	Number
Residence					
Urban	15.3	1.8	82.9	100.0	509
Rural	15.1	1.0	83.9	100.0	790
Mainland/Zanzibar					
Mainland	15.2	1.4	83.5	100.0	1,293
Zanzibar	*	*	*	*	*
Mainland, by region					
Dodoma	22.8	7.2	70.0	100.0	52
Arusha	*	*	*	*	*
Kilimanjaro	*	*	*	*	*
Tanga	*	*	*	*	*
Morogoro	(28.9)	(2.0)	(69.1)	(100.0)	43
Pwani	(14.5)	(0.0)	(85.5)	(100.0)	35
Dar es Salaam	18.6	0.0	81.4	100.0	67
Lindi	*	*	*	*	*
Mtwara	*	*	*	*	*
Ruvuma	(26.0)	(0.0)	(74.0)	(100.0)	37
Iringa	11.4	1.3	87.3	100.0	154
Mbeya	9.4	0.2	90.4	100.0	119

Table 7.2.B HIV diagnosis and treatment status: Women (continued)

Percent distribution of women living with HIV aged 15 years and older, diagnosed and on treatment, based on self-reported HIV status and antiretroviral (ARV) therapy (ART) use (adjusted by detection of an ARV in blood), by selected demographic characteristics, THIS 2022-2023

Characteristic	Unaware of HIV status	Aware of HIV status and not on ART	Aware of HIV status and on ART[1]	Total	Number
Singida	(28.7)	(0.0)	(71.3)	(100.0)	27
Tabora	(24.4)	(5.4)	(70.2)	(100.0)	40
Rukwa	*	*	*	*	*
Kigoma	*	*	*	*	*
Shinyanga	(19.4)	(0.0)	(80.6)	(100.0)	46
Kagera	10.7	0.0	89.3	100.0	87
Mwanza	10.2	2.4	87.4	100.0	91
Mara	(14.3)	(0.0)	(85.7)	(100.0)	43
Manyara	*	*	*	*	*
Njombe	7.1	1.2	91.7	100.0	185
Katavi	(17.1)	(3.3)	(79.6)	(100.0)	28
Simiyu	(8.3)	(0.0)	(91.7)	(100.0)	35
Geita	(9.0)	(2.9)	(88.1)	(100.0)	41
Songwe	(9.2)	(0.0)	(90.8)	(100.0)	33
Zanzibar, by island					
Unguja	*	*	*	*	*
Pemba	*	*	*	*	*
Zanzibar, by region					
Kaskazini Unguja	*	*	*	*	*
Kusini Unguja	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*
Kusini Pemba	*	*	*	*	*
Marital status					
Never married	24.4	0.2	75.4	100.0	142
Married or living together	16.8	1.8	81.4	100.0	568
Divorced or separated	11.2	1.5	87.4	100.0	290
Widowed	11.1	1.1	87.8	100.0	298
Education					
No education	19.8	0.5	79.7	100.0	242
Primary	13.4	1.3	85.2	100.0	892
Secondary	17.4	2.8	79.8	100.0	155
More than secondary	*	*	*	*	*
Wealth quintile					
Lowest	21.9	0.6	77.5	100.0	224
Second	12.3	1.5	86.2	100.0	302
Middle	13.9	1.2	84.8	100.0	320
Fourth	11.6	1.0	87.4	100.0	274
Highest	17.5	2.7	79.9	100.0	179

Table 7.2.B HIV diagnosis and treatment status: Women (continued)

Percent distribution of women living with HIV aged 15 years and older, diagnosed and on treatment, based on self-reported HIV status and antiretroviral (ARV) therapy (ART) use (adjusted by detection of an ARV in blood), by selected demographic characteristics, THIS 2022-2023

Characteristic	Unaware of HIV status	Aware of HIV status and not on ART	Aware of HIV status and on ART[1]	Total	Number
Age (years)					
15-19	*	*	*	*	*
20-24	46.4	0.5	53.1	100.0	67
25-29	16.4	4.2	79.4	100.0	100
30-34	13.2	1.4	85.5	100.0	166
35-39	14.1	1.6	84.3	100.0	193
40-44	13.2	3.1	83.8	100.0	185
45-49	11.8	1.0	87.1	100.0	201
50-54	10.1	0.0	89.9	100.0	149
55-59	13.9	0.0	86.1	100.0	80
60-64	14.3	0.0	85.7	100.0	69
65+	11.8	0.0	88.2	100.0	66
Total 15-24 years	40.5	0.3	59.2	100.0	90
Total 15-49 years	16.4	1.9	81.8	100.0	935
Total 50+ years	12.1	0.0	87.9	100.0	364
Total 15+ years	15.2	1.4	83.4	100.0	1,299

[1] Relates to Global AIDS Monitoring Indicator 2022 1.2: People living with HIV on antiretroviral therapy (ART) and PEPFAR TX_CURR_NAT / SUBNAT: Percentage of adults and children receiving antiretroviral therapy.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 7.2.C HIV diagnosis and treatment status: Total

Percent distribution of adults living with HIV aged 15 years and older, diagnosed and on treatment, based on self-reported HIV status and antiretroviral (ARV) therapy (ART) use (adjusted by detection of an ARV in blood), by selected demographic characteristics, THIS 2022-2023

Characteristic	Unaware of HIV status	Aware of HIV status and not on ART	Aware of HIV status and on ART[1]	Total	Number
Residence					
Urban	17.8	1.7	80.5	100.0	681
Rural	17.0	1.8	81.2	100.0	1,169
Mainland/Zanzibar					
Mainland	17.3	1.8	80.9	100.0	1,841
Zanzibar	*	*	*	*	*
Mainland, by region					
Dodoma	21.2	5.8	73.1	100.0	64
Arusha	*	*	*	*	*
Kilimanjaro	(13.4)	(2.7)	(83.9)	(100.0)	32
Tanga	(6.5)	(0.0)	(93.5)	(100.0)	27
Morogoro	28.8	1.2	70.0	100.0	70
Pwani	(24.5)	(2.3)	(73.3)	(100.0)	44
Dar es Salaam	21.4	0.0	78.6	100.0	85

Table 7.2.C HIV diagnosis and treatment status: Total (continued)

Percent distribution of adults living with HIV aged 15 years and older, diagnosed and on treatment, based on self-reported HIV status and antiretroviral (ARV) therapy (ART) use (adjusted by detection of an ARV in blood), by selected demographic characteristics, THIS 2022-2023

Characteristic	Unaware of HIV status	Aware of HIV status and not on ART	Aware of HIV status and on ART[1]	Total	Number
Lindi	*	*	*	*	*
Mtwara	*	*	*	*	*
Ruvuma	17.7	2.9	79.4	100.0	56
Iringa	14.1	0.9	85.0	100.0	215
Mbeya	14.1	0.1	85.8	100.0	180
Singida	(27.6)	(3.0)	(69.4)	(100.0)	40
Tabora	28.1	5.5	66.4	100.0	63
Rukwa	(13.5)	(0.0)	(86.5)	(100.0)	29
Kigoma	*	*	*	*	*
Shinyanga	22.3	0.0	77.7	100.0	62
Kagera	12.6	0.0	87.4	100.0	141
Mwanza	8.8	3.3	87.9	100.0	129
Mara	14.7	4.3	81.0	100.0	55
Manyara	*	*	*	*	*
Njombe	7.4	1.8	90.8	100.0	251
Katavi	(10.2)	(4.5)	(85.3)	(100.0)	44
Simiyu	7.8	0.0	92.2	100.0	52
Geita	19.7	1.7	78.5	100.0	68
Songwe	(8.2)	(0.0)	(91.8)	(100.0)	49
Zanzibar, by island					
Unguja	*	*	*	*	*
Pemba	*	*	*	*	*
Zanzibar, by region					
Kaskazini Unguja	*	*	*	*	*
Kusini Unguja	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*
Kusini Pemba	*	*	*	*	*
Marital status					
Never married	24.3	0.1	75.5	100.0	191
Married or living together	18.9	2.3	78.8	100.0	963
Divorced or separated	13.7	1.9	84.4	100.0	372
Widowed	11.6	1.0	87.4	100.0	322
Education					
No education	21.0	0.4	78.6	100.0	312
Primary	15.9	2.0	82.1	100.0	1,290
Secondary	18.3	2.6	79.1	100.0	226
More than secondary	*	*	*	*	*

Table 7.2.C HIV diagnosis and treatment status: Total (continued)

Percent distribution of adults living with HIV aged 15 years and older, diagnosed and on treatment, based on self-reported HIV status and antiretroviral (ARV) therapy (ART) use (adjusted by detection of an ARV in blood), by selected demographic characteristics, THIS 2022-2023

Characteristic	Unaware of HIV status	Aware of HIV status and not on ART	Aware of HIV status and on ART[1]	Total	Number
Wealth quintile					
Lowest	21.3	0.7	78.0	100.0	342
Second	13.9	3.4	82.7	100.0	447
Middle	14.4	1.2	84.4	100.0	451
Fourth	17.6	0.9	81.5	100.0	379
Highest	20.5	2.8	76.7	100.0	231
Age (years)					
15-19	(20.7)	(0.0)	(79.3)	(100.0)	35
20-24	37.9	0.3	61.8	100.0	80
25-29	23.5	4.2	72.3	100.0	129
30-34	16.1	2.5	81.4	100.0	210
35-39	17.1	3.1	79.8	100.0	252
40-44	20.6	2.8	76.6	100.0	273
45-49	14.5	1.8	83.7	100.0	277
50-54	13.4	0.4	86.2	100.0	236
55-59	12.5	0.0	87.5	100.0	133
60-64	15.0	0.0	85.0	100.0	110
65+	7.7	0.0	92.3	100.0	115
Total 15-24 years	32.3	0.2	67.4	100.0	115
Total 15-49 years	19.5	2.5	78.0	100.0	1,256
Total 50+ years	12.3	0.2	87.5	100.0	594
Total 15+ years	17.3	1.8	80.9	100.0	1,850

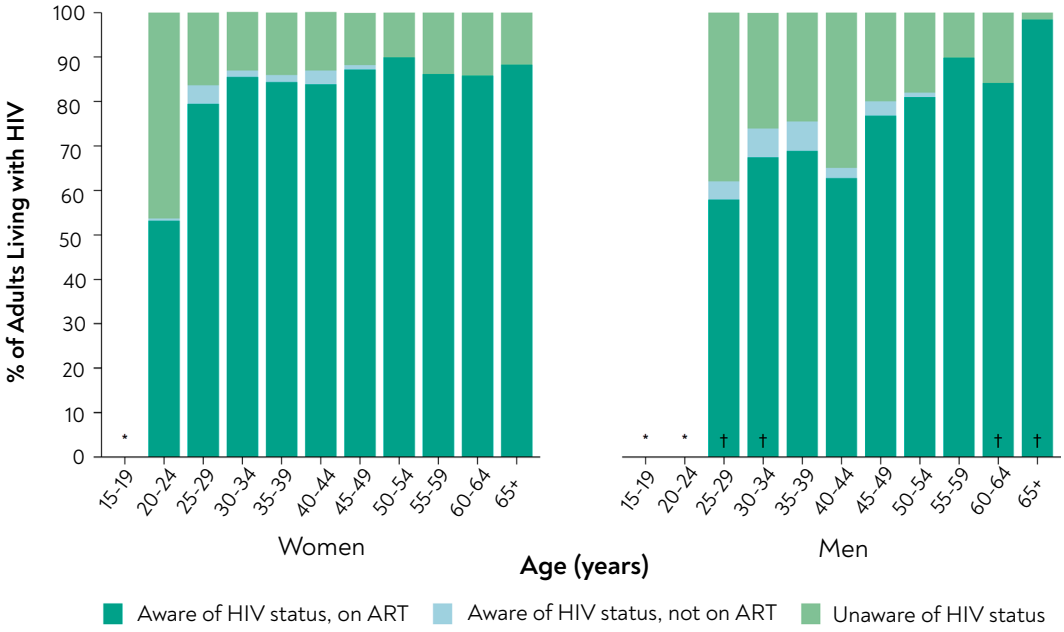
[1] Relates to Global AIDS Monitoring Indicator 2022 1.2: People living with HIV on antiretroviral therapy (ART) and PEPFAR TX_CURR_NAT / SUBNAT: Percentage of adults and children receiving antiretroviral therapy.

* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Figure 7.2
Proportion of adults living with HIV reporting awareness of HIV status and antiretroviral therapy use, by age and sex, THIS 2022-2023



Abbreviation: ART, antiretroviral therapy.
Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk.
Estimates based on a denominator between 25 and 49 are indicated by a dagger and should be interpreted with caution.

Table 7.3.A Concordance of self-reported treatment status versus presence of detectable antiretrovirals: Men

Percent distribution of men living with HIV aged 15 years and older by presence of detectable antiretrovirals (ARVs) versus self-reported HIV treatment status, THIS 2022-2023

Characteristic	ARV status		Total	Number
	Not detectable	Detectable		
Self-reported treatment status				
Not previously diagnosed	78.1	21.9	100.0	120
Previously diagnosed, not on ART	*	*	100.0	*
Previously diagnosed, on ART	4.3	95.7	100.0	415
Total 15-24 years	(20.3)	(79.7)	100.0	25
Total 15-49 years	33.7	66.3	100.0	320
Total 50+ years	15.2	84.8	100.0	230
Total 15+ years	27.0	73.0	100.0	550

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

Table 7.3.B Concordance of self-reported treatment status versus presence of detectable antiretrovirals: Women

Percent distribution of women living with HIV aged 15 years and older by presence of detectable antiretrovirals (ARVs) versus self-reported HIV treatment status, THIS 2022-2023

Characteristic	ARV status		Total	Number
	Not detectable	Detectable		
Self-reported treatment status				
Not previously diagnosed	73.0	27.0	100.0	233
Previously diagnosed, not on ART	(75.5)	(24.5)	100.0	25
Previously diagnosed, on ART	4.6	95.4	100.0	1,041
Total 15-24 years	46.2	53.8	100.0	90
Total 15-49 years	22.7	77.3	100.0	935
Total 50+ years	13.2	86.8	100.0	364
Total 15+ years	20.1	79.9	100.0	1,299

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

Table 7.3.C Concordance of self-reported treatment status versus presence of detectable ARVs: Total

Percent distribution of adults living with HIV aged 15 years and older by presence of detectable antiretrovirals (ARVs) versus self-reported HIV treatment status, THIS 2022-2023

Characteristic	ARV status		Total	Number
	Not detectable	Detectable		
Self-reported treatment status				
Not previously diagnosed	75.0	25.0	100	353
Previously diagnosed, not on ART	(81.4)	(18.6)	100	39
Previously diagnosed, on ART	4.5	95.5	100	1,456
Total 15-24 years	38.6	61.4	100	115
Total 15-49 years	26.0	74.0	100	1,255
Total 50+ years	14.0	86.0	100	594
Total 15+ years	22.4	77.6	100	1,849

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

7.3 REFERENCES

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3. Tymejczyk O, Brazier E, Yiannoutsos CT, et al. Changes in rapid HIV treatment initiation after national "treat all" policy adoption in 6 sub-Saharan African countries: Regression discontinuity analysis. *PLoS Med*. 2019;16(6):e1002822. 2019 Jun 10. doi:10.1371/journal.pmed.1002822.

8. VIRAL LOAD SUPPRESSION

8.1 BACKGROUND

Viral load suppression (VLS) is a key indicator of treatment efficacy in people living with HIV. Achieving VLS reduces the damage that HIV can do to the immune system, improves health outcomes, and reduces the risk of HIV transmission to others.

VLS among all people living with HIV is also an indicator of HIV programmatic success. In the 2016 *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection*, WHO set a threshold for VLS of less than 1,000 HIV RNA copies/mL.[1] This definition of VLS has been used by UNAIDS, PEPFAR, as well as across PHIAs to compare progress across countries and subnational areas.[2, 3] It should be noted that, to improve treatment monitoring in people living with HIV, WHO has since lowered the threshold for viral suppression, defining it as <50 copies/mL, while the threshold for treatment failure remains at 1,000 HIV RNA copies/mL or more.[4]

This chapter describes VLS among the population of adults living with HIV by age, sex, region, and other demographic characteristics.

Recent research suggests other potential programmatic uses for viral load data. This chapter presents estimates, by region, of the proportion of the population with HIV viremia, which may be correlated with HIV incidence.[5,6] Population viremia is the prevalence of unsuppressed viral load (defined here as ≥ 1,000 copies/mL) measured without regard to HIV status—the numerator is the number of people with unsuppressed viral loads, and the denominator is the entire population tested. Subnational areas with higher population viremia could be at risk of higher incidence.

THIS 2022-2023 also reports on the proportion of people living with HIV with viral load of less than 200 copies/mL. Although the current definition for VLS serves as a benchmark for monitoring global targets over time, using a lower viral load threshold for clinical monitoring has other potential benefits. Studies have shown that low level viremia (detectable ongoing viral replication at levels below 1,000 copies/mL) is associated with risk of subsequent treatment failure and drug resistance.[6,7] WHO guidelines recommend enhanced adherence support for those with low level viremia, as well as repeat viral load monitoring at three months.[4]

Finally, THIS 2022-2023 also evaluated access to viral load tests and receipt of results among people living with HIV in Tanzania. In addition to the clinical benefits that viral load monitoring offers, knowing one's own viral load could also help protect a sexual partner from HIV. Several recent studies of couples in which one partner had HIV and the other did not, found that there was no HIV transmission despite sexual activity when viral load was sustained below 200 copies/mL.[8] In addition, a recent WHO review of the HIV transmission on ART studies found low level viremia was not associated with sexual transmission.[4] These studies serve as the basis of the U=U (Undetectable = Untransmittable) strategy, which encourages people living with HIV on ART to maintain an undetectable viral load* for their own health and to eliminate the risk of HIV transmission to their sexual partners.[4]

8.2 RESULTS

The following tables and figures present VLS data of people living with HIV in Tanzania, population viremia by region, and other viral load data at the time of the THIS 2022-2023 survey.

*When the U=U strategy was conceived, less than 200 copies/mL was commonly referred to as an undetectable viral load. Now, WHO defines the threshold for undetectable viral load as below 50 copies/mL; but for the purposes of U=U, maintaining a viral load below 200 copies/mL, or even below 1,000 copies/mL, is sufficient to prevent HIV transmission. Having an undetectable viral load remains the goal for clinical care.

Table 8.1 Viral load suppression (HIV RNA < 1,000 copies/milliliter) by demographic characteristics

Among adults living with HIV aged 15 years and older, percentage with viral load suppression (VLS), by sex, self-reported HIV diagnosis, and antiretroviral therapy (ART) use (adjusted by antiretroviral [ARV] biomarker testing), and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage with VLS[1]	Number	Percentage with VLS[1]	Number	Percentage with VLS[1]	Number
HIV diagnosis and treatment status[2]						
Unaware of HIV status	5.6	94	10.3	171	8.3	265
Aware of HIV status and not on ART	*	*	*	*	(12.3)	29
Aware of HIV status and on ART	92.9	445	94.9	1,110	94.3	1,555
Residence						
Urban	72.4	171	80.0	509	77.7	680
Rural	72.1	379	81.6	790	78.2	1,169
Mainland/Zanzibar						
Mainland	72.3	547	80.9	1,293	78.1	1,840
Zanzibar	*	*	*	*	*	*
Mainland, by region						
Dodoma	*	*	71.1	52	73.4	64
Arusha	*	*	*	*	*	*
Kilimanjaro	*	*	*	*	(79.8)	32
Tanga	*	*	*	*	(93.5)	27
Morogoro	(63.7)	27	(68.8)	43	66.8	70
Pwani	*	*	(79.5)	35	(71.8)	44
Dar es Salaam	*	*	81.3	67	79.6	84
Lindi	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*
Ruvuma	*	*	(71.1)	37	74.5	56
Iringa	75.2	61	88.0	154	83.9	215
Mbeya	79.4	61	85.5	119	83.2	180
Singida	*	*	(75.4)	27	(71.9)	40
Tabora	*	*	(69.1)	40	65.8	63
Rukwa	*	*	*	*	(82.5)	29
Kigoma	*	*	*	*	*	*
Shinyanga	*	*	(77.8)	46	75.7	62
Kagera	83.4	54	86.5	87	85.2	141
Mwanza	(74.3)	38	78.2	91	76.8	129
Mara	*	*	(83.5)	43	76.8	55
Manyara	*	*	*	*	*	*
Njombe	86.9	66	86.6	185	86.7	251
Katavi	*	*	(83.8)	28	(85.6)	44
Simiyu	*	*	(86.8)	35	82.0	52
Geita	(57.1)	27	(82.7)	41	72.2	68
Songwe	*	*	(90.8)	33	(87.2)	49
Zanzibar, by island						
Unguja	*	*	*	*	*	*
Pemba	*	*	*	*	*	*

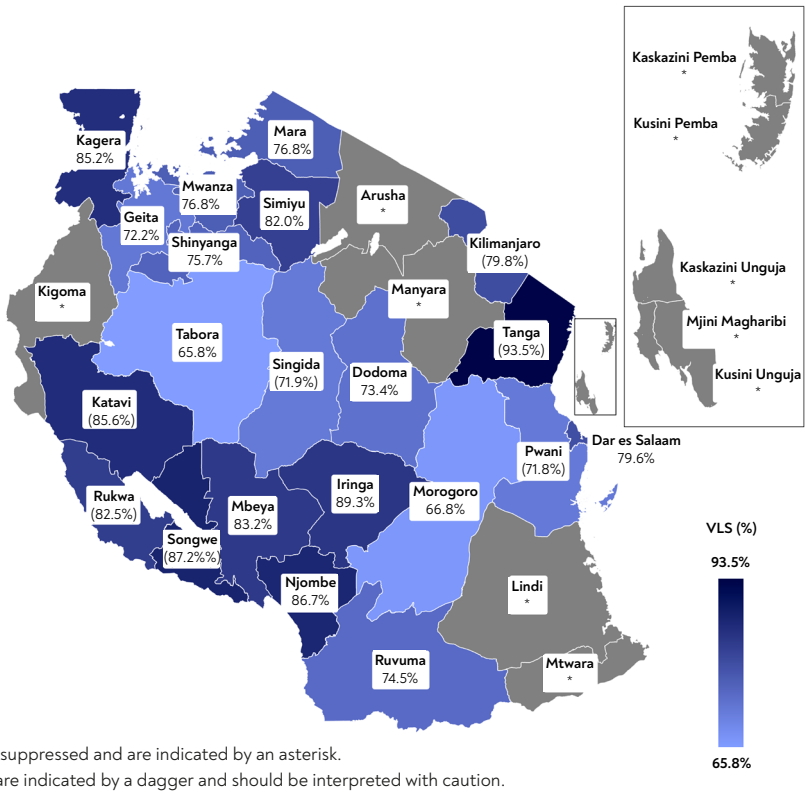
Table 8.1 Viral load suppression (HIV RNA < 1,000 copies/milliliter) by demographic characteristics (continued)

Among adults living with HIV aged 15 years and older, percentage with viral load suppression (VLS), by sex, self-reported HIV diagnosis, and antiretroviral therapy (ART) use (adjusted by antiretroviral [ARV] biomarker testing), and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage with VLS[1]	Number	Percentage with VLS[1]	Number	Percentage with VLS[1]	Number
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*
Marital status						
Never married	(64.2)	49	69.2	142	67.5	191
Married or living together	72.0	395	78.9	568	75.9	963
Divorced or separated	80.3	81	86.1	290	84.7	371
Widowed	*	*	85.8	298	84.6	322
Education						
No education	71.8	70	76.4	242	75.2	312
Primary	73.8	398	82.4	892	79.5	1,290
Secondary	66.0	70	78.8	155	74.6	225
More than secondary	*	*	*	*	*	*
Wealth quintile						
Lowest	71.8	118	74.3	224	73.4	342
Second	72.8	145	83.1	302	79.4	447
Middle	80.8	131	85.1	320	83.8	451
Fourth	70.3	105	83.1	274	78.7	379
Highest	62.6	51	77.6	179	73.6	230
Total 15-24 years	(71.5)	*	54.5	90	59.5	115
Total 15-49 years	66.0	320	78.9	935	75.0	1,255
Total 50+ years	83.1	230	86.2	364	85.0	594
Total 15+ years	72.2	550	80.9	1,299	78.0	1,849

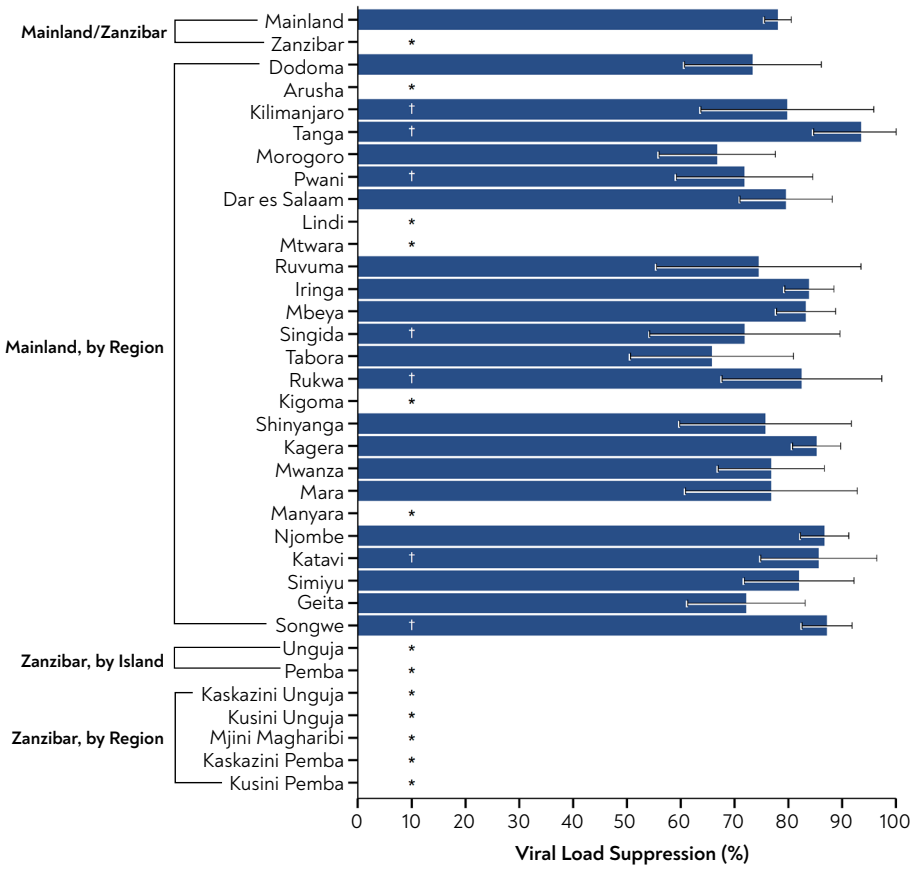
[1] Relates to Global AIDS Monitoring 2022 indicator 1.3: People living with HIV who have suppressed viral loads.
[2] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Figure 8.1.1
Viral load suppression among adults living with HIV (ages 15 years and older) by region, THIS 2022-2023



Abbreviation: VLS, viral load suppression.
Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk.
Estimates based on a denominator between 25 and 49 are indicated by a dagger and should be interpreted with caution.

Figure 8.1.2
Viral load suppression among adults living with HIV (ages 15 years and older) by region, THIS 2022-2023



Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk.
Estimates based on a denominator between 25 and 49 are indicated by a dagger and should be interpreted with caution.

Table 8.2 Viral load suppression (HIV RNA < 1,000 copies per milliliter) by age and sex

Among adults living with HIV aged 15 years and older, percentage with viral load suppression (VLS), by sex and age, THIS 2022-2023

Age (years)	Men		Women		Total	
	Percentage with VLS[1]	Number	Percentage with VLS[1]	Number	Percentage with VLS[1]	Number
15-19	*	*	*	*	(60.6)	35
20-24	*	*	51.8	67	59	80
25-29	(55)	29	66.7	100	62.9	129
30-34	(59)	44	81.8	166	76.7	210
35-39	64.3	59	84.2	193	78.4	252
40-44	61.8	87	83.8	185	76.5	272
45-49	78.8	76	85.4	201	83.2	277
50-54	80.5	87	88	149	84.9	236
55-59	83.4	53	82.8	80	83.1	133
60-64	(78)	41	85.5	69	82.3	110
65+	(92.8)	49	87.3	66	89.5	115
15-24	(71.5)	25	54.5	90	59.5	115
25-34	57	73	76.2	266	71	339
35-44	62.9	146	84	378	77.4	524
45-54	79.7	163	86.5	350	84	513
55-64	80.8	94	84	149	82.7	243
Total 15-49 years	66	320	78.9	935	75	1,255
Total 50+ years	83.1	230	86.2	364	85	594
Total 15+ years	72.2	550	80.9	1,299	78	1,849

[1] Relates to Global AIDS Monitoring 2022 indicator 1.3: People living with HIV who have suppressed viral loads.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

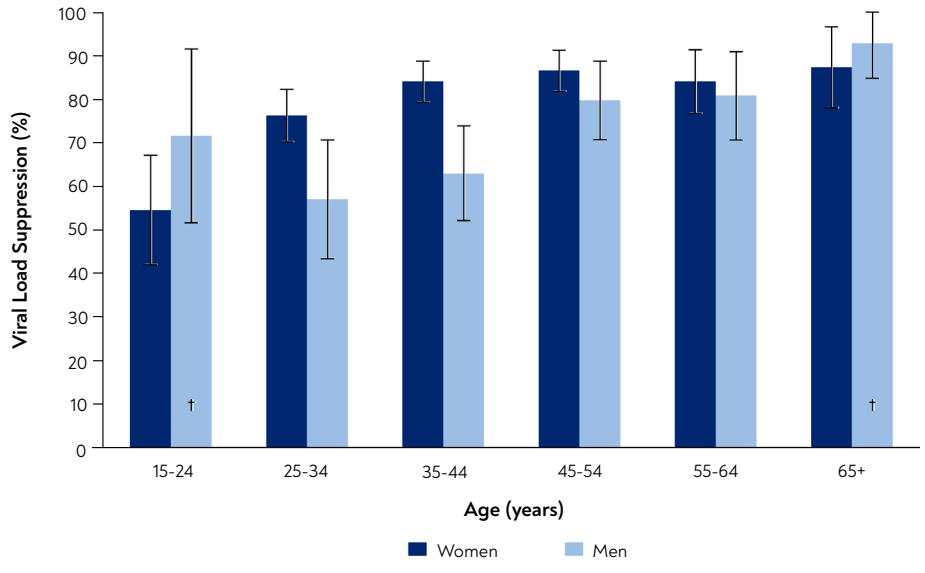


Figure 8.2
Viral load suppression among adults living with HIV by age and sex, THIS 2022-2023

Estimates based on a denominator between 25 and 49 are indicated by a dagger and should be interpreted with caution.

Table 8.3 Population viremia among the adult population in Tanzania, by region

Population viremia[1] (unsuppressed viral load [VL], defined as HIV RNA >= 1,000 copies/milliliter [mL]) among adults aged 15 years and older, by region and selected demographic characteristics, THIS 2022-2023

	Percentage with VL ≥ 1000 copies/mL[1]	Number of adults tested for HIV	Mean log_{10} VL	Number of HIV-positive individuals with VL results
Residence				
Urban	1.1	11,077	2.0	680
Rural	0.9	22,586	2.1	1,169
Mainland/Zanzibar				
Mainland	1.0	31,685	2.0	1,840
Zanzibar	0.1	1,978	*	*
Mainland, by region				
Dodoma	0.8	1,898	2.2	64
Arusha	0.4	524	*	*
Kilimanjaro	0.8	642	(2.0)	32
Tanga	0.2	920	(1.6)	27
Morogoro	1.1	2,021	2.5	70
Pwani	1.3	817	(2.1)	44
Dar es Salaam	0.9	1,701	1.9	84
Lindi	0.5	587	*	*
Mtwara	0.8	654	*	*
Ruvuma	1.3	1,034	2.3	56
Iringa	1.8	1,850	1.9	215
Mbeya	1.6	1,705	1.9	180
Singida	0.9	1,145	(2.3)	40
Tabora	1.9	1,018	2.4	63
Rukwa	0.5	810	(1.9)	29
Kigoma	0.3	1,094	*	*
Shinyanga	1.4	974	2.0	62
Kagera	0.8	2,218	1.9	141
Mwanza	1.1	2,485	2.1	129
Mara	1.2	982	2.0	55
Manyara	0.8	529	*	*
Njombe	1.7	1,822	1.7	251
Katavi	0.5	1,050	(1.8)	44
Simiyu	0.7	1,246	1.9	52
Geita	1.4	1,197	2.3	68
Songwe	0.8	762	(1.8)	49
Zanzibar, by island				
Unguja	0.2	989	*	*
Pemba	0.0	989	*	*
Zanzibar, by region				
Kaskazini Unguja	0.0	128	*	*
Kusini Unguja	0.0	111	*	*
Mjini Magharibi	0.3	750	*	*
Kaskazini Pemba	0.0	450	*	*
Kusini Pemba	0.0	539	*	*

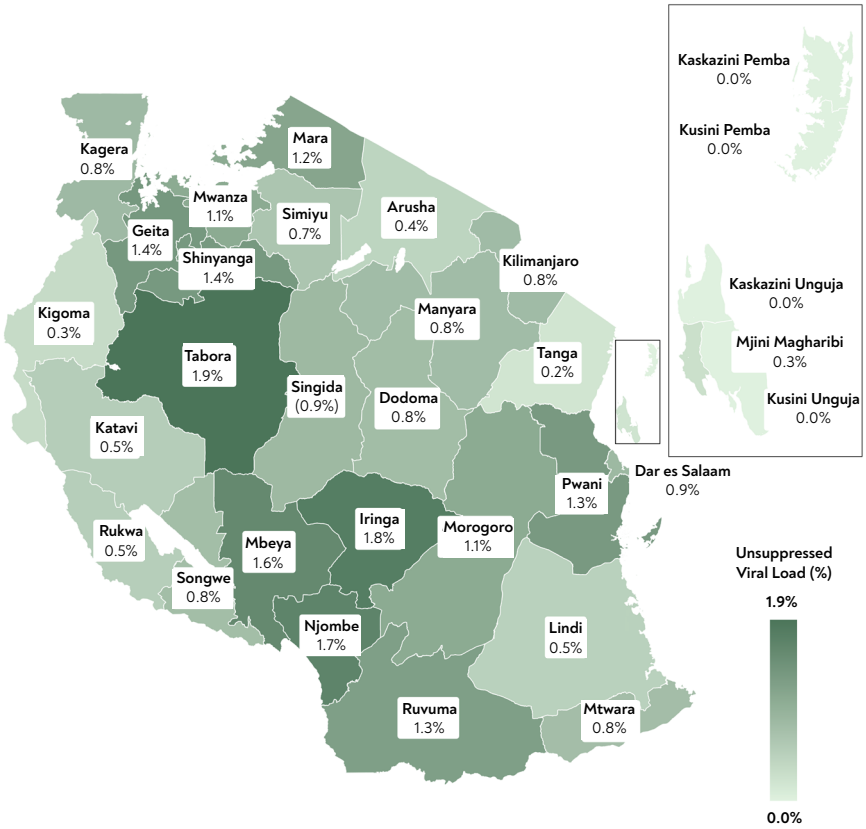
Table 8.3 Population viremia among the adult population in Tanzania, by region (continued)

Population viremia[1] (unsuppressed viral load [VL], defined as HIV RNA >= 1,000 copies/milliliter [mL]) among adults aged 15 years and older, by region and selected demographic characteristics, THIS 2022-2023

	Percentage with VL ≥ 1000 copies/mL[1]	Number of adults tested for HIV	Mean log_{10} VL	Number of HIV-positive individuals with VL results
Marital status				
Never married	0.6	8,336	2.4	191
Married or living together	1.0	19,831	2.1	963
Divorced or separated	1.5	3,068	1.9	371
Widowed	1.9	2,367	1.8	322
Education				
No education	1.3	5,213	2.1	312
Primary	1.1	19,725	2.0	1,290
Secondary	0.6	7,763	2.1	225
More than secondary	0.6	933	*	*
Wealth quintile				
Lowest	1.1	7,483	2.3	342
Second	1.0	7,730	2.0	447
Middle	0.7	7,576	1.9	451
Fourth	1.1	5,823	2.0	379
Highest	1.0	5,038	2.1	230
Age (years)				
15-19	0.2	5,105	(2.6)	35
20-24	0.6	4,799	2.7	80
25-29	0.9	4,175	2.5	129
30-34	1.0	3,609	2.1	210
35-39	1.4	3,095	2.0	252
40-44	2.0	2,758	2.0	272
45-49	1.7	2,356	1.9	277
50-54	1.5	2,114	1.8	236
55-59	1.4	1,399	2.0	133
60-64	1.3	1,480	1.9	110
65+	0.4	2,773	1.6	115
15-24	0.4	9,904	2.7	115
25-34	1.0	7,784	2.3	339
35-44	1.7	5,853	2.0	524
45-54	1.6	4,470	1.9	513
55-64	1.3	2,879	2.0	243
Total 15-24 years	0.4	9,904	2.7	115
Total 15-49 years	0.9	25,897	2.1	1,255
Total 50+ years	1.1	7,766	1.8	594
Total 15+ years	1.0	33,663	2.0	1,849

[1] Population viremia is defined with a numerator of those with unsuppressed VL (>=1,000 copies/mL) and denominator of all adults tested (regardless of HIV status).
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

Figure 8.3
Population viremia (proportion of unsuppressed viral load in the adult population aged 15 years and older) by region, THIS 2022-2023



Note: Population viremia is defined as unsuppressed viral load (HIV RNA ≥ 1,000 copies per milliliter) among all adults tested in THIS 2022-2023 (regardless of HIV status). The numerator is the number of adults with unsuppressed viral loads, and the denominator is the entire population tested. Regions with higher population viremia could be at risk of higher incidence.

Table 8.4 Viral load < 200 HIV RNA copies per milliliter by demographic and treatment characteristics

Among adults living with HIV aged 15 years and older, percentage with viral load (VL) < 200 copies per milliliter, by sex, self-reported diagnosis and antiretroviral therapy (ART) use (adjusted by antiretroviral [ARV] biomarker testing), and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage with VL < 200 copies/ mL	Number	Percentage with VL < 200 copies/ mL	Number	Percentage with VL < 200 copies/ mL	Number
HIV diagnosis and treatment status[1]						
Unaware of HIV status	4.7	94	5.0	171	4.9	265
Aware of HIV status and not on ART	*	*	*	*	(9.2)	29
Aware of HIV status and on ART	88.5	443	91.7	1,110	90.7	1,553
Number of years since initiating ART						
Less than 12 months	(84.6)	39	85.3	91	85.1	130
12 months or more	89.8	372	92.3	929	91.5	1,301
1 to less than 5 years	88.5	131	91.4	340	90.5	471
5 to less than 10 years	88.6	115	92.3	308	91.2	423
More than 10 years	92.8	121	94.2	261	93.7	382
Residence						
Urban	70.3	170	77.1	509	75.1	679
Rural	67.3	378	77.6	790	73.9	1,168

Table 8.4 Viral load < 200 HIV RNA copies per milliliter by demographic and treatment characteristics (continued)

Among adults living with HIV aged 15 years and older, percentage with viral load (VL) < 200 copies per milliliter, by sex, self-reported diagnosis and antiretroviral therapy (ART) use (adjusted by antiretroviral [ARV] biomarker testing), and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage with VL < 200 copies/mL	Number	Percentage with VL < 200 copies/mL	Number	Percentage with VL < 200 copies/mL	Number
Mainland/Zanzibar						
Mainland	68.7	545	77.4	1,293	74.5	1,838
Zanzibar	*	*	*	*	*	*
Mainland, by region						
Dodoma	*	*	67.4	52	68.3	64
Arusha	*	*	*	*	*	*
Kilimanjaro	*	*	*	*	(74.0)	32
Tanga	*	*	*	*	(93.5)	27
Morogoro	(63.0)	26	(60.2)	43	61.3	69
Pwani	*	*	(77.1)	35	(70.2)	44
Dar es Salaam	*	*	78.9	67	77.8	84
Lindi	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*
Ruvuma	*	*	(68.5)	37	68.9	56
Iringa	65.9	61	83.4	154	77.7	215
Mbeya	76.0	60	80.6	119	78.9	179
Singida	*	*	(71.7)	27	(69.6)	40
Tabora	*	*	(69.1)	40	64.0	63
Rukwa	*	*	*	*	(82.5)	29
Kigoma	*	*	*	*	*	*
Shinyanga	*	*	(74.1)	46	73.1	62
Kagera	74.6	54	76.5	87	75.7	141
Mwanza	(72.3)	38	75.8	91	74.6	129
Mara	*	*	(81.3)	43	75.2	55
Manyara	*	*	*	*	*	*
Njombe	83.1	66	82.9	185	83.0	251
Katavi	*	*	(79.6)	28	(80.2)	44
Simiyu	*	*	(81.6)	35	78.7	52
Geita	(54.2)	27	(80.8)	41	69.9	68
Songwe	*	*	(84.6)	33	(81.3)	49
Zanzibar, by island						
Unguja	*	*	*	*	*	*
Pemba	*	*	*	*	*	*
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*

Table 8.4 Viral load < 200 HIV RNA copies per milliliter by demographic and treatment characteristics (continued)

Among adults living with HIV aged 15 years and older, percentage with viral load (VL) < 200 copies per milliliter, by sex, self-reported diagnosis and antiretroviral therapy (ART) use (adjusted by antiretroviral [ARV] biomarker testing), and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage with VL < 200 copies/mL	Number	Percentage with VL < 200 copies/mL	Number	Percentage with VL < 200 copies/mL	Number
Marital status						
Never married	(61.7)	49	64.6	142	63.6	191
Married or living together	68.3	394	75.7	568	72.4	962
Divorced or separated	75.3	80	80.8	290	79.4	370
Widowed	*	*	84.1	298	82.9	322
Education						
No education	67.5	70	72.9	242	71.6	312
Primary	69.8	396	78.7	892	75.6	1,288
Secondary	63.5	70	76.8	155	72.4	225
More than secondary	*	*	*	7	*	*
Wealth quintile						
Lowest	65.0	117	69.9	224	68.1	341
Second	68.6	144	78.7	302	75.1	446
Middle	74.4	131	82.5	320	80.0	451
Fourth	70.0	105	80.4	274	76.8	379
Highest	62.6	51	74.0	179	70.9	230
Age (years)						
15-19	*	*	*	23	(58.1)	35
20-24	*	*	48.3	67	56.5	80
25-29	(55.0)	29	63.9	100	61.0	129
30-34	(53.3)	44	78.6	166	72.9	210
35-39	60.9	59	77.4	193	72.6	252
40-44	57.7	86	79.3	185	72.1	271
45-49	75.4	76	83.9	201	81.1	277
50-54	74.3	87	85.9	149	81.1	236
55-59	79.4	52	80.4	80	80.1	132
60-64	(71.7)	41	80.1	69	76.6	110
65+	(91.7)	49	85.7	66	88.1	115
Total 15-24 years	(71.5)	25	51.0	90	57.0	115
Total 15-49 years	62.9	319	75.0	935	71.4	1,254
Total 50+ years	78.4	229	83.6	364	81.5	593
Total 15+ years	68.5	548	77.4	1,299	74.4	1,847

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 8.5 Self-reported viral load testing

Percentage of adults living with HIV aged 15 years and older who reported they had ever had a viral load (VL) test, and among those who had a VL test, percentage who reported that they received VL results from their last test, by selected demographic characteristics, THIS 2022-2023

Characteristic	Among all HIV-positive adults receiving HIV care		Among adults who had ever had a VL test	
	Percentage who had ever had a VL test	Number	Percentage who received VL results from their last test	Number
Sex				
Male	83.7	403	50.4	333
Female	83.2	1,003	53.4	830
Residence				
Urban	88.8	490	57.3	432
Rural	79.5	916	48.7	731
Mainland/Zanzibar				
Mainland	83.4	1,400	52.5	1,158
Zanzibar	*	*	*	*
Mainland, by region				
Dodoma	(77.8)	40	(59.5)	31
Arusha	*	*	*	*
Kilimanjaro	(84.2)	26	*	*
Tanga	*	*	*	*
Morogoro	(81.0)	47	(48.7)	39
Pwani	(85.7)	29	*	*
Dar es Salaam	86.2	58	75.1	50
Lindi	*	*	*	*
Mtwara	*	*	*	*
Ruvuma	(82.5)	44	(44.2)	37
Iringa	79.0	174	52.3	137
Mbeya	79.0	136	49.2	108
Singida	(75.8)	27	*	*
Tabora	(80.9)	39	(58.2)	31
Rukwa	*	*	*	*
Kigoma	*	*	*	*
Shinyanga	(80.2)	45	(64.0)	37
Kagera	86.2	116	50.3	100
Mwanza	85.3	91	54.4	77
Mara	(85.1)	39	(47.5)	34
Manyara	*	*	*	*
Njombe	85.3	216	53.2	184
Katavi	(82.2)	36	(40.2)	30
Simiyu	(77.5)	45	(59.8)	35
Geita	(88.2)	46	(55.0)	41
Songwe	(85.4)	43	(48.2)	37
Zanzibar, by island				
Unguja	*	*	*	*
Pemba	*	*	*	*
Zanzibar, by region				
Kaskazini Unguja	*	*	*	*

Table 8.5 Self-reported viral load testing (continued)

Percentage of adults living with HIV aged 15 years and older who reported they had ever had a viral load (VL) test, and among those who had a VL test, percentage who reported that they received VL results from their last test, by selected demographic characteristics, THIS 2022-2023

Characteristic	Among all HIV-positive adults receiving HIV care		Among adults who had ever had a VL test	
	Percentage who had ever had a VL test	Number	Percentage who received VL results from their last test	Number
Kusini Unguja	*	*	*	*
Mjini Magharibi	*	*	*	*
Kaskazini Pemba	*	*	*	*
Kusini Pemba	*	*	*	*
Marital status				
Never married	77.2	122	49.7	96
Married or living together	83.0	724	51.4	593
Divorced or separated	83.9	295	53.7	245
Widowed	87.4	263	55.3	227
Education				
No education	79.5	236	45.2	183
Primary	84.2	1,011	52.8	845
Secondary	82.0	146	57.1	122
More than secondary	*	*	*	*
Wealth quintile				
Lowest	78.2	247	52.7	188
Second	79.1	354	44.7	286
Middle	83.4	367	50.7	305
Fourth	88.4	285	54.8	245
Highest	89.3	153	61.6	139
Age (years)				
15-19	*	*	*	*
20-24	(79.7)	37	(42.8)	25
25-29	70.9	82	46.4	58
30-34	83.6	155	44.2	124
35-39	74.9	192	51.5	146
40-44	77.2	211	50.1	164
45-49	87.8	226	50.5	195
50-54	90.3	196	56.6	178
55-59	92.6	107	62.3	97
60-64	89.9	87	57.3	76
65+	94.5	90	60.5	83
Total 15-24 years	75.4	60	(48.2)	42
Total 15-49 years	79.5	926	49.0	729
Total 50+ years	91.6	480	58.7	434
Total 15+ years	83.4	1,406	52.5	1,163

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

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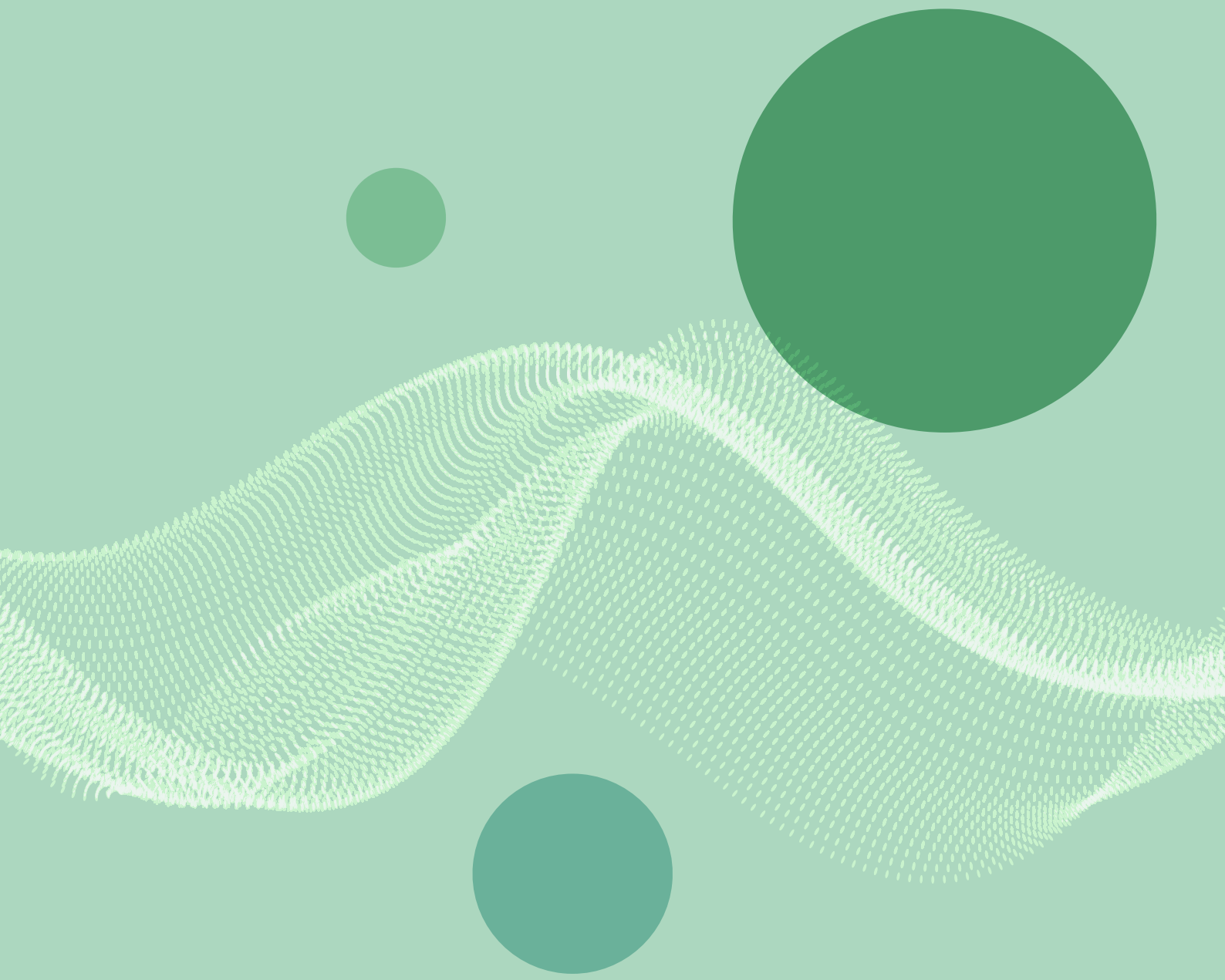


9. UNAIDS 95-95-95 TARGETS

9.1 BACKGROUND

To end AIDS as a public health threat, UNAIDS has set targets that by 2025, 95% of all people living with HIV should know their HIV status; 95% of all persons diagnosed with HIV should receive sustained ART; and 95% of all persons receiving ART should have VLS, defined by UNAIDS as HIV RNA < 1,000 copies/mL.[1, 2]

While Chapter 7 provides results on coverage of HIV testing and treatment services, and Chapter 8 reports VLS among all adults living with HIV, irrespective of knowledge of status or ART use, this chapter presents the status of the achievement of the 95-95-95 targets which reflects each stage of program performance. Awareness of HIV-positive status among people living with HIV and current ART use among those who are aware of their HIV-positive status are indicators of access to services. VLS among those who know their HIV-positive status and are on treatment not only provides an indication of access to and retention in care, but also provides a measure of program success. The overall 95-95-95 target of VLS among all adults living with HIV of 85.7% (the product of 95% of people living with HIV diagnosed, 95% of those diagnosed on treatment, and 95% of those on treatment achieving VLS) or greater is an indication of successful testing and treatment services.[1]

THIS 2022-2023 measured the 95-95-95 indicators using self-reported data adjusted with one of two types of biomarker data: either ARV biomarker data or having a viral load result below 200 copies/mL. For instance, in the ARV-adjusted estimates at the national and subnational levels, individuals were defined as 'aware' of their HIV-positive status if they reported knowing they were HIV-positive before testing as part of THIS 2022-2023 or if they had an ARV detectable in their blood. Individuals were categorized as 'on treatment' if they reported ART use or if they had an ARV detectable in their blood. This chapter also presents 95-95-95 estimates at the national level using self-reported data adjusted for having a viral load below 200 copies/mL. Recent research suggests that a viral load measurement below 200 HIV RNA copies/mL may be a useful alternative to ARV-detection for determining awareness and treatment status since it has been believed that individuals are unlikely to have a viral load below 200 copies/mL if they are not on ART.[3]

The tables in this chapter present the 95-95-95 results in two ways, as conditional, and overall percentages. In both the conditional and the overall cascade, the denominator for the first 95, awareness of HIV-positive status, is all the adults living with HIV in the country. However, in the conditional 95-95-95 cascade (shown in Tables 9.1.B and 9.2.B), the denominator for the second and third 95 indicator is the value of the target preceding it. In other words, the second 95 is the percentage of people on ART among those aware of their HIV-positive status (diagnosed), and the third 95 is the percentage of people with VLS among those on treatment.

In the 95-95-95 overall percentages tables (9.1.A and 9.2.A), the denominator is the same for each 95 indicator: the overall population of adults living with HIV in the country. Thus, while the first 95 is the same as in the conditional table, the second 95 estimate is the percentage of people receiving ART among the overall population of adults living with HIV in the country, while the third 95 is the percentage of people achieving VLS on ART among all the adults living with HIV in Tanzania.

Note that in each 95-95-95 table, individuals with VLS who were not aware of their HIV-positive status or were not on ART, were excluded from the numerator for the third 95 (VLS among those on ART). For this reason, the VLS estimates in the overall 95-95-95 are sometimes slightly lower than VLS estimates reported in the previous chapter, which may include VLS data from individuals with low viral loads who were not receiving ART, such as individuals who have transiently low viral loads after seroconversion and elite controllers—a small subset of people living with HIV whose immune systems are able to maintain VLS for a period without treatment. Thus, the overall 95-95-95 VLS estimates represent the percentage of the adult population living with HIV known to have been reached by the national HIV program and who are benefiting at each step of the cascade.

9.2 RESULTS

The following tables and figures describe progress towards the 95-95-95 targets overall and by demographic characteristics.

Table 9.1.A Adult 95-95-95 (self-reported and antiretroviral biomarker data); overall percentages

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and antiretroviral (ART) use, both adjusted for a having a detectable antiretroviral (ARV) in blood, by sex and age, THIS 2022-2023

	Diagnosed					
	Men		Women		Total	
Age (years)	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number
15-24	(87.3)	25	59.5	90	67.7	115
25-34	68.0	73	85.6	266	80.9	339
35-49	73.1	223	87.0	579	82.5	802
15-49	73.3	321	83.6	935	80.5	1,256
50+	87.2	230	87.9	364	87.7	594
15+	78.4	551	84.8	1,299	82.7	1,850
	On Treatment					
	Men		Women		Total	
Age (years)	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number
15-24	(87.3)	25	59.2	90	67.4	115
25-34	62.6	73	83.2	266	77.7	339
35-49	69.2	223	85.1	579	80.0	802
15-49	69.5	321	81.8	935	78.0	1,256
50+	86.8	230	87.9	364	87.5	594
15+	75.8	551	83.4	1,299	80.9	1,850
	Viral Load Suppression (VLS) on Treatment					
	Men		Women		Total	
Age (years)	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number
15-24	(71.5)	25	51.3	90	57.2	115
25-34	57.0	73	75.3	266	70.4	339
35-49	64.9	223	81.9	579	76.4	802
15-49	63.7	321	76.7	935	72.8	1,256
50+	82.3	230	85.8	364	84.4	594
15+	70.4	551	79.2	1,299	76.3	1,850

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood.
[2] Relates to Global AIDS Monitoring Indicator 2021 (GAM 2022) 1.1: People living with HIV who know their HIV status, and PEPFAR DIAGNOSED_NAT: Percentage of adults and children living with HIV who know their status (have been diagnosed).
[3] Relates to GAM 2022 1.2: People living with HIV on antiretroviral therapy, and PEPFAR TX_CURR_NAT / SUBNAT: Number of adults and children currently receiving antiretroviral therapy (ART).
[4] Relates to GAM 2022 1.3: People living with HIV who have suppressed viral loads, and PEPFAR VL_SUPPRESSION_NAT: Percentage of people living with HIV on ART with a suppressed viral load.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

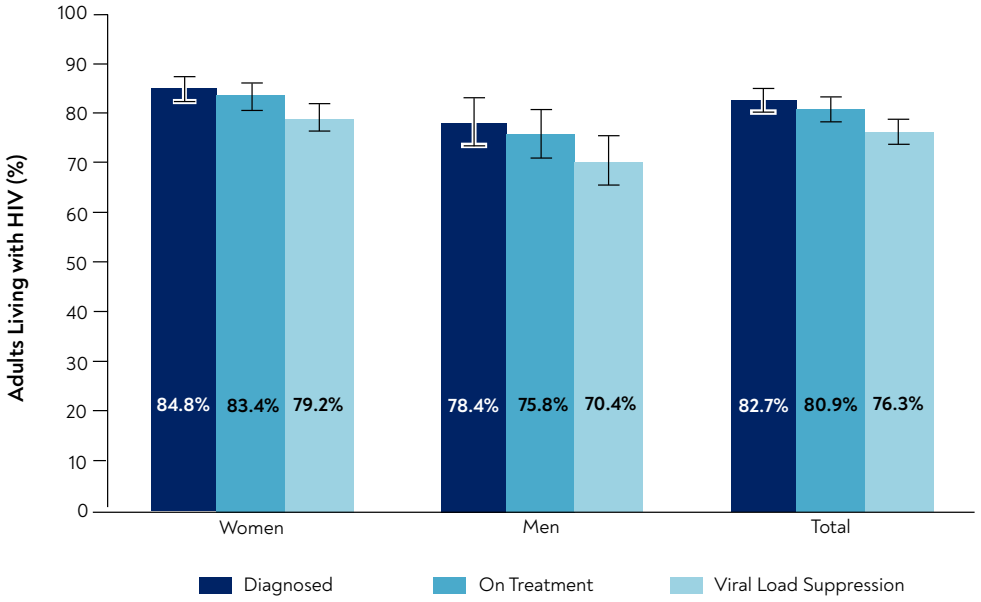
Table 9.1.B Adult 95-95-95 (self-reported and antiretroviral biomarker data); conditional percentages

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and antiretroviral (ART) use, both adjusted for a having a detectable antiretroviral (ARV) in blood, by sex and age, THIS 2022-2023

	Diagnosed					
	Men		Women		Total	
Age (years)	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number
15-24	(87.3)	25	59.5	90	67.7	115
25-34	68.0	73	85.6	266	80.9	339
35-49	73.1	223	87.0	579	82.5	802
15-49	73.3	321	83.6	935	80.5	1,256
50+	87.2	230	87.9	364	87.7	594
15+	78.4	551	84.8	1,299	82.7	1,850
	On Treatment Among Those Diagnosed					
	Men		Women		Total	
Age (years)	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number
15-24	*	*	99.5	58	99.7	78
25-34	92.2	50	97.2	228	96.0	278
35-49	94.7	182	97.8	514	96.9	696
15-49	94.8	252	97.8	800	96.9	1,052
50+	99.5	204	100.0	328	99.8	532
15+	96.7	456	98.4	1,128	97.9	1,584
	Viral Load Suppression (VLS) Among Those on Treatment					
	Men		Women		Total	
Age (years)	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number
15-24	*	*	86.6	57	84.8	77
25-34	(91.0)	47	90.5	221	90.6	268
35-49	93.7	175	96.3	504	95.6	679
15-49	91.6	242	93.8	782	93.2	1,024
50+	94.9	203	97.5	328	96.5	531
15+	92.9	445	94.9	1,110	94.3	1,555

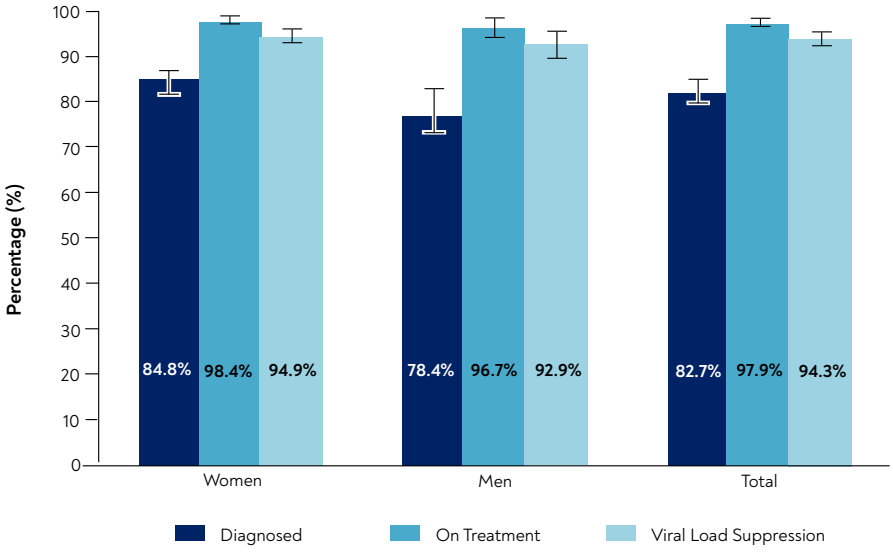
[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood;
[2] Relates to Global AIDS Monitoring Indicator 2022 (GAM 2022) 1.1: People living with HIV who know their HIV status, and PEPFAR DIAGNOSED_NAT: Percentage of adults and children living with HIV who know their status (have been diagnosed);
[3] Relates to GAM 2022 1.2: People living with HIV on antiretroviral therapy, and PEPFAR TX_CURR_NAT / SUBNAT: Number of adults and children currently receiving antiretroviral therapy (ART);
[4] Relates to GAM 2022 1.3: People living with HIV who have suppressed viral loads, and PEPFAR VL_SUPPRESSION_NAT: Percentage of people living with HIV on ART with a suppressed viral load.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

Figure 9.1.A
The unconditional ARV-adjusted 95-95-95 achievements among all adults living with HIV (ages 15 years and older), by sex, THIS 2022-2023



For the overall 95-95-95 targets, the denominator for each 95 is the overall population of adults living with HIV in Tanzania.
Note: In the unconditional antiretroviral (ARV)-adjusted 95-95-95, adults living with HIV are classified as "aware" or "diagnosed" if they reported knowing their HIV-positive status before testing positive in THIS 2022-2023 or had an ARV detectable in their blood. Adults living with HIV are classified as "on treatment" if they reported that they were on treatment or if they had an ARV detectable in their blood. The percentage with viral load suppression on treatment is shown among the overall population of adults living with HIV.

Figure 9.1.B
The conditional ARV-adjusted 95-95-95 achievements among adults living with HIV (ages 15 years and older), by sex, THIS 2022-2023



For the conditional 95-95-95 targets, the denominator for the second and third 95 is the value of the preceding 95.
Note: In the conditional antiretroviral (ARV)-adjusted 95-95-95, adults living with HIV are classified as "aware" or "diagnosed" if they reported knowing their HIV-positive status before testing positive in THIS 2022-2023 or had an ARV detectable in their blood. Adults living with HIV and aware of their HIV status are classified as "on treatment" if they reported that they were on treatment or if they had an ARV detectable in their blood. The percentage with viral load suppression is shown only among adults living with HIV who were aware of their status and on treatment.

Table 9.2.A Adult 95-95-95 (self-reported data adjusted for viral load < 200 HIV RNA copies per milliliter); overall percentages

95-95-95 targets among adults living with HIV aged 15 years and older, based upon their self-reported HIV status and antiretroviral therapy (ART) use, both adjusted for having a viral load (VL) < 200 copies per milliliter (mL), by sex and age, THIS 2022-2023

	Diagnosed					
	Men		Women		Total	
Age (years)	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number
15-24	(82.9)	25	55.8	90	63.7	115
25-34	65.8	73	84.1	266	79.2	339
35-49	72.9	223	87.6	579	82.9	802
15-49	72.2	321	83.2	935	79.9	1,256
50+	87.4	230	87.7	364	87.6	594
15+	77.7	551	84.4	1,299	82.2	1,850
	On Treatment					
	Men		Women		Total	
Age (years)	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number
15-24	(82.9)	25	55.5	90	63.5	115
25-34	60.4	73	81.8	266	76.1	339
35-49	69.7	223	85.5	579	80.4	802
15-49	68.8	321	81.2	935	77.5	1,256
50+	87.0	230	87.7	364	87.4	594
15+	75.4	551	83.0	1,299	80.4	1,850
	Viral Load Suppression (VLS) on Treatment					
	Men		Women		Total	
Age (years)	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number
15-24	(71.5)	25	52.2	90	57.8	115
25-34	56.5	73	76.1	266	70.8	339
35-49	67.3	223	83.2	579	78.1	802
15-49	65.1	321	77.8	935	74.0	1,256
50+	82.8	230	85.8	364	84.6	594
15+	71.5	551	80.0	1,299	77.2	1,850

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a VL < 200 copies/mL.

[2] Relates to Global AIDS Monitoring 2021 Indicator (GAM 2022) 1.1: People living with HIV who know their HIV status and PEPFAR Indicator DIAGNOSED_NAT: The percentage of adults and children living with HIV who know their status (have been diagnosed).

[3] Relates to GAM 2022 1.2: People living with HIV on antiretroviral therapy and PEPFAR TX_CURR_NAT / SUBNAT: Percentage of adults and children receiving antiretroviral therapy.

[4] Relates to GAM 2022 1.3: People living with HIV who have suppressed viral loads and PEPFAR Indicator VL_SUPPRESSION_NAT: Percentage of people living with HIV on ART with a suppressed viral load.

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

Table 9.2.B Adult 95-95-95 (self-reported data adjusted for viral load < 200 HIV RNA copies/milliliter); conditional percentages

95-95-95 targets among adults living with HIV aged 15 years and older, based upon their self-reported HIV status and antiretroviral therapy (ART) use, both adjusted for having a viral load (VL) < 200 copies per milliliter (mL), by sex and age, THIS 2022-2023

	Diagnosed					
	Men		Women		Total	
Age (years)	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number
15-24	(82.9)	25	55.8	90	63.7	115
25-34	65.8	73	84.1	266	79.2	339
35-49	72.9	223	87.6	579	82.9	802
15-49	72.2	321	83.2	935	79.9	1,256
50+	87.4	230	87.7	364	87.6	594
15+	77.7	551	84.4	1,299	82.2	1,850
	On Treatment Among Those Diagnosed					
	Men		Women		Total	
Age (years)	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number
15-24	*	*	99.4	55	99.7	74
25-34	(91.9)	48	97.3	226	96.1	274
35-49	95.7	180	97.6	514	97.0	694
15-49	95.4	247	97.6	795	97.0	1,042
50+	99.5	204	99.9	327	99.8	531
15+	97.1	451	98.3	1,122	97.9	1,573
	Viral Load Suppression (VLS) Among Those on Treatment					
	Men		Women		Total	
Age (years)	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number
15-24	*	*	94.1	54	91.1	73
25-34	(93.4)	45	93.0	220	93.1	265
35-49	96.5	174	97.3	503	97.1	677
15-49	94.6	238	95.9	777	95.5	1,015
50+	95.2	203	97.9	326	96.8	529
15+	94.9	441	96.4	1,103	95.9	1,544

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a VL < 200 copies/mL.

[2] Relates to Global AIDS Monitoring 2020 Indicator (GAM 2022) 1.1: People living with HIV who know their HIV status and PEPFAR Indicator DIAGNOSED_NAT: The percentage of adults and children living with HIV who know their status (have been diagnosed).

[3] Relates to GAM 2022 1.2: People living with HIV on antiretroviral therapy and PEPFAR TX_CURR_NAT / SUBNAT: Percentage of adults and children receiving antiretroviral therapy.

[4] Relates to GAM 2022 1.3: People living with HIV who have suppressed viral loads and PEPFAR Indicator VL_SUPPRESSION_NAT: Percentage of people living with HIV on ART with a suppressed viral load.

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

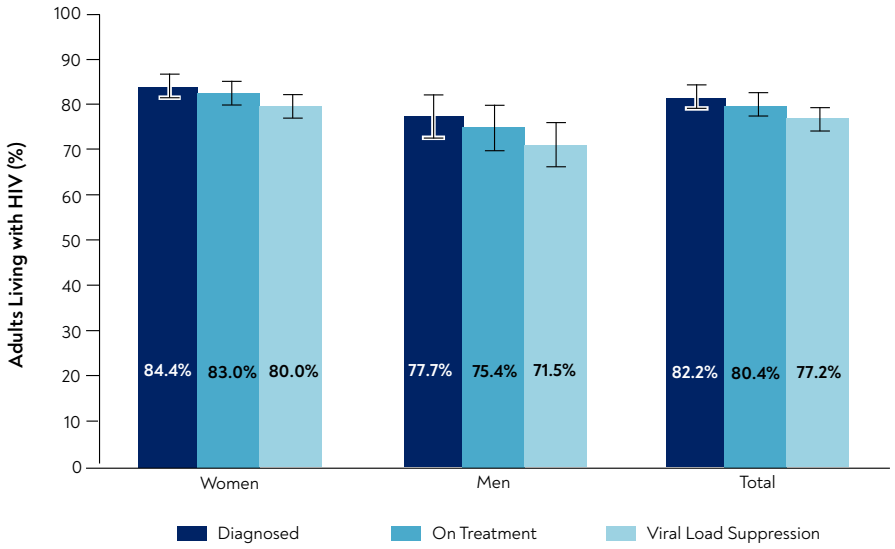


Figure 9.2.A
The unconditional viral load-adjusted 95-95-95 among all adults living with HIV (ages 15 years and older) by sex, THIS 2022-2023

For the overall 95-95-95 targets, the denominator for each 95 is the overall population of adults living with HIV in Tanzania.
Note: In the viral load-adjusted 95-95-95, adults living with HIV are classified as "aware" or "diagnosed" if they reported knowing their HIV-positive status before testing positive in THIS 2022-2023 or had a viral load < 200 copies/mL. Adults living with HIV are classified as "on treatment" if they reported that they were on treatment or if they had a viral load < 200 copies/mL. The percentage with viral load suppression on treatment is shown among the overall population of adults living with HIV.

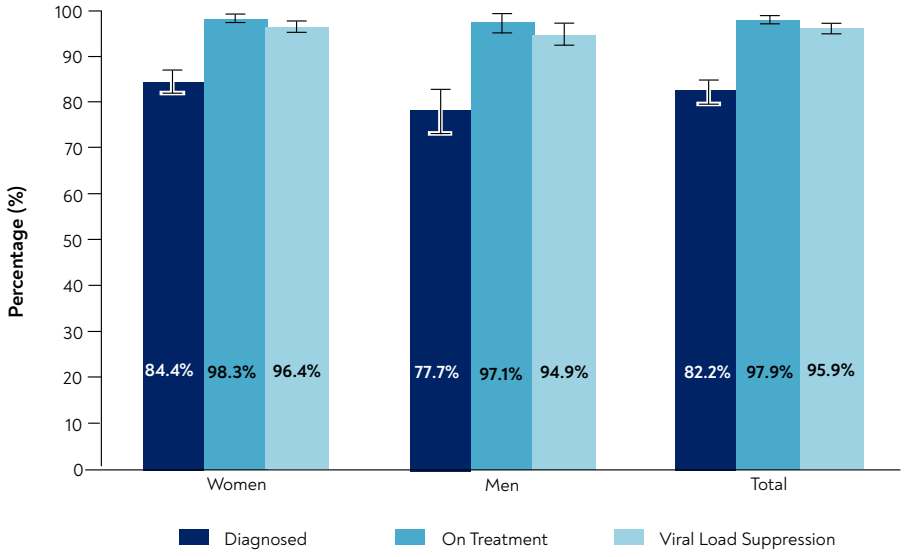


Figure 9.2.B
The conditional viral load-adjusted 95-95-95 among adults living with HIV (ages 15 years and older) by sex, THIS 2022-2023

For the conditional 95-95-95 targets, the denominator for the second and third 95 is the value of the preceding 95.
Note: In the viral load-adjusted 95-95-95, adults living with HIV are classified as "aware" or "diagnosed" if they reported knowing their HIV-positive status before testing positive in THIS 2022-2023 or had a viral load < 200 copies/mL. Adults living with HIV and aware of their HIV status are classified as "on treatment" if they reported that they were on treatment or if they had a viral load < 200 copies/mL. The percentage with viral load suppression is shown only among adults living with HIV who were aware of their status and on treatment.

Table 9.3.A Adult 95-95-95 by geography (self-reported and antiretroviral biomarker data); overall percentages

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and ART use, both adjusted for having a detectable ARV in blood, by sex, residence, and region, THIS 2022-2023

	Diagnosed					
	Men		Women		Total	
Geography	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number
Residence						
Urban	76.6	172	84.7	509	82.2	681
Rural	79.5	379	84.9	790	83.0	1,169
Mainland/Zanzibar						
Mainland	78.5	548	84.8	1,293	82.7	1,841
Zanzibar	*	*	*	*	*	*
Mainland, by region						
Dodoma	*	*	77.2	52	78.8	64
Arusha	*	*	*	*	*	*
Kilimanjaro	*	*	*	*	(86.6)	32
Tanga	*	*	*	*	(93.5)	27
Morogoro	(71.4)	27	(71.1)	43	71.2	70
Pwani	*	*	(85.5)	35	(75.5)	44
Dar es Salaam	*	*	81.4	67	78.6	85
Lindi	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*
Ruvuma	*	*	(74.0)	37	82.3	56
Iringa	80.1	61	88.6	154	85.9	215
Mbeya	78.0	61	90.6	119	85.9	180
Singida	*	*	(71.3)	27	(72.4)	40
Tabora	*	*	(75.6)	40	71.9	63
Rukwa	*	*	*	*	(86.5)	29
Kigoma	*	*	*	*	*	*
Shinyanga	*	*	(80.6)	46	77.7	62
Kagera	84.7	54	89.3	87	87.4	141
Mwanza	(93.8)	38	89.8	91	91.2	129
Mara	*	*	(85.7)	43	85.3	55
Manyara	*	*	*	*	*	*
Njombe	92.0	66	92.9	185	92.6	251
Katavi	*	*	(82.9)	28	(89.8)	44
Simiyu	*	*	(91.7)	35	92.2	52
Geita	(64.9)	27	(91.0)	41	80.3	68
Songwe	*	*	(90.8)	33	(91.8)	49
Zanzibar, by island						
Unguja	*	*	*	*	*	*
Pemba	*	*	*	*	*	*
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	*	*

Table 9.3.A Adult 95-95-95 by geography (self-reported and antiretroviral biomarker data); overall percentages (continued)

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and ART use, both adjusted for having a detectable ARV in blood, by sex, residence, and region, THIS 2022-2023

Geography	Diagnosed					
	Men		Women		Total	
	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number
Kusini Unguja	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*
	On Treatment					
	Men		Women		Total	
	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number
Residence						
Urban	75.2	172	82.9	509	80.5	681
Rural	76.2	379	83.9	790	81.2	1,169
Mainland/Zanzibar						
Mainland	75.9	548	83.5	1,293	80.9	1,841
Zanzibar	*	*	*	*	*	*
Mainland, by region						
Dodoma	*	*	70.0	52	73.1	64
Arusha	*	*	*	*	*	*
Kilimanjaro	*	*	*	*	(83.9)	32
Tanga	*	*	*	*	(93.5)	27
Morogoro	(71.4)	27	(69.1)	43	70.0	70
Pwani	*	*	(85.5)	35	(73.3)	44
Dar es Salaam	*	*	81.4	67	78.6	85
Lindi	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*
Ruvuma	*	*	(74.0)	37	79.4	56
Iringa	80.1	61	87.3	154	85.0	215
Mbeya	78.0	61	90.4	119	85.8	180
Singida	*	*	(71.3)	27	(69.4)	40
Tabora	*	*	(70.2)	40	66.4	63
Rukwa	*	*	*	*	(86.5)	29
Kigoma	*	*	*	*	*	*
Shinyanga	*	*	(80.6)	46	77.7	62
Kagera	84.7	54	89.3	87	87.4	141
Mwanza	(88.8)	38	87.4	91	87.9	129
Mara	*	*	(85.7)	43	81.0	55
Manyara	*	*	*	*	*	*
Njombe	88.7	66	91.7	185	90.8	251
Katavi	*	*	(79.6)	28	(85.3)	44

Table 9.3.A Adult 95-95-95 by geography (self-reported and antiretroviral biomarker data); overall percentages (continued)

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and ART use, both adjusted for having a detectable ARV in blood, by sex, residence, and region, THIS 2022-2023

	On Treatment					
	Men		Women		Total	
	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number
Simiyu	*	*	(91.7)	35	92.2	52
Geita	(64.9)	27	(88.1)	41	78.5	68
Songwe	*	*	(90.8)	33	(91.8)	49
Zanzibar, by island						
Unguja	*	*	*	*	*	*
Pemba	*	*	*	*	*	*
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*
	Viral Load Suppression (VLS) on Treatment					
	Men		Women		Total	
	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number
Residence						
Urban	70.0	172	78.3	509	75.8	681
Rural	70.7	379	80.0	790	76.7	1,169
Mainland/Zanzibar						
Mainland	70.5	548	79.2	1,293	76.3	1,841
Zanzibar	*	*	*	*	*	*
Mainland, by region		*				
Dodoma	*	*	65.8	52	67.7	64
Arusha	*	*	*	*	*	*
Kilimanjaro	*	*	*	*	(76.9)	32
Tanga	*	*	*	*	(93.5)	27
Morogoro	(63.7)	27	(66.9)	43	65.6	70
Pwani	*	*	(74.7)	35	(65.8)	44
Dar es Salaam	*	*	80.0	67	77.6	85
Lindi	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*
Ruvuma	*	*	(71.1)	37	71.6	56
Iringa	71.6	61	84.2	154	80.2	215
Mbeya	78.0	61	84.7	119	82.2	180
Singida	*	*	(71.3)	27	(69.4)	40
Tabora	*	*	(65.9)	40	63.8	63
Rukwa	*	*	*	*	(82.5)	29

Table 9.3.A Adult 95-95-95 by geography (self-reported and antiretroviral biomarker data); overall percentages (continued)

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and ART use, both adjusted for having a detectable ARV in blood, by sex, residence, and region, THIS 2022-2023

	Viral Load Suppression (VLS) on Treatment					
	Men		Women		Total	
	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number
Kigoma	*	*	*	*	*	*
Shinyanga	*	*	(77.8)	46	75.7	62
Kagera	83.4	54	83.3	87	83.3	141
Mwanza	(74.3)	38	77.0	91	76.0	129
Mara	*	*	(83.5)	43	76.8	55
Manyara	*	*	*	*	*	*
Njombe	85.3	66	86.0	185	85.8	251
Katavi	*	*	(79.6)	28	(83.1)	44
Simiyu	*	*	(86.8)	35	82.0	52
Geita	(57.1)	27	(82.7)	41	72.2	68
Songwe	*	*	(90.8)	33	(87.2)	49
Zanzibar, by island						
Unguja	*	*	*	*	*	*
Pemba	*	*	*	*	*	*
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood.
[2] Relates to Global AIDS Monitoring indicator 2022 (GAM 2022) 1.1: People living with HIV who know their HIV status; and PEPFAR DIAGNOSED_NAT: Percentage of adults and children living with HIV who know their status (have been diagnosed).
[3] Relates to GAM 2022 1.2: People living with HIV on ART and PEPFAR TX_CURR_NAT / SUBNAT: Number of adults and children currently receiving ART.
[4] Relates to GAM 2022 1.3: People living with HIV who have suppressed viral loads; and PEPFAR VL_SUPPRESSION_NAT: Percentage of people living with HIV on ART with a suppressed viral load.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
( ) Estimates based on a denominator of 25-49 are included in parentheses and should be interpreted with caution.

Table 9.3.B Adult 95-95-95 by geography (self-reported and antiretroviral biomarker data); conditional percentages

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and antiretroviral (ART) use, both adjusted for having a detectable antiretroviral in blood, by sex, residence, and region, THIS 2022-2023

Geography	Diagnosed					
	Men		Women		Total	
	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number
Residence						
Urban	76.6	172	84.7	509	82.2	681
Rural	79.5	379	84.9	790	83.0	1,169
Mainland/Zanzibar						
Mainland	78.5	548	84.8	1,293	82.7	1,841
Zanzibar	*	*	*	*	*	*
Mainland, by region						
Dodoma	*	*	77.2	52	78.8	64
Arusha	*	*	*	*	*	*
Kilimanjaro	*	*	*	*	(86.6)	32
Tanga	*	*	*	*	(93.5)	27
Morogoro	(71.4)	27	(71.1)	43	71.2	70
Pwani	*	*	(85.5)	35	(75.5)	44
Dar es Salaam	*	*	81.4	67	78.6	85
Lindi	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*
Ruvuma	*	*	(74.0)	37	82.3	56
Iringa	80.1	61	88.6	154	85.9	215
Mbeya	78.0	61	90.6	119	85.9	180
Singida	*	*	(71.3)	27	(72.4)	40
Tabora	*	*	(75.6)	40	71.9	63
Rukwa	*	*	*	*	(86.5)	29
Kigoma	*	*	*	*	*	*
Shinyanga	*	*	(80.6)	46	77.7	62
Kagera	84.7	54	89.3	87	87.4	141
Mwanza	(93.8)	38	89.8	91	91.2	129
Mara	*	*	(85.7)	43	85.3	55
Manyara	*	*	*	*	*	*
Njombe	92.0	66	92.9	185	92.6	251
Katavi	*	*	(82.9)	28	(89.8)	44
Simiyu	*	*	(91.7)	35	92.2	52
Geita	(64.9)	27	(91.0)	41	80.3	68
Songwe	*	*	(90.8)	33	(91.8)	49
Zanzibar, by island						
Unguja	*	*	*	*	*	*
Pemba	*	*	*	*	*	*

Table 9.3.B Adult 95-95-95 by geography (self-reported and antiretroviral biomarker data); conditional percentages (continued)

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and antiretroviral (ART) use, both adjusted for having a detectable antiretroviral in blood, by sex, residence, and region, THIS 2022-2023

Geography	Diagnosed					
	Men		Women		Total	
	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number	Percentage aware of HIV status[1,2]	Number
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*
	On Treatment Among Those Diagnosed					
	Men		Women		Total	
	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number
Residence						
Urban	98.2	139	97.9	437	97.9	576
Rural	95.7	317	98.8	691	97.8	1,008
Mainland/Zanzibar						
Mainland	96.7	454	98.4	1,123	97.8	1,577
Zanzibar	*	*	*	*	*	*
Mainland, by region						
Dodoma	*	*	(90.6)	41	92.7	51
Arusha	*	*	*	*	*	*
Kilimanjaro	*	*	*	*	(96.9)	29
Tanga	*	*	*	*	(100.0)	25
Morogoro	*	*	(97.1)	31	98.3	51
Pwani	*	*	(100.0)	29	(97.0)	34
Dar es Salaam	*	*	100.0	55	100.0	68
Lindi	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*
Ruvuma	*	*	(100.0)	28	(96.5)	46
Iringa	100.0	50	98.6	137	99.0	187
Mbeya	(100.0)	49	99.8	108	99.8	157
Singida	*	*	*	*	(95.8)	30
Tabora	*	*	(92.9)	31	(92.4)	47
Rukwa	*	*	*	*	(100.0)	25
Kigoma	*	*	*	*	*	*
Shinyanga	*	*	(100.0)	38	100.0	50
Kagera	(100.0)	46	100.0	78	100.0	124
Mwanza	(94.7)	35	97.4	82	96.4	117
Mara	*	*	(100.0)	37	(94.9)	47
Manyara	*	*	*	*	*	*
Njombe	96.4	61	98.7	173	98.0	234

Table 9.3.B Adult 95-95-95 by geography (self-reported and antiretroviral biomarker data); conditional percentages (continued)

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and antiretroviral (ART) use, both adjusted for having a detectable antiretroviral in blood, by sex, residence, and region, THIS 2022-2023

	On Treatment Among Those Diagnosed					
	Men		Women		Total	
	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number	Percentage on ART[1,3]	Number
Katavi	*	*	*	24	(95.0)	40
Simiyu	*	*	(100.0)	32	(100.0)	48
Geita	*	*	(96.8)	37	97.9	55
Songwe	*	*	(100.0)	30	(100.0)	45
Zanzibar, by island						
Unguja	*	*	*	*	*	*
Pemba	*	*	*	*	*	*
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*
	Viral Load Suppression (VLS) Among Those on Treatment					
	Men		Women		Total	
	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number
Residence						
Urban	93.1	137	94.5	427	94.1	564
Rural	92.8	308	95.3	683	94.4	991
Mainland/Zanzibar						
Mainland	92.9	443	94.9	1,105	94.3	1,548
Zanzibar	*	*	*	*	*	*
Mainland, by region						
Dodoma	*	*	(94.0)	37	(92.6)	47
Arusha	*	*	*	*	*	*
Kilimanjaro	*	*	*	*	(91.6)	28
Tanga	*	*	*	*	100.0	25
Morogoro	*	*	(96.8)	30	93.7	50
Pwani	*	*	(87.3)	29	(89.8)	33
Dar es Salaam	*	*	98.3	55	98.7	68
Lindi	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*
Ruvuma	*	*	(96.0)	28	(90.2)	45
Iringa	89.3	50	96.4	135	94.3	185
Mbeya	(100.0)	49	93.7	107	95.8	156
Singida	*	*	*	*	(100.0)	29
Tabora	*	*	(93.9)	29	(96.1)	44

Table 9.3.B Adult 95-95-95 by geography (self-reported and antiretroviral biomarker data); conditional percentages (continued)

95-95-95 targets among people living with HIV aged 15 years and older based upon their self-reported HIV status and antiretroviral (ART) use, both adjusted for having a detectable antiretroviral in blood, by sex, residence, and region, THIS 2022-2023

	Viral Load Suppression (VLS) Among Those on Treatment					
	Men		Women		Total	
	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number	Percentage with VLS[4]	Number
Rukwa	*	*	*	*	95.4	25
Kigoma	*	*	*	*	*	*
Shinyanga	*	*	(96.5)	38	97.4	50
Kagera	(98.5)	46	93.2	78	95.3	124
Mwanza	(83.7)	33	88.0	80	86.5	113
Mara	*	*	(97.5)	37	(94.9)	45
Manyara	*	*	*	*	*	*
Njombe	96.2	59	93.8	171	94.5	230
Katavi	*	*	*	*	(97.4)	38
Simiyu	*	*	(94.6)	32	(88.9)	48
Geita	*	*	(93.8)	36	91.9	54
Songwe	*	*	(100.0)	30	(95.0)	45
Zanzibar, by island						
Unguja	*	*	*	*	*	*
Pemba	*	*	*	*	*	*
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood.
[2] Relates to Global AIDS Monitoring Indicator 2021 (GAM 2022) 1.1: People living with HIV who know their HIV status, and PEPFAR DIAGNOSED_NAT: Percentage of adults and children living with HIV who know their status (have been diagnosed).
[3] Relates to GAM 2022 1.2: People living with HIV on antiretroviral therapy, and PEPFAR TX_CURR_NAT / SUBNAT: Number of adults and children currently receiving antiretroviral therapy (ART).
[4] Relates to GAM 2022 1.3: People living with HIV who have suppressed viral loads, and PEPFAR VL_SUPPRESSION_NAT: Percentage of people living with HIV on ART with a suppressed viral load.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

9.3 REFERENCES

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10. CLINICAL FEATURES OF PEOPLE LIVING WITH HIV

10.1 BACKGROUND

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] Keeping track of whether those who started on ART remain on treatment can help identify factors associated with disruptions in care and to understand whether there are barriers to retention on ART among certain populations. The data can be used to demonstrate the effectiveness of programs and highlight obstacles to expanding and improving them.

THIS 2022-2023 provided a unique opportunity to gauge progress in the expansion of HIV clinical services in Tanzania, as well as identify gaps and future challenges. Indicators such as CD4 count at diagnosis and retention on ART can provide evidence of program coverage, the ability to reach vulnerable populations, and quality of care. The distribution of CD4 counts also reflects population health and the potential impact of HIV on morbidity and mortality. For instance, a CD4 count below 350/µL is categorized as immune suppression, and a CD4 count of less than 200/µL is categorized as advanced HIV disease that requires more intensive care, screening for opportunistic infections and cancers, treatment, and support services to manage. When HIV is diagnosed in someone with immune suppression or advanced HIV disease, it is also considered a late diagnosis. Tracking the proportion of diagnoses made late can serve as an indicator of whether there are barriers to testing and can help programs allocate resources for the care of people living with advanced HIV disease.

Mobility with extended stays away from home among people living with HIV may also interfere with continuity of care and lead to treatment disruptions and failure, although this may be mitigated by differentiated approaches to treatment delivery. In addition, this survey gathered data on whether mental health issues affect health-seeking behavior, adherence, retention in care, and other clinical outcomes.[2]

10.2 RESULTS

The following tables and figure present clinical and mobility characteristics of people living with HIV.

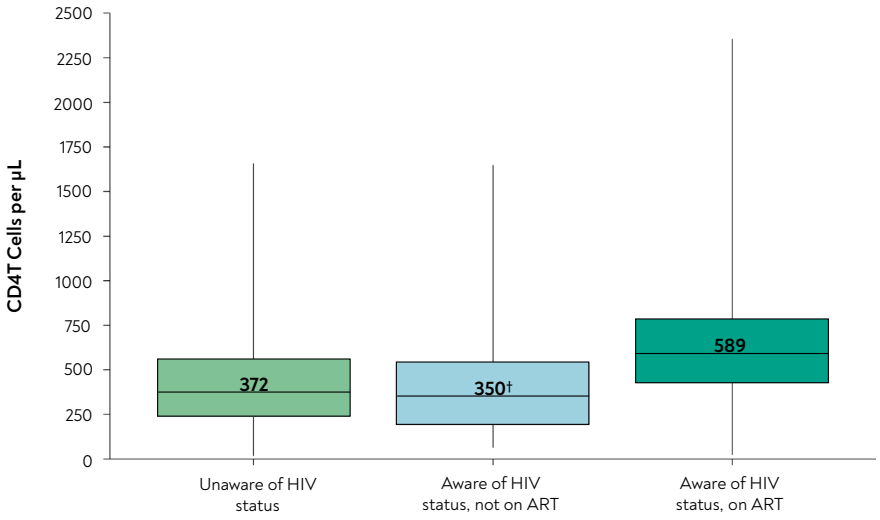
Table 10.1 Median CD4 count by HIV diagnosis and antiretroviral therapy status

Among adults living with HIV aged 15 years and older, median (quartile 1 [Q1], quartile 3 [Q3]) CD4 count (cells per microliter), by sex, and HIV diagnosis and treatment status based upon self-reported HIV-status and current antiretroviral therapy (ART) use, both adjusted for having a detectable antiretroviral (ARV) in blood, THIS 2022-2023

Characteristic	Men			Women			Total		
	Median (Q1, Q3)	Range	Number	Median (Q1, Q3)	Range	Number	Median (Q1, Q3)	Range	Number
HIV diagnosis and treatment status[1]									
Unaware of HIV status	334 (213, 522)	16-1095	94	392 (256, 574)	41-1658	171	372 (239, 556)	16-1658	265
Aware of HIV status and not on ART	*	*	*	*	*	*	350 (194, 537)†	62-1647	29
Aware of HIV status and on ART	508 (365, 633)	17-2354	443	631 (474, 828)	70-1896	1,109	589 (426, 777)	17-2354	1,552
Total 15-24 years	531 (361, 606)†	265-1361	25	600 (417, 800)	65-1658	90	556 (414, 778)	65-1658	115
Total 15-49 years	465 (305, 606)	17-2354	319	607 (415, 803)	41-1789	934	559 (377, 758)	17-2354	1,253
Total 50+ years	491 (327, 626)	16-1447	229	582 (428, 777)	78-1896	364	540 (389, 725)	16-1896	593
Total 15+ years	475 (318, 623)	16-2354	548	599 (421, 793)	41-1896	1,298	554 (380, 743)	16-2354	1,846

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood.
† Estimates based on a denominator of 25-49 are indicated with a dagger and should be interpreted with caution.
*Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

Figure 10.1
CD4 count distribution among adults living with HIV (ages 15 years and older) by HIV diagnosis and ART status, THIS 2022-2023



This box plot shows the CD4 count distribution among those who tested positive in the survey, based upon their self-reported awareness of HIV-positive status and antiretroviral therapy (ART) use. The band and number within each box represent the median CD4 count; the box represents the interquartile range (where half of the CD4 count measurements lie); while the whiskers (vertical lines) above and below the box show the range from the minimum to the maximum CD4 count. Estimates based on a denominator between 25 and 49 are indicated by a dagger and should be interpreted with caution.

Table 10.2 CD4 count distribution

Percent distribution of CD4 count among adults aged 15 years and older who tested HIV positive in the survey but reported an HIV-negative status and had no antiretrovirals detectable in blood, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	CD4 Count				Number
	< 200 cells/µL[1]	200-349 cells/µL	350-499 cells/µL	>= 500 cells/µL	
Sex					
Men	22.2	30.4	20.1	27.3	94
Women	12.8	30.2	22.2	34.8	171
Residence					
Urban	16.1	25.7	25.6	32.6	105
Rural	17.2	34.0	17.8	31.0	160
Mainland/Zanzibar					
Mainland	16.8	30.2	21.5	31.5	263
Zanzibar	*	*	*	*	*
Age (years)					
15-24	(9.8)	(10.0)	(23.4)	(56.8)	37
25-34	18.4	28.7	22.3	30.5	61
35-44	17.6	33.1	15.3	34.0	74
45-54	15.8	36.6	26.8	20.9	58
55-64	(21.5)	(39.4)	(24.7)	(14.3)	27
65+	*	*	*	*	*

Table 10.2 CD4 count distribution (continued)

Percent distribution of CD4 count among adults aged 15 years and older who tested HIV positive in the survey but reported an HIV-negative status and had no antiretrovirals detectable in blood, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	CD4 Count				Number
	< 200 cells/μL[1]	200-349 cells/μL	350-499 cells/μL	>= 500 cells/μL	
Total 15-24 years	(9.8)	(10.0)	(23.4)	(56.8)	37
Total 15-49 years	15.5	29.0	20.7	34.8	204
Total 50+ years	21.1	34.8	23.7	20.4	61
Total 15+ years	16.7	30.3	21.3	31.7	265

[1] Relates to GAM 1.4: Late HIV Diagnosis.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Characteristics with most data points suppressed due to small sample sizes (denominators below 25) have been omitted to protect participant confidentiality.

Table 10.3 Retention on antiretroviral therapy

Among adults living with HIV aged 15 years and older who reported initiating antiretroviral therapy (ART), percentage who reported they were still taking ART, by sex and years since initiating ART, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage still taking ART	Number	Percentage still taking ART	Number	Percentage still taking ART	Number
Number of years since initiating ART						
Less than 12 months	(93.7)	39	98.9	91	97.3	130
12 months or more	99.1	373	98.7	929	98.8	1,302
1 to less than 5 years	97.3	132	97.3	340	97.3	472
5 to less than 10 years	100.0	115	99.6	308	99.7	423
10 years or more	100.0	121	100.0	261	100.0	382
Total 15-24 years	*	*	(100.0)	47	100.0	64
Total 15-49 years	97.6	225	98.4	743	98.2	968
Total 50+ years	99.8	196	99.6	308	99.7	504
Total 15+ years	98.6	421	98.7	1,051	98.7	1,472

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

Table 10.4 HIV care and treatment status by extended stay away from home

Among adults living with HIV aged 15 years and older, percent distribution of HIV care and antiretroviral therapy (ART) status and receipt characteristics, by extended stay away from home, based upon self-report, THIS 2022-2023

Characteristic	Lived away from home for more than one month at a time in the year before the survey			
	Yes	Number	No	Number
HIV diagnosis and treatment status[1]				
Unaware of HIV status	24.6	37	16.1	187
Aware of HIV status and not on ART	2.2	5	1.7	21
Aware of HIV status and on ART	73.2	135	82.2	1,214
Viral load suppression (VLS)				
Yes	70.3	130	79.4	1,169
No	29.7	47	20.6	252
Treatment interrupted				
Yes	11.8	15	NA	NA
No	86.9	114	NA	NA
Never on ART	1.3	2	NA	NA
Was ART changed				
Yes	42.7	49	32.9	403
No	55.9	78	65.7	714
Never on ART	1.3	2	1.5	17
How normally receive ART				
Pick up at local clinic	43.2	56	44.4	487
Pick up at hospital	54.2	73	53.7	638
From the community support group/ adherence club	0.8	1	0.2	2
Delivery	0.0	0	0.2	3
A family member or friend collects them	0.0	0	0.2	2
Not currently on ART	1.8	3	1.3	12
Total 15+ years	100.0	177	100.0	1,422

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood.

Table 10.5 Mental health and HIV care and treatment

Percent distribution of care and treatment outcomes among adults living with HIV by mental health screening symptoms, THIS 2022-2023

	Screened likely for depressive symptoms[2]		Did not screen likely for depressive symptoms		Screened likely for generalized anxiety symptoms[3]		Did not screen likely for generalized anxiety symptoms	
Characteristic	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number
HIV diagnosis and treatment status[1]								
Unaware of HIV status	11.1	6	17.6	257	15.8	10	17.3	252
Aware of HIV status and not on antiretroviral therapy (ART)	1.6	1	1.8	28	1.2	1	1.8	27
Aware of HIV status and on ART	87.3	59	80.6	1,483	83.0	51	80.9	1,490

Table 10.5 Mental health and HIV care and treatment (continued)

Percent distribution of care and treatment outcomes among adults living with HIV by mental health screening symptoms, THIS 2022-2023

	Screened likely for depressive symptoms[2]		Did not screen likely for depressive symptoms		Screened likely for generalized anxiety symptoms[3]		Did not screen likely for generalized anxiety symptoms	
Characteristic	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number
Presence of a detectable antiretroviral (ARV)								
Detectable	83.2	57	77.3	1,421	78.8	49	77.5	1,429
Not detectable	16.8	9	22.7	346	21.2	13	22.5	339
Viral load suppression (VLS)								
Yes	87.3	58	77.7	1,430	79.9	49	78.0	1,437
No	12.7	8	22.3	337	20.1	13	22.0	331
Ever on ART								
Yes	100.0	56	98.4	1,404	98.4	48	98.4	1,410
No	0.0	0	1.6	23	1.6	1	1.6	22
Retention (among those who reported ever initiating ART)								
Reported current ART use[1]	98.1	55	98.8	1,390	100.0	48	98.8	1,396
Reported initiating but not on ART at time of the survey	1.9	1	1.2	14	0.0	0	1.2	14
Adherence (among those who reported current ART use)								
Adherent	90.6	46	87.6	1,213	93.7	43	87.5	1,215
Non-adherent	9.4	8	12.4	149	6.3	5	12.5	152
Total 15+ years	100.0	66	100.0	1,768	100.0	62	100.0	1,769

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood.
[2] Patient Health Questionnaire 2 score over 3 indicating depressive symptoms.
[3] Generalized Anxiety Disorder 2-item score over 3 indicating generalized anxiety symptoms.

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11. STIGMA AND DISCRIMINATION TOWARDS PEOPLE LIVING WITH HIV

11.1 BACKGROUND

Attitudes toward and perceptions of people living with HIV remain critical determinants in the trajectory of the HIV epidemic.[1,2] Even though the health outcomes of people living with HIV have greatly improved with the use of ART, misconceptions around HIV persist. These misconceptions often lead to false beliefs such as: HIV is synonymous with an imminent death, HIV results only from irresponsible actions, or HIV is exclusively linked to certain immoral behaviors.[2,3] Such misunderstandings can amplify stigmatization, further marginalizing already vulnerable populations.[4] Discrimination, rooted in these misconceptions, hinders prevention and treatment efforts, impedes access to vital services for those living with HIV, and perpetuates negative stereotypes that undermine comprehensive health initiatives. This chapter delves into the potential stigmatization against HIV and those living with it, highlighting its detrimental impacts.

In this survey, the assessment of discriminatory attitudes among adults aged 15 years and older toward people living with HIV follows the guidelines set by global AIDS monitoring agencies such as UNAIDS. The evaluation centers on two questions: 1) Would you buy fresh vegetables from a shopkeeper or vendor if you knew this person had HIV? and 2) Do you think that children living with HIV should be able to attend school with children who are HIV negative? A “no” response to either of these questions indicate discriminatory attitudes. These data could shed light on how HIV-related stigma could be thwarting efforts in prevention, testing, and broader HIV care.

11.2 RESULTS

Table 11.1 Discriminatory attitudes towards people living with HIV

Among persons aged 15 years and older, percentage who report discriminatory attitudes towards people living with HIV, by selected demographic characteristics, THIS 2022-2023

	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	
Characteristic	Percentage who responded "No"	Number	Percentage who responded "No"	Number	Percentage who responded "No" to either of the two questions[1]	Number
Residence						
Urban	17.3	11,489	8.8	11,489	20.1	11,489
Rural	25.7	21,719	15.1	21,719	29.4	21,719
Mainland/Zanzibar						
Mainland	21.9	31,320	12.4	31,320	25.3	31,320
Zanzibar	34.8	1,888	18.4	1,888	37.9	1,888
Mainland, by region						
Dodoma	24.8	1,799	16.1	1,799	29.2	1,799
Arusha	23.0	569	11.7	569	26.1	569
Kilimanjaro	15.3	650	8.8	650	18.5	650
Tanga	27.9	905	15.2	905	30.6	905
Morogoro	21.5	2,009	13.8	2,009	25.4	2,009
Pwani	21.0	867	13.0	867	24.4	867
Dar es Salaam	14.7	1,928	7.5	1,928	17.7	1,928
Lindi	19.8	593	10.3	593	23.0	593
Mtwara	26.1	640	15.3	640	29.8	640

Table 11.1 Discriminatory attitudes towards people living with HIV (continued)

Among persons aged 15 years and older, percentage who report discriminatory attitudes towards people living with HIV, by selected demographic characteristics, THIS 2022-2023

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"	Number	Percentage who responded "No"	Number	Percentage who responded "No" to either of the two questions[1]	Number
Ruvuma	20.5	976	12.0	976	24.1	976
Iringa	16.5	1,861	13.1	1,861	21.4	1,861
Mbeya	11.1	1,772	7.2	1,772	13.5	1,772
Singida	21.2	1,083	11.2	1,083	23.2	1,083
Tabora	25.2	1,002	14.2	1,002	28.5	1,002
Rukwa	13.8	791	8.6	791	16.4	791
Kigoma	25.5	1,018	14.3	1,018	28.7	1,018
Shinyanga	23.5	928	12.2	928	25.8	928
Kagera	29.9	2,068	16.1	2,068	33.1	2,068
Mwanza	23.6	2,470	11.5	2,470	26.6	2,470
Mara	22.0	968	11.2	968	25.1	968
Manyara	29.6	529	14.8	529	31.6	529
Njombe	10.8	1,781	10.1	1,781	17.1	1,781
Katavi	21.6	1,017	14.4	1,017	27.0	1,017
Simiyu	31.3	1,168	17.0	1,168	34.5	1,168
Geita	26.9	1,120	13.7	1,120	30.3	1,120
Songwe	13.1	808	13.9	808	20.6	808
Zanzibar, by island						
Unguja	30.2	966	14.2	966	32.8	966
Pemba	46.4	922	29.2	922	50.8	922
Zanzibar, by region						
Kaskazini Unguja	42.6	122	23.7	122	45.2	122
Kusini Unguja	22.9	112	13.2	112	23.7	112
Mjini Magharibi	29.2	732	12.8	732	32.1	732
Kaskazini Pemba	42.8	412	27.8	412	47.7	412
Kusini Pemba	49.4	510	30.3	510	53.3	510
Marital status						
Never married	27.4	8,404	14.4	8,404	30.7	8,404
Married or living together	20.4	19,568	11.9	19,568	23.9	19,568
Divorced or separated	18.3	2,995	11.2	2,995	22.0	2,995
Widowed	20.8	2,186	12.8	2,186	23.2	2,186
Education						
No education	29.4	4,672	20.6	4,672	33.2	4,672
Primary	24.3	19,391	14.0	19,391	27.8	19,391
Secondary	17.4	8,054	7.5	8,054	20.3	8,054
More than secondary	6.3	1,059	4.7	1,059	9.8	1,059

Table 11.1: Discriminatory attitudes towards people living with HIV (continued)

Among persons aged 15 years and older, percentage who report discriminatory attitudes towards people living with HIV, by selected demographic characteristics, THIS 2022-2023

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"	Number	Percentage who responded "No"	Number	Percentage who responded "No" to either of the two questions[1]	Number
Wealth quintile						
Lowest	31.1	6,968	18.9	6,968	34.9	6,968
Second	26.7	7,482	15.4	7,482	30.2	7,482
Middle	22.1	7,443	12.6	7,443	25.6	7,443
Fourth	17.5	5,966	9.3	5,966	20.8	5,966
Highest	13.9	5,335	6.5	5,335	16.6	5,335
Age (years)						
15-19	34.1	5,041	17.4	5,041	37.3	5,041
20-24	26.7	4,829	15.0	4,829	30.4	4,829
25-29	19.6	4,266	11.2	4,266	23.1	4,266
30-34	16.7	3,645	9.6	3,645	20.3	3,645
35-39	15.8	3,131	9.8	3,131	19.0	3,131
40-44	15.3	2,749	9.7	2,749	18.9	2,749
45-49	15.8	2,308	10.7	2,308	19.9	2,308
50-54	17.5	2,048	10.4	2,048	20.1	2,048
55-59	21.5	1,345	11.5	1,345	23.9	1,345
60-64	22.4	1,386	11.5	1,386	24.6	1,386
65+	23.9	2,460	15.0	2,460	26.8	2,460
Total 15-24 years	30.6	9,870	16.3	9,870	34.1	9,870
Total 15-49 years	22.6	25,969	12.7	25,969	26.2	25,969
Total 50+ years	21.3	7,239	12.4	7,239	23.9	7,239
Total 15+ years	22.4	33,208	12.7	33,208	25.8	33,208

[1] Relates to Global AIDS Monitoring 2022 indicator 4.1: Discriminatory attitudes towards people living with HIV.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

11.3 REFERENCES

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12. PREVENTION OF MOTHER-TO-CHILD TRANSMISSION

12.1 BACKGROUND

Pregnant women living with HIV who are not on ART are at higher risk of transmitting HIV to their infants during pregnancy, during birth, or through breastfeeding. Over 90% of new HIV infections among infants and young children occur through vertical transmission.[1] Without any interventions, between 15% to 45% of infants may become infected with HIV, with an estimated risk of 5% to 10% during pregnancy, 10% to 20% during labor and delivery, and 5% to 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 virtual elimination of vertical transmission of HIV.[2]

To prevent vertical transmission, WHO recommends a comprehensive four-pronged approach including: (1) primary prevention of HIV infection among women of childbearing age (aged 15-49 years, referred to as women below); (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]

The broader health goal is to deliver an integrated package of care for the mothers and infants that includes maternal, newborn and child health and prevention of mother-to-child transmission (PMTCT) services. Antenatal care (ANC) is a critical entry platform where most women access PMTCT and it provides the opportunity to monitor pregnancy, provide the interventions needed for PMTCT, and overall reduce risk of morbidity for mother and infant. To achieve the elimination of vertical transmission goal, 95% of mothers need to know their status, 95% of women living with HIV need to be on ART, and 95% need to achieve VLS.[3] With such high targets, countries can ill-afford to miss any women in need of these services.

12.2 RESULTS

The following tables present ANC attendance, breastfeeding practices, awareness of a woman's HIV status before or during pregnancy, use of ART during pregnancy in women who were aware of their HIV-positive status, VLS among women, and mother-reported infant HIV testing during the survey.

Table 12.1 Antenatal care

Among women aged 15-49 years who delivered in the three years before the survey, percentage who reported attending at least one antenatal care (ANC) visit for her most recent birth, by selected demographic characteristics, THIS 2022-2023

Characteristic	Percentage who attended at least one ANC visit	Number
Residence		
Urban	99.2	1,651
Rural	97.6	3,648
Mainland/Zanzibar		
Mainland	98.1	5,077
Zanzibar	99.8	222
Mainland, by region		
Dodoma	96.9	331
Arusha	98.7	87
Kilimanjaro	98.8	65
Tanga	98.6	140
Morogoro	97.9	403
Pwani	98.3	108
Dar es Salaam	99.6	229

Table 12.1 Antenatal care (continued)

Among women aged 15-49 years who delivered in the three years before the survey, percentage who reported attending at least one antenatal care (ANC) visit for her most recent birth, by selected demographic characteristics, THIS 2022-2023

Characteristic	Percentage who attended at least one ANC visit	Number
Lindi	100.0	59
Mtwara	100.0	59
Ruvuma	99.1	110
Iringa	98.4	258
Mbeya	98.6	256
Singida	97.0	216
Tabora	95.2	187
Rukwa	99.4	160
Kigoma	99.4	193
Shinyanga	97.0	155
Kagera	97.8	365
Mwanza	99.3	414
Mara	99.4	153
Manyara	96.9	127
Njombe	99.0	226
Katavi	96.9	211
Simiyu	94.3	260
Geita	99.5	190
Songwe	97.2	115
Zanzibar, by island		
Unguja	100.0	107
Pemba	99.2	115
Zanzibar, by region		
Kaskazini Unguja	*	*
Kusini Unguja	*	*
Mjini Magharibi	100.0	80
Kaskazini Pemba	98.3	51
Kusini Pemba	100.0	64
Marital status		
Never married	98.0	401
Married or living together	98.4	4,367
Divorced or separated	95.8	454
Widowed	100.0	73
Education		
No education	96.5	856
Primary	98.0	3,141
Secondary	99.3	1,179
More than secondary	100.0	121
Wealth quintile		
Lowest	95.9	1,493
Second	98.5	1,185
Middle	99.0	1,057

Table 12.1 Antenatal care (continued)

Among women aged 15-49 years who delivered in the three years before the survey, percentage who reported attending at least one antenatal care (ANC) visit for her most recent birth, by selected demographic characteristics, THIS 2022-2023

Characteristic	Percentage who attended at least one ANC visit	Number
Fourth	99.2	810
Highest	99.5	754
Age (years)		
15-19	98.5	374
20-24	98.5	1,446
25-29	98.2	1,362
30-34	98.3	968
35-39	97.6	735
40-44	97.3	333
45-49	94.7	81
Total 15-24 years	98.5	1,820
Total 15-49 years	98.2	5,299

* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 12.2 Prevention of mother-to-child transmission: Known HIV status

Among women aged 15-49 years who gave birth within the 12 months before the survey, percentage who reported that they were tested for HIV during antenatal care (ANC) and received their results or that they already knew they were HIV positive during their last pregnancy, by selected demographic characteristics, THIS 2022-2023

Characteristic	Tested for HIV during ANC and received results		Percentage who already knew they were HIV positive	Total percentage with known HIV status[1]	Number of women who gave birth within the 12 months before the survey
	Percentage who tested HIV positive	Percentage who tested HIV negative			
Residence					
Urban	0.9	88.1	2.2	91.2	677
Rural	0.4	85.9	1.6	87.8	1,570
Mainland/Zanzibar					
Mainland	0.6	86.5	1.8	88.9	2,140
Zanzibar	0.0	90.2	0.0	90.2	107
Mainland, by region					
Dodoma	0.0	83.5	0.0	83.5	142
Arusha	(0.0)	(90.9)	(0.0)	(90.9)	31
Kilimanjaro	*	*	*	*	*
Tanga	1.6	87.2	0.0	88.8	62
Morogoro	0.6	88.8	1.3	90.6	163
Pwani	(0.0)	(93.7)	(3.0)	(96.7)	43
Dar es Salaam	1.1	85.2	2.5	88.8	85
Lindi	*	*	*	*	*
Mtwara	*	*	*	*	*

Table 12.2 Prevention of mother-to-child transmission: Known HIV status (continued)

Among women aged 15-49 years who gave birth within the 12 months before the survey, percentage who reported that they were tested for HIV during antenatal care (ANC) and received their results or that they already knew they were HIV positive during their last pregnancy, by selected demographic characteristics, THIS 2022-2023

Characteristic	Tested for HIV during ANC and received results		Percentage who already knew they were HIV positive	Total percentage with known HIV status[1]	Number of women who gave birth within the 12 months before the survey
	Percentage who tested HIV positive	Percentage who tested HIV negative			
Ruvuma	0.0	84.2	4.1	88.3	51
Iringa	0.0	86.0	4.5	90.5	83
Mbeya	0.8	86.7	1.1	88.6	104
Singida	0.0	82.7	0.0	82.7	105
Tabora	1.3	82.2	2.4	85.8	85
Rukwa	0.0	85.1	0.9	86.0	81
Kigoma	1.4	82.6	1.4	85.4	76
Shinyanga	1.1	84.0	0.0	85.1	73
Kagera	1.2	85.3	2.4	89.0	161
Mwanza	0.0	88.4	2.2	90.7	176
Mara	0.0	79.3	1.2	80.5	65
Manyara	0.0	86.7	0.0	86.7	50
Njombe	2.1	79.8	8.8	90.7	89
Katavi	2.3	82.0	2.9	87.2	96
Simiyu	0.0	88.3	1.6	89.9	119
Geita	0.0	92.8	3.8	96.6	92
Songwe	(0.0)	(87.3)	(1.8)	(89.1)	44
Zanzibar, by island					
Unguja	0.0	92.0	0.0	92.0	50
Pemba	0.0	86.2	0.0	86.2	57
Zanzibar, by region					
Kaskazini Unguja	*	*	*	*	*
Kusini Unguja	*	*	*	*	*
Mjini Magharibi	(0.0)	(93.9)	(0.0)	(93.9)	33
Kaskazini Pemba	(0.0)	(80.1)	(0.0)	(80.1)	25
Kusini Pemba	(0.0)	(91.4)	(0.0)	(91.4)	32
Marital status					
Never married	1.3	87.8	1.8	90.9	180
Married or living together	0.4	87.4	1.2	89.0	1,897
Divorced or separated	1.0	78.3	7.4	86.7	142
Widowed	(7.8)	(70.6)	(3.7)	(82.1)	26
Education					
No education	1.6	84.1	2.0	87.7	367
Primary	0.5	85.7	2.2	88.4	1,309
Secondary	0.2	89.7	0.9	90.7	516
More than secondary	0.0	90.6	0.0	90.6	54

Table 12.2 Prevention of mother-to-child transmission: Known HIV status (continued)

Among women aged 15-49 years who gave birth within the 12 months before the survey, percentage who reported that they were tested for HIV during antenatal care (ANC) and received their results or that they already knew they were HIV positive during their last pregnancy, by selected demographic characteristics, THIS 2022-2023

Characteristic	Tested for HIV during ANC and received results		Percentage who already knew they were HIV positive	Total percentage with known HIV status[1]	Number of women who gave birth within the 12 months before the survey
	Percentage who tested HIV positive	Percentage who tested HIV negative			
Wealth quintile					
Lowest	0.3	83.2	2.0	85.5	655
Second	0.9	86.5	1.5	88.9	508
Middle	0.6	88.1	1.2	89.9	436
Fourth	0.4	90.1	1.9	92.4	343
Highest	0.6	87.6	2.5	90.7	305
Age (years)					
15-19	0.3	84.3	0.6	85.1	229
20-24	0.4	89.1	1.0	90.5	647
25-29	0.4	88.2	0.8	89.4	567
30-34	0.8	83.9	2.7	87.4	411
35-39	1.1	84.5	5.2	90.8	269
40-44	0.7	81.1	4.4	86.3	96
45-49	(0.0)	(87.7)	(5.2)	(92.9)	28
Total 15-24 years	0.4	87.7	0.9	89.0	876
Total 15-49 years	0.6	86.6	1.8	88.9	2,247

[1] Relates to PEPFAR indicator PMTCT_STAT_NAT / SUBNAT: Percentage of pregnant women with known HIV status and Global AIDS Monitoring 2020indicator 2.6: HIV testing in pregnant women.

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

Note: Characteristics with most data points suppressed due to small sample sizes (denominators below 25) have been omitted to protect participant confidentiality.

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 12.3 Prevention of mother-to-child transmission: Pregnant women living with HIV who received antiretroviral therapy

Among self-reported women living with HIV aged 15-49 years who gave birth within the 12 months before the survey, percentage who reported they had received antiretroviral therapy (ART) during their last pregnancy to reduce the risk of mother-to-child-transmission, by selected demographic characteristics, THIS 2022-2023

Characteristic	Percentage who were already on ART before pregnancy	Percentage who were newly initiated on ART during pregnancy or labor and delivery	Total percentage who received ART[1]	Number of women living with HIV who gave birth within the 12 months before the survey
Residence				
Urban	*	*	*	*
Rural	(81.1)	(18.9)	(100.0)	36
Mainland/Zanzibar				
Mainland	74.8	24.0	98.8	60
Zanzibar	*	*	*	*
Total 15-24 years	*	*	*	*
Total 15-49 years	74.8	24.0	98.8	60

[1] Relates to Global AIDS Monitoring 2022 indicator 2.3: Preventing mother-to-child transmission of HIV and PEPFAR indicator PMTCT_ARV_NAT / SUBNAT: Number and percentage of HIV-positive pregnant women who received antiretroviral medicine (ARV) during pregnancy to reduce the risk of mother-to-child transmission.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

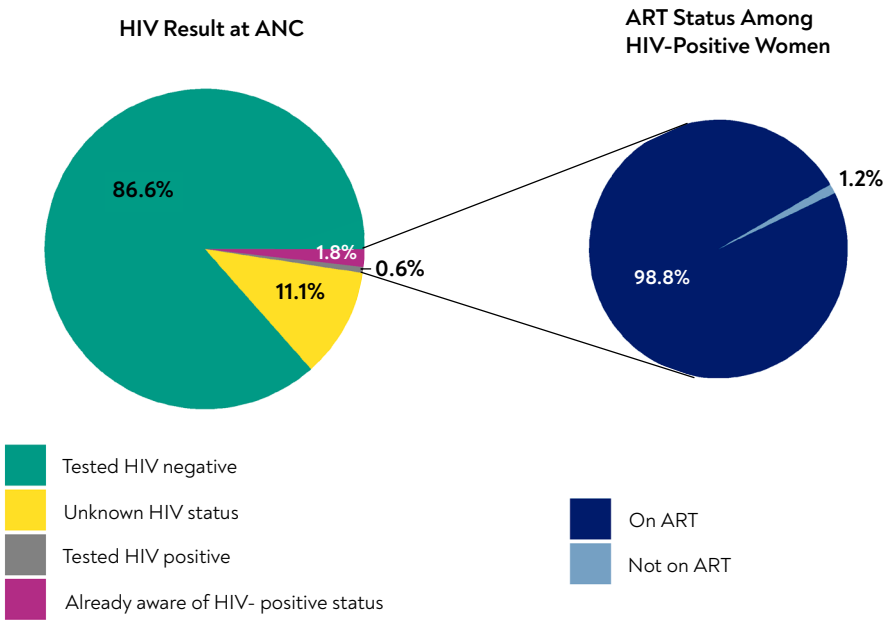

Figure 12.3 Self-reported HIV testing status and antiretroviral therapy use during antenatal care among mothers aged 15-49 years who delivered in the 12 months before the survey, THIS 2022-2023

Abbreviations: ANC, antenatal care; ART, antiretroviral therapy.
Unknown HIV status included all those who said "no," "don't know," or refused to answer when asked whether they were tested for HIV in the ANC for their last pregnancy, as well as those who answered "unknown/inconclusive," "did not receive results," "don't know," or who refused to answer when asked what their test results were when they tested in the ANC for their last pregnancy.

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

Percent distribution of last-born children born to women aged 15-49 years in the three years before the survey by breastfeeding status reported by their mothers, by child's age and mother's HIV status, THIS 2022-2023

Characteristic	Never breastfed	Ever breastfed, but not currently breastfeeding	Currently breastfeeding	Total	Number
Child's age (months)					
0-1	1.2	5.9	93.0	100.0	400
2-3	1.5	5.5	93.0	100.0	371
4-5	1.7	4.0	94.3	100.0	366
6-8	2.1	6.2	91.7	100.0	558
9-11	0.6	11.2	88.2	100.0	537
12-17	0.9	21.6	77.4	100.0	972
18-23	1.0	51.4	47.6	100.0	801
24-36	1.2	90.7	8.1	100.0	1,260
Result of mother's THIS 2022-2023 HIV test					
HIV positive	0.8	50.0	49.2	100.0	182
HIV negative	1.2	36.3	62.5	100.0	4,798
Not tested	1.3	33.1	65.6	100.0	318
Total	1.2	36.4	62.4	100.0	5,298

Table 12.5 Prevention of mother-to-child transmission: Early infant testing

Among self-reported women living with HIV aged 15-49 years who delivered in the 3 years before the survey, percentage who reported their last-born infant had an HIV test done within 2 months of birth and within 12 months of birth, by result of infant's HIV test, THIS 2022-2023

Characteristic	Percentage of infants who had an HIV test within 2 months of age[1,2]	Percentage of infants who had an HIV test between 2 and 12 months of age[2]	Number of infants born in the 3 years before the survey to women living with HIV[3]
Result of infant's HIV test			
HIV positive	*	*	*
HIV negative	67.4	28.4	109
Don't know/other	*	*	20
Total	62.3	25.0	147

[1] Relates to Global AIDS Monitoring 2022 indicator 2.1: Early infant diagnosis;
[2] Relates to PEPFAR indicator PMTCT_EID: Percentage of infants born to HIV-positive women who received a first virologic HIV test (sample collected) by 12 months of age;
[3] Includes only last-born infants.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

Table 12.6 Viral load suppression in women of childbearing age living with HIV, by pregnancy status and other characteristics

Among women of childbearing age (ages 15-49 years) living with HIV, percentage with viral load suppression (VLS) (HIV RNA < 1,000 copies/milliliter), by self-reported pregnancy, breastfeeding, and timing since pregnancy, THIS 2022-2023

Characteristic	Percentage with VLS	Number
Ever pregnant		
Yes	81.3	851
No	58.5	81
Pregnancy status		
Pregnant at time of the survey	(80.2)	40
Not pregnant at time of the survey	78.8	893
Delivered in the 12 months before the survey		
Delivered in the 12 months before the survey	86.4	76
Did not deliver in the 12 months before the survey	81.0	757
Delivered in the 3 years before the survey		
Delivered in the 3 years before the survey	85.9	182
Did not deliver in the 3 years before the survey	80.2	649
Breastfeeding status		
Never breastfed	*	*
Ever breastfed, but not currently breastfeeding	80.2	152
Currently breastfeeding	85.7	87

* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

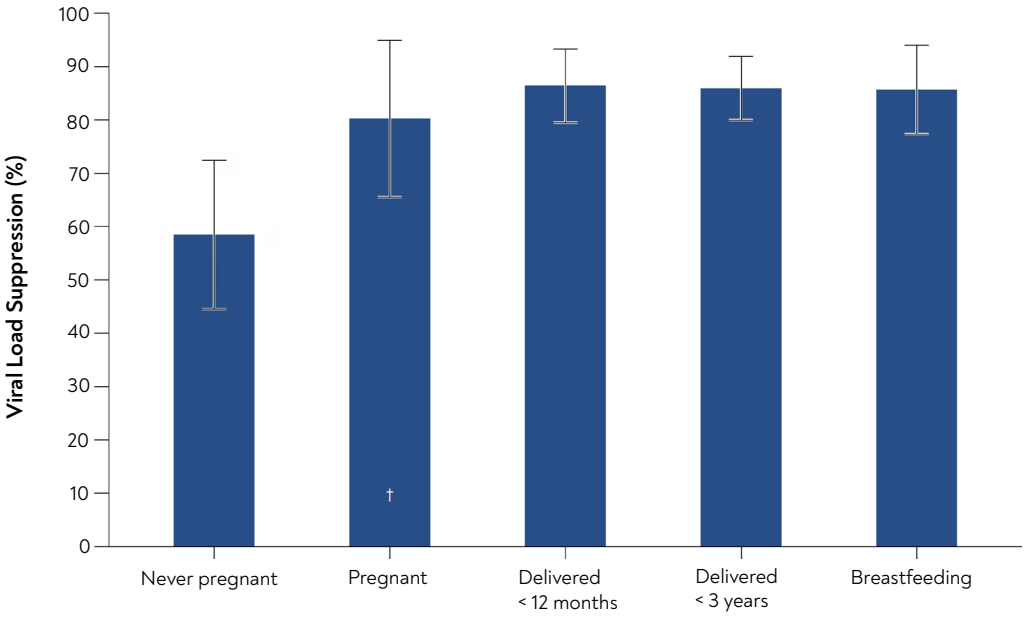

Figure 12.6
Viral load suppression among women living with HIV (ages 15-49 years) by pregnancy status, time since last pregnancy, and breastfeeding status at time of survey, THIS 2022-2023

Estimates based on a denominator between 25 and 49 are indicated by a dagger and should be interpreted with caution.

12.3 REFERENCES

1. De Cock KM, Fowler MG, Mercier E, et al. Prevention of mother-to-child HIV transmission in resource-poor countries: translating research into policy and practice. *JAMA.* 2000;283(9):1175-1182. doi:10.1001/jama.283.9.1175.

2. World Health Organization. *Towards the elimination of mother-to-child transmission of HIV: report of a WHO technical consultation.* Geneva: WHO; 2011. http://apps.who.int/iris/handle/10665/44638. Accessed August 30, 2023.

3. World Health Organization. *Global guidance on criteria and processes for validation: elimination of mother-to-child transmission of HIV and syphilis, 2nd edition.* Geneva: WHO; 2017. https://www.who.int/publications/i/item/9789240039360. Accessed August 30, 2023.

13. HIV RISK FACTORS AND PREVENTION INTERVENTIONS

13.1 BACKGROUND

This chapter describes the prevalence of sexual behaviors that increase the risk of HIV transmission as well as the uptake of key HIV prevention methods. THIS 2022-2023 provides evidence on high-risk behaviors, including early sexual debut, number of lifetime sexual partners, and recent engagement in multiple sexual partnerships among adults in Tanzania. The report also presents data on use of proven HIV prevention interventions including condom use, voluntary medical male circumcision, and PrEP (pre-exposure prophylaxis—the use of ARVs to prevent HIV acquisition).

Risk-taking behavior among young adolescents (aged 10-14 years) and young people (aged 15-24 years) is a particularly important challenge for meeting the UNAIDS goal of reducing new HIV infections by 90% by 2030. Young people are particularly more likely to engage in risky sexual behaviors than older adults and have less frequent contact with the health system.[1] Although young adolescents were not included in THIS 2022-2023, Table 13.3 shows the prevalence of early sexual debut before 15 years of age self-reported by young people in Tanzania, by sex, region, and other selected sociodemographic characteristics that may identify where young adolescents and young people may benefit from enhanced HIV education and prevention efforts.

Although the scale-up of universal testing and treatment has been expected to lead to reduced HIV transmission, eliminating HIV transmission will require a combination of prevention options that can meet the current needs of different people.[2] Condoms remain an inexpensive and effective tool that can prevent HIV, sexually transmitted infections, and may help reduce the frequency of unwanted pregnancies (particularly in combination with other contraception methods). THIS 2022-2023 asked participants about their condom use at last sexual intercourse, particularly with non-marital, non-cohabitating partners (Tables 13.4.A, 13.4.B, 13.4.C). Since 2007, WHO and UNAIDS have also recommended voluntary medical male circumcision as a cost-effective strategy to reduce male acquisition of HIV.[3] To inform the national voluntary medical male circumcision program, THIS 2022-2023 asked men whether they had been medically or traditionally circumcised (Table 13.5). Finally, PrEP, the use of ARVs by people at risk for HIV to prevent HIV acquisition, has become an important prevention tool among some populations and in regions with the highest HIV prevalence.[4] Tables 13.6, 13.7, and 13.8 describe the knowledge levels, acceptability of, and update of PrEP among adults in Tanzania at the time of the survey.

With this information, the national program can tailor its prevention efforts to reach those individuals most at risk for HIV infection and most in need of services and provide them with prevention options that work for them.

13.2 RESULTS

The following tables present THIS 2022-2023 data on HIV risk factors and uptake of prevention interventions by demographic characteristics.

Table 13.1 Sexual behavior by demographic characteristics

Percent distribution of self-reported sexual behavior characteristics among adults aged 15 years and older, by sex, THIS 2022-2023

	Men		Women		Total	
Characteristic	Percent	Number	Percent	Number	Percent	Number
Ever had sex						
Yes	87.4	13,330	89.5	18,570	88.5	31,900
No	12.6	1,727	10.5	1,798	11.5	3,525

Table 13.1 Sexual behavior by demographic characteristics (continued)

Percent distribution of self-reported sexual behavior characteristics among adults aged 15 years and older, by sex, THIS 2022-2023

	Men		Women		Total	
Characteristic	Percent	Number	Percent	Number	Percent	Number
Had sex in the 12 months before the survey						
Yes	79.2	11,829	74.1	14,705	76.5	26,534
No	8.1	1,278	15.0	3,223	11.7	4,501
Never had sex	12.7	1,727	10.9	1,798	11.8	3,525
Had sexual intercourse before the age of 15 years						
Yes	9.1	1,168	6.3	1,227	7.6	2,395
No	77.5	11,242	82.6	16,260	80.2	27,502
Never had sex	13.3	1,727	11.1	1,798	12.2	3,525
Total 15-24 years	33.6	4,506	33.5	6,018	33.5	10,524
Total 15-49 years	81.6	11,666	81.1	16,114	81.3	27,780
Total 50+ years	18.4	3,730	18.9	4,447	18.7	8,177
Total 15+ years	100.0	15,396	100.0	20,561	100.0	35,957

Table 13.2 HIV prevalence by sexual behavior

Prevalence of HIV among adults aged 15 years and older, by sex and self-reported sexual behavior characteristics, THIS 2022-2023

	Men		Women		Total	
Characteristic	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Age (years) at first sexual intercourse						
Under 15	2.4	1,113	7.7	1,176	4.7	2,289
15-19	3.6	6,644	6.2	11,521	5.1	18,165
20-24	3.3	2,731	5.7	3,164	4.5	5,895
25+	2.8	1,116	4.7	581	3.5	1,697
Number of lifetime sexual partners						
0	0.5	1,629	0.6	1,686	0.6	3,315
1	1.8	2,238	3.1	7,578	2.8	9,816
2+	3.6	9,567	8.4	9,114	5.7	18,681
Number of sexual partners in the 12 months before the survey						
0	3.9	1,194	9.6	3,033	7.7	4,227
1	3.5	7,747	5.0	12,908	4.4	20,655
2+	3.0	3,261	12.1	769	4.5	4,030
Condom use at last sexual intercourse in the 12 months before the survey						
Used condom	5.8	1,269	18.0	1,009	10.5	2,278
Did not use condom	3.0	9,729	4.4	12,648	3.7	22,377
No sexual intercourse in the 12 months before the survey	3.9	1,194	9.6	3,033	7.7	4,227

Table 13.2 HIV prevalence by sexual behavior (continued)

Prevalence of HIV among adults aged 15 years and older, by sex and self-reported sexual behavior characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Total 15-24 years	0.6	4,242	1.3	5,662	1.0	9,904
Total 15-49 years	2.4	10,833	5.0	15,064	3.8	25,897
Total 50+ years	6.0	3,538	8.0	4,228	7.1	7,766
Total 15+ years	3.0	14,371	5.6	19,292	4.4	33,663

Table 13.3 Sex before the age of 15 years

Percentage of young people aged 15-24 years who reported that they had sexual intercourse before the age of 15 years by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage who had sex before the age of 15 years	Number	Percentage who had sex before the age of 15 years	Number	Percentage who had sex before the age of 15 years	Number
Residence						
Urban	10.9	1,381	3.6	2,116	6.9	3,497
Rural	14.0	2,833	7.4	3,649	10.6	6,482
Mainland/Zanzibar						
Mainland	13.3	3,927	6.1	5,416	9.5	9,343
Zanzibar	3.2	287	1.4	349	2.3	636
Mainland, by region						
Dodoma	21.8	226	6.3	284	14.0	510
Arusha	8.9	78	5.7	90	7.5	168
Kilimanjaro	(9.4)	47	1.1	71	4.7	118
Tanga	12.6	114	4.1	142	8.4	256
Morogoro	19.0	227	11.3	369	14.6	596
Pwani	14.5	104	3.2	161	8.1	265
Dar es Salaam	7.2	209	2.4	349	4.4	558
Lindi	9.4	59	4.0	74	6.7	133
Mtwara	20.1	78	2.1	91	11.2	169
Ruvuma	15.1	119	4.9	162	9.7	281
Iringa	9.9	181	3.5	224	6.7	405
Mbeya	9.1	188	3.3	270	5.9	458
Singida	6.8	141	8.3	178	7.5	319
Tabora	14.9	148	7.5	210	11.0	358
Rukwa	4.6	80	4.7	127	4.7	207
Kigoma	11.4	147	11.3	223	11.3	370
Shinyanga	13.6	118	7.5	200	10.1	318
Kagera	16.9	276	6.6	352	11.6	628
Mwanza	13.8	383	5.3	480	9.5	863
Mara	11.4	126	9.7	180	10.5	306

Table 13.3 Sex before the age of 15 years (continued)

Percentage of young people aged 15-24 years who reported that they had sexual intercourse before the age of 15 years by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage who had sex before the age of 15 years	Number	Percentage who had sex before the age of 15 years	Number	Percentage who had sex before the age of 15 years	Number
Manyara	19.3	63	6.4	80	13.1	143
Njombe	7.3	164	3.2	217	5.2	381
Katavi	17.1	142	11.1	224	13.7	366
Simiyu	12.6	216	5.5	268	9.0	484
Geita	14.4	211	8.6	256	11.5	467
Songwe	10.5	82	4.3	134	7.0	216
Zanzibar, by island						
Unguja	3.8	137	1.8	164	2.8	301
Pemba	2.0	150	0.6	185	1.3	335
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	5.1	40
Kusini Unguja	*	*	*	*	3.6	35
Mjini Magharibi	2.8	105	1.6	121	2.2	226
Kaskazini Pemba	3.2	63	1.1	94	2.1	157
Kusini Pemba	1.1	87	0.0	91	0.6	178
Marital status						
Never married	12.8	3,566	3.1	2,993	8.8	6,559
Married or living together	11.8	558	9.1	2,453	9.7	3,011
Divorced or separated	22.7	80	9.7	296	13.1	376
Widowed	*	*	*	*	*	*
Education						
No education	16.9	261	19.8	478	18.7	739
Primary	14.1	2,170	7.9	2,779	11.0	4,949
Secondary	11.3	1,681	1.5	2,387	6.0	4,068
More than secondary	6.4	99	0.0	121	3.1	220
Wealth quintile						
Lowest	15.6	996	10.1	1,275	12.8	2,271
Second	12.6	941	7.5	1,181	10.0	2,122
Middle	14.5	959	5.8	1,210	10.1	2,169
Fourth	12.0	725	3.9	1,038	7.6	1,763
Highest	8.3	589	2.1	1,061	4.6	1,650
Age (years)						
15-19	15.3	2,289	5.5	2,759	10.3	5,048
20-24	10.0	1,925	6.3	3,006	8.0	4,931
Total 15-24 years	12.9	4,214	5.9	5,765	9.2	9,979

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 13.4.A Condom use at last sex with a nonmarital, noncohabitating partner: Men

Among men aged 15 years and older, self-reported condom use with nonmarital, noncohabitating partners in the 12 months before the survey by selected demographic characteristics, THIS 2022-2023

Characteristic	Among men who reported having sex in the 12 months before the survey		Among men who reported having sex with a nonmarital, noncohabitating partner	
	Percentage who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey[1]	Number	Percentage who reported using a condom the last time they had sex with a such a partner[2]	Number
Residence				
Urban	46.4	3,665	31.7	1,584
Rural	39.3	8,142	27.3	2,811
Mainland/Zanzibar				
Mainland	42.6	11,253	29.2	4,314
Zanzibar	18.2	554	23.0	81
Mainland, by region				
Dodoma	41.5	676	24.0	259
Arusha	48.8	173	33.4	78
Kilimanjaro	34.1	187	29.3	60
Tanga	40.5	332	21.3	123
Morogoro	44.2	758	26.9	319
Pwani	46.6	307	26.8	137
Dar es Salaam	49.3	641	30.8	312
Lindi	39.9	223	21.7	83
Mtwara	43.9	233	15.5	98
Ruvuma	38.3	397	38.3	137
Iringa	35.5	634	46.6	211
Mbeya	40.0	597	42.7	224
Singida	39.3	413	21.5	150
Tabora	45.7	416	37.7	178
Rukwa	17.4	290	(20.9)	47
Kigoma	34.3	345	17.2	105
Shinyanga	40.8	332	36.8	129
Kagera	39.1	787	28.7	285
Mwanza	49.0	847	29.6	385
Mara	45.3	341	36.8	142
Manyara	45.8	208	17.2	84
Njombe	37.9	571	47.0	198
Katavi	38.4	389	27.7	141
Simiyu	38.7	449	34.7	159
Geita	51.1	412	19.8	198
Songwe	27.9	295	34.5	72
Zanzibar, by island				
Unguja	20.8	280	23.0	54
Pemba	11.6	274	(22.9)	27
Zanzibar, by region				
Kaskazini Unguja	(13.4)	44	*	*
Kusini Unguja	(33.2)	33	*	*

Table 13.4.A Condom use at last sex with a nonmarital, noncohabitating partner: Men (continued)

Among men aged 15 years and older, self-reported condom use with nonmarital, noncohabitating partners in the 12 months before the survey by selected demographic characteristics, THIS 2022-2023

Characteristic	Among men who reported having sex in the 12 months before the survey		Among men who reported having sex with a nonmarital, noncohabitating partner	
	Percentage who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey[1]	Number	Percentage who reported using a condom the last time they had sex with a such a partner[2]	Number
Mjini Magharibi	20.3	203	(22.3)	39
Kaskazini Pemba	10.7	115	*	*
Kusini Pemba	12.3	159	*	*
Marital status				
Never married	97.5	2,242	30.6	2,180
Married or living together	18.9	8,723	27.8	1,470
Divorced or separated	90.3	726	26.6	649
Widowed	90.8	104	24.8	89
Education				
No education	30.9	1,312	19.4	359
Primary	39.3	7,537	26.7	2,642
Secondary	52.1	2,437	35.0	1,162
More than secondary	48.5	513	35.7	230
Wealth quintile				
Lowest	39.5	2,700	24.1	930
Second	37.7	2,728	28.4	921
Middle	40.8	2,678	30.4	958
Fourth	45.7	2,017	32.4	836
Highest	46.8	1,678	30.3	746
Age (years)				
15-19	96.3	721	27.9	688
20-24	76.4	1,523	28.5	1,109
25-29	48.2	1,618	31.1	741
30-34	33.2	1,535	33.7	481
35-39	25.9	1,230	31.0	308
40-44	28.2	1,170	30.9	301
45-49	25.8	1,021	27.4	254
50-54	21.9	888	24.4	186
55-59	19.6	587	27.3	102
60-64	15.1	611	15.0	92
65+	15.0	903	16.3	133
Total 15-24 years	82.8	2,244	28.2	1,797
Total 15-49 years	47.6	8,818	29.8	3,882
Total 50+ years	18.2	2,989	21.8	513
Total 15+ years	41.9	11,807	29.1	4,395

[1] For individuals with more than three partners, having sex with a nonmarital noncohabitating partner is determined using information about the last three partners.
[2] Relates to Global AIDS Monitoring 2022 indicator 3.18: Condom use at last high risk sex.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 13.4.B Condom use at last sex with a nonmarital, noncohabitating partner: Women

Among women aged 15 years and older, self-reported condom use with nonmarital, noncohabitating partners in the 12 months before the survey by selected demographic characteristics, THIS 2022-2023

Characteristic	Among women who reported having sex in the 12 months before the survey		Among women who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey	
	Percentage who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey[1]	Number	Percentage who reported using a condom the last time they had sex with such a partner[2]	Number
Residence				
Urban	31.5	5,167	21.8	1,519
Rural	21.8	9,399	19.9	1,898
Mainland/Zanzibar				
Mainland	26.2	13,886	20.9	3,372
Zanzibar	8.4	680	(15.4)	45
Mainland, by region				
Dodoma	24.7	803	21.7	191
Arusha	24.0	231	12.9	54
Kilimanjaro	28.6	240	14.2	67
Tanga	22.4	399	17.5	86
Morogoro	26.6	983	19.4	257
Pwani	29.4	383	18.0	105
Dar es Salaam	33.9	898	24.2	283
Lindi	33.0	273	11.2	85
Mtwara	36.8	295	16.3	105
Ruvuma	24.9	455	28.2	108
Iringa	23.0	755	27.8	159
Mbeya	28.4	710	21.7	189
Singida	17.7	494	17.4	85
Tabora	22.6	475	23.2	103
Rukwa	11.3	366	(10.3)	40
Kigoma	22.2	433	7.7	92
Shinyanga	23.8	451	40.0	106
Kagera	20.9	866	21.0	178
Mwanza	30.1	1,108	20.4	324
Mara	28.4	408	26.8	115
Manyara	21.3	253	13.5	53
Njombe	26.7	762	28.9	192
Katavi	21.5	465	22.6	95
Simiyu	16.6	527	26.1	88
Geita	32.1	498	21.0	151
Songwe	18.3	355	20.2	61
Zanzibar, by island				
Unguja	10.5	354	(17.0)	36
Pemba	2.9	326	*	*
Zanzibar, by region				
Kaskazini Unguja	(0.0)	48	*	*
Kusini Unguja	34.9	52	*	*

Table 13.4.B Condom use at last sex with a nonmarital, noncohabitating partner: Women (continued)

Among women aged 15 years and older, self-reported condom use with nonmarital, noncohabitating partners in the 12 months before the survey by selected demographic characteristics, THIS 2022-2023

Characteristic	Among women who reported having sex in the 12 months before the survey		Among women who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey	
	Percentage who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey[1]	Number	Percentage who reported using a condom the last time they had sex with such a partner[2]	Number
Mjini Magharibi	7.5	254	*	*
Kaskazini Pemba	2.0	163	*	*
Kusini Pemba	3.9	163	*	*
Marital status				
Never married	91.6	1,600	21.6	1,444
Married or living together	4.8	11,315	23.5	489
Divorced or separated	90.2	1,305	18.2	1,180
Widowed	89.8	336	21.6	300
Education				
No education	15.1	2,388	15.4	332
Primary	24.2	8,781	19.5	1,984
Secondary	35.0	3,017	25.0	974
More than secondary	38.1	368	20.6	123
Wealth quintile				
Lowest	20.8	3,195	16.3	620
Second	21.5	3,149	19.3	627
Middle	24.9	3,129	23.7	718
Fourth	29.8	2,611	23.0	722
Highest	31.8	2,481	20.9	729
Age (years)				
15-19	52.4	1,095	24.4	525
20-24	32.1	2,660	21.0	805
25-29	24.3	2,506	20.2	560
30-34	19.7	2,078	17.9	410
35-39	20.0	1,856	20.9	364
40-44	22.8	1,442	21.3	307
45-49	22.4	1,059	19.2	217
50-54	15.6	825	22.0	129
55-59	10.8	438	(5.3)	45
60-64	10.8	336	(14.3)	35
65+	8.2	271	*	*
Total 15-24 years	38.6	3,755	22.5	1,330
Total 15-49 years	27.3	12,696	21.1	3,188
Total 50+ years	12.5	1,870	16.5	229
Total 15+ years	25.7	14,566	20.8	3,417

[1] For individuals with more than three partners, having sex with a nonmarital noncohabitating partner is determined using information about the last three partners.
[2] Relates to Global AIDS Monitoring 2022 indicator 3.18: Condom use at last high risk sex.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 13.4.C Condom use at last sex with a nonmarital, noncohabitating partner: Total

Among adults aged 15 years and older, self-reported condom use with nonmarital, noncohabitating partners in the 12 months before the survey by selected demographic characteristics, THIS 2022-2023

Characteristic	Among persons who reported having sex in the 12 months before the survey		Among persons who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey	
	Percentage who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey[1]	Number	Percentage who reported using a condom the last time they had sex with a such a partner[2]	Number
Residence				
Urban	38.6	8,832	27.5	3,103
Rural	30.7	17,541	24.7	4,709
Mainland/Zanzibar				
Mainland	34.3	25,139	26.0	7,686
Zanzibar	13.3	1,234	20.5	126
Mainland, by region				
Dodoma	33.1	1,479	23.1	450
Arusha	36.4	404	26.7	132
Kilimanjaro	31.2	427	22.1	127
Tanga	31.4	731	19.9	209
Morogoro	35.1	1,741	24.0	576
Pwani	37.9	690	23.4	242
Dar es Salaam	41.4	1,539	28.0	595
Lindi	36.4	496	16.9	168
Mtwara	40.3	528	15.9	203
Ruvuma	31.8	852	34.4	245
Iringa	29.2	1,389	39.2	370
Mbeya	34.2	1,307	34.0	413
Singida	28.6	907	20.2	235
Tabora	34.5	891	33.0	281
Rukwa	14.3	656	16.5	87
Kigoma	28.1	778	13.3	197
Shinyanga	31.9	783	38.1	235
Kagera	30.3	1,653	26.2	463
Mwanza	39.4	1,955	26.0	709
Mara	37.1	749	33.0	257
Manyara	33.5	461	16.1	137
Njombe	32.0	1,333	39.0	390
Katavi	30.0	854	25.9	236
Simiyu	27.7	976	32.1	247
Geita	41.6	910	20.2	349
Songwe	23.1	650	28.6	133
Zanzibar, by island				
Unguja	15.6	634	20.9	90
Pemba	7.3	600	(18.2)	36
Zanzibar, by region				
Kaskazini Unguja	7.0	92	*	*
Kusini Unguja	34.2	85	(25.4)	28

Table 13.4.C Condom use at last sex with a nonmarital, noncohabitating partner: Total (continued)

Among adults aged 15 years and older, self-reported condom use with nonmarital, noncohabitating partners in the 12 months before the survey by selected demographic characteristics, THIS 2022-2023

Characteristic	Among persons who reported having sex in the 12 months before the survey		Among persons who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey	
	Percentage who reported having sex with a nonmarital, noncohabitating partner in the 12 months before the survey[1]	Number	Percentage who reported using a condom the last time they had sex with a such a partner[2]	Number
Mjini Magharibi	13.9	457	21.0	57
Kaskazini Pemba	5.9	278	*	*
Kusini Pemba	8.4	322	*	*
Marital status				
Never married	95.3	3,842	27.4	3,624
Married or living together	11.5	20,038	26.8	1,959
Divorced or separated	90.3	2,031	21.6	1,829
Widowed	90.1	440	22.4	389
Education				
No education	21.3	3,700	17.7	691
Primary	31.9	16,318	24.0	4,626
Secondary	43.6	5,454	31.0	2,136
More than secondary	44.7	881	30.9	353
Wealth quintile				
Lowest	30.3	5,895	21.4	1,550
Second	29.6	5,877	25.1	1,548
Middle	32.9	5,807	27.9	1,676
Fourth	37.7	4,628	28.7	1,558
Highest	38.8	4,159	26.2	1,475
Age (years)				
15-19	71.8	1,816	26.5	1,213
20-24	51.2	4,183	25.8	1,914
25-29	35.4	4,124	27.0	1,301
30-34	26.3	3,613	27.6	891
35-39	22.9	3,086	26.4	672
40-44	25.5	2,612	26.6	608
45-49	24.2	2,080	23.7	471
50-54	19.1	1,713	23.5	315
55-59	16.1	1,025	21.3	147
60-64	13.5	947	14.8	127
65+	13.4	1,174	15.9	153
Total 15-24 years	57.8	5,999	26.1	3,127
Total 15-49 years	36.9	21,514	26.4	7,070
Total 50+ years	16.1	4,859	20.2	742
Total 15+ years	33.7	26,373	25.9	7,812

[1] For individuals with more than three partners, having sex with a nonmarital noncohabitating partner is determined using information about the last three partners.
[2] Relates to Global AIDS Monitoring 2022 indicator 3.18: Condom use at last high risk sex.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Figure 13.4
Self-reported sex and condom use among adults aged 15 years and older at last sex with a nonmarital, noncohabitating partner in the 12 months before the survey, THIS 2022-2023

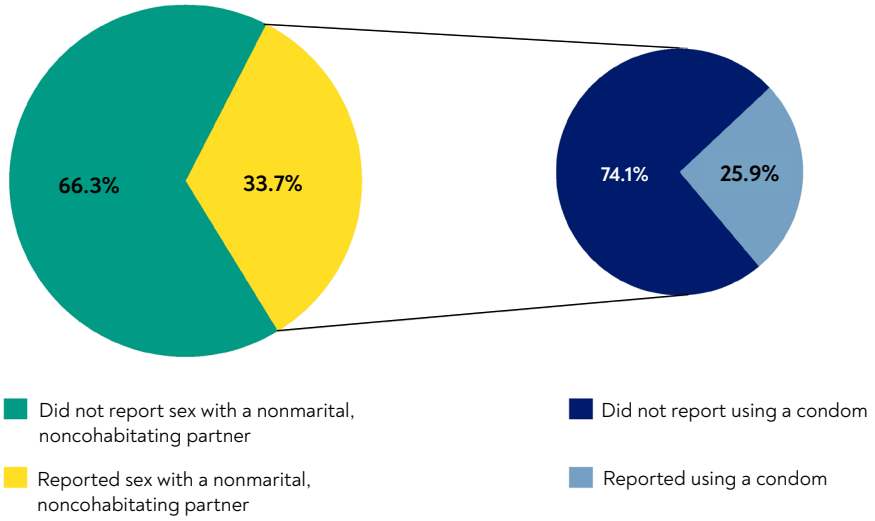

Table 13.5 Male circumcision

Percent distribution of men aged 15 years and older by self-reported circumcision status, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Circumcised[1]		Uncircumcised	Total	Number
	Medical circumcision	Nonmedical circumcision			
Result of THIS 2022-2023-2023 HIV test					
HIV positive	48.5	23.8	27.7	100.0	549
HIV negative	56.8	30.2	13.0	100.0	13,790
Not tested	59.0	33.1	7.8	100.0	1,020
Residence					
Urban	64.9	29.7	5.4	100.0	4,820
Rural	52.0	30.6	17.4	100.0	10,539
Mainland/Zanzibar					
Mainland	56.5	30.0	13.5	100.0	14,442
Zanzibar	62.0	37.2	0.8	100.0	917
Mainland, by region					
Dodoma	49.6	49.3	1.1	100.0	864
Arusha	60.3	37.7	2.0	100.0	250
Kilimanjaro	79.0	19.8	1.3	100.0	272
Tanga	34.2	64.7	1.1	100.0	428
Morogoro	42.9	48.0	9.1	100.0	917
Pwani	41.3	58.7	0.0	100.0	381
Dar es Salaam	64.5	34.4	1.1	100.0	808
Lindi	12.4	86.9	0.7	100.0	282
Mtwara	32.4	65.9	1.7	100.0	286
Ruvuma	51.9	34.1	14.1	100.0	468
Iringa	69.1	10.2	20.7	100.0	849

Table 13.5 Male circumcision (continued)

Percent distribution of men aged 15 years and older by self-reported circumcision status, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Circumcised[1]		Uncircumcised	Total	Number
	Medical circumcision	Nonmedical circumcision			
Mbeya	69.1	7.9	23.0	100.0	783
Singida	62.4	25.3	12.3	100.0	532
Tabora	59.8	17.9	22.3	100.0	490
Rukwa	46.7	3.0	50.3	100.0	359
Kigoma	55.7	29.1	15.1	100.0	467
Shinyanga	64.9	5.2	29.9	100.0	418
Kagera	52.3	21.4	26.3	100.0	1,023
Mwanza	72.5	12.2	15.3	100.0	1,132
Mara	55.3	39.8	4.9	100.0	420
Manyara	54.5	42.5	3.0	100.0	259
Njombe	64.7	8.1	27.2	100.0	756
Katavi	59.0	10.9	30.0	100.0	492
Simiyu	62.8	5.5	31.8	100.0	600
Geita	65.0	11.1	23.9	100.0	532
Songwe	54.2	3.1	42.7	100.0	374
Zanzibar, by island					
Unguja	63.6	35.6	0.7	100.0	462
Pemba	58.1	40.9	1.0	100.0	455
Zanzibar, by region					
Kaskazini Unguja	52.8	47.2	0.0	100.0	64
Kusini Unguja	(75.6)	(21.7)	(2.7)	100.0	48
Mjini Magharibi	63.9	35.5	0.6	100.0	350
Kaskazini Pemba	53.7	45.7	0.6	100.0	193
Kusini Pemba	61.4	37.3	1.3	100.0	262
Marital status					
Never married	66.4	25.5	8.1	100.0	4,784
Married or living together	51.9	32.3	15.8	100.0	9,241
Divorced or separated	48.2	38.4	13.4	100.0	1,005
Widowed	40.9	35.7	23.4	100.0	299
Education					
No education	31.8	37.8	30.4	100.0	1,642
Primary	52.0	32.2	15.8	100.0	9,347
Secondary	71.4	25.6	3.0	100.0	3,756
More than secondary	80.6	18.3	1.1	100.0	600
Wealth quintile					
Lowest	43.3	32.0	24.6	100.0	3,487
Second	50.4	31.4	18.2	100.0	3,588
Middle	56.7	30.2	13.1	100.0	3,493
Fourth	64.4	31.1	4.6	100.0	2,615
Highest	72.7	26.0	1.3	100.0	2,166

Table 13.5 Male circumcision (continued)

Percent distribution of men aged 15 years and older by self-reported circumcision status, by result of THIS 2022-2023 HIV test and selected demographic characteristics, THIS 2022-2023

Characteristic	Circumcised[1]		Uncircumcised	Total	Number
	Medical circumcision	Nonmedical circumcision			
Age (years)					
15-19	64.9	24.2	10.9	100.0	2,467
20-24	65.6	26.8	7.6	100.0	2,033
25-29	64.4	26.1	9.5	100.0	1,804
30-34	62.0	27.4	10.6	100.0	1,643
35-39	57.0	31.8	11.2	100.0	1,316
40-44	50.9	35.6	13.5	100.0	1,266
45-49	46.9	34.4	18.7	100.0	1,114
50-54	47.2	34.9	17.9	100.0	986
55-59	43.1	38.4	18.5	100.0	677
60-64	39.5	37.7	22.7	100.0	728
65+	27.7	44.5	27.8	100.0	1,325
Total 15-24 years	65.2	25.4	9.4	100.0	4,500
Total 15-49 years	60.9	28.2	10.9	100.0	11,643
Total 50+ years	38.6	39.3	22.2	100.0	3,716
Total 15+ years	56.8	30.2	13.0	100.0	15,359

[1] Relates to Global AIDS Monitoring 2022 indicator 3.16: Prevalence of male circumcision and PEPFAR indicator VMMC_TOTALCIRC NAT / SUBNAT: Total number of men ever circumcised.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Figure 13.5
Self-reported male circumcision status among men aged 15 years and older by survey HIV test result, THIS 2022-2023

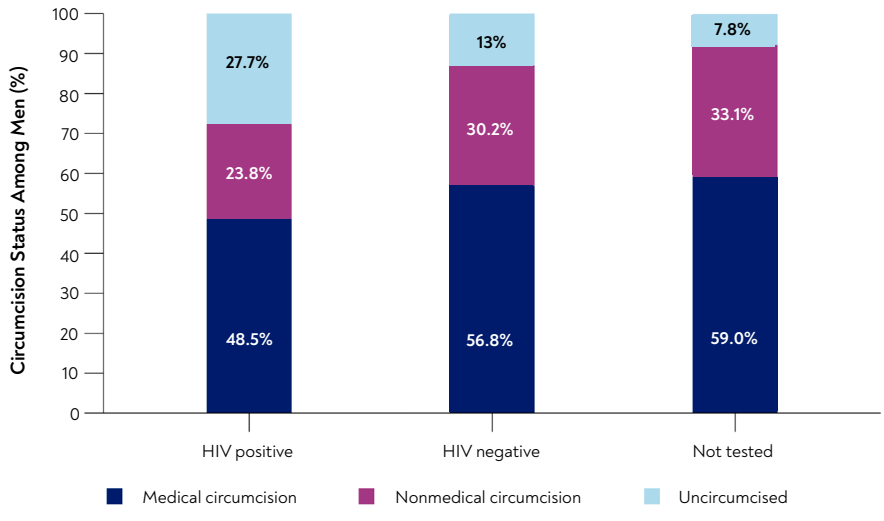

Table 13.6 Self-reported knowledge of pre-exposure prophylaxis

Among adults aged 15 years and older, percentage who reported they had heard of pre-exposure prophylaxis (PrEP), by selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage who had heard of PrEP	Number	Percentage who had heard of PrEP	Number	Percentage who had heard of PrEP	Number
Residence						
Urban	9.1	4,770	7,201	8.8	11,971	
Rural	5.8	10,317	12,870	4.9	23,187	
Mainland/Zanzibar						
Mainland	7.1	14,169	18,971	6.5	33,140	
Zanzibar	4.8	918	1,100	4.1	2,018	
Mainland, by region						
Dodoma	5.4	852	1,160	5.2	2,012	
Arusha	4.5	249	345	5.7	594	
Kilimanjaro	9.8	269	397	7.2	666	
Tanga	7.0	425	544	5.6	969	
Morogoro	8.2	906	1,268	7.0	2,174	
Pwani	6.4	374	540	6.5	914	
Dar es Salaam	10.0	808	1,195	9.3	2,003	
Lindi	3.3	267	358	2.4	625	
Mtwara	5.5	278	403	3.5	681	
Ruvuma	6.7	454	584	6.9	1,038	
Iringa	10.1	844	1,102	9.7	1,946	
Mbeya	8.9	758	1,001	8.2	1,759	
Singida	3.6	518	656	4.3	1,174	
Tabora	6.9	483	595	6.9	1,078	
Rukwa	3.2	351	477	4.0	828	
Kigoma	6.1	463	650	5.3	1,113	
Shinyanga	6.9	413	570	7.3	983	
Kagera	7.4	992	1,207	6.7	2,199	
Mwanza	8.3	1,102	1,453	7.9	2,555	
Mara	11.4	418	599	9.0	1,017	
Manyara	5.4	253	336	5.5	589	
Njombe	8.4	740	1,099	7.1	1,839	
Katavi	4.3	487	597	3.5	1,084	
Simiyu	3.5	579	698	3.5	1,277	
Geita	6.4	515	671	5.6	1,186	
Songwe	8.2	371	466	6.7	837	
Zanzibar, by island						
Unguja	5.0	462	556	4.8	1,018	
Pemba	4.3	456	544	2.6	1,000	
Zanzibar, by region						
Kaskazini Unguja	1.5	64	69	2.2	133	
Kusini Unguja	(8.7)	48	65	7.1	113	
Mjini Magharibi	5.1	350	422	4.9	772	
Kaskazini Pemba	3.3	193	266	1.7	459	
Kusini Pemba	5.0	263	278	3.4	541	

Table 13.6 Self-reported knowledge of pre-exposure prophylaxis (continued)

Among adults aged 15 years and older, percentage who reported they had heard of pre-exposure prophylaxis (PrEP), by selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage who had heard of PrEP	Number	Percentage who had heard of PrEP	Number	Percentage who had heard of PrEP	Number
Marital status						
Never married	6.0	4,683		4,016	6.4	8,699
Married or living together	7.5	9,100		11,737	6.5	20,837
Divorced or separated	8.7	992		2,192	7.5	3,184
Widowed	4.9	286		2,092	4.1	2,378
Education						
No education	2.6	1,582		3,697	2.5	5,279
Primary	5.3	9,176		11,375	5.1	20,551
Secondary	9.2	3,718		4,508	8.8	8,226
More than secondary	23.5	598		471	23.9	1,069
Wealth quintile						
Lowest	4.1	3,396		4,288	3.7	7,684
Second	5.3	3,502		4,445	4.9	7,947
Middle	6.3	3,437		4,387	5.5	7,824
Fourth	7.4	2,592		3,575	7.0	6,167
Highest	12.9	2,151		3,372	11.6	5,523
Age (years)						
15-19	4.0	2,382		2,854	4.5	5,236
20-24	6.7	2,010		3,041	6.6	5,051
25-29	9.0	1,780		2,689	8.1	4,469
30-34	9.6	1,627		2,215	8.3	3,842
35-39	8.0	1,301		2,003	7.9	3,304
40-44	8.4	1,259		1,655	7.4	2,914
45-49	8.8	1,107		1,350	7.2	2,457
50-54	6.9	970		1,231	5.5	2,201
55-59	7.3	664		773	5.6	1,437
60-64	3.6	708		794	4.4	1,502
65+	3.7	1,279		1,466	3.0	2,745
Total 15-24 years	5.3	4,392		5,895	5.5	10,287
Total 15-49 years	7.4	11,466		15,807	6.9	27,273
Total 50+ years	5.3	3,621		4,264	4.4	7,885
Total 15+ years	7.0	15,087		20,071	6.4	35,158

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 13.7 Willingness to take pre-exposure prophylaxis

Among adults aged 15 years and older who are HIV negative, percentage who reported they would take pre-exposure prophylaxis (PrEP) to prevent HIV by selected demographics characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage who would take PrEP	Number	Percentage who would take PrEP	Number	Percentage who would take PrEP	Number
Heard of PrEP						
Yes	59.7	802	49.0	849	54.7	1,651
No	37.1	12,187	33.1	15,826	35.1	28,013
Residence						
Urban	38.5	3,983	35.0	5,805	36.6	9,788
Rural	38.5	9,060	33.2	10,953	35.9	20,013
Mainland/Zanzibar						
Mainland	39.4	12,159	34.7	15,699	37.0	27,858
Zanzibar	18.1	884	16.3	1,059	17.2	1,943
Mainland, by region						
Dodoma	44.5	737	41.4	979	42.9	1,716
Arusha	34.3	209	31.7	273	33.0	482
Kilimanjaro	25.2	243	26.4	334	25.9	577
Tanga	31.4	380	20.2	475	25.6	855
Morogoro	37.0	781	30.6	1,074	33.6	1,855
Pwani	46.7	302	38.2	424	42.2	726
Dar es Salaam	33.2	632	30.3	932	31.7	1,564
Lindi	34.3	222	31.1	295	32.7	517
Mtwara	30.9	244	29.7	342	30.2	586
Ruvuma	32.8	402	39.0	523	36.0	925
Iringa	39.4	690	32.8	854	36.1	1,544
Mbeya	35.5	605	29.6	746	32.5	1,351
Singida	38.2	458	36.9	584	37.5	1,042
Tabora	48.1	415	39.6	494	43.8	909
Rukwa	31.9	316	26.3	409	29.0	725
Kigoma	42.5	418	40.3	585	41.3	1,003
Shinyanga	51.6	364	47.4	468	49.5	832
Kagera	43.4	862	36.2	1,039	39.8	1,901
Mwanza	49.1	961	39.9	1,229	44.5	2,190
Mara	50.4	369	46.1	495	48.2	864
Manyara	30.0	222	28.5	274	29.2	496
Njombe	41.8	605	28.4	820	34.7	1,425
Katavi	37.0	434	31.5	524	34.3	958
Simiyu	45.4	514	42.6	579	44.0	1,093
Geita	38.4	467	34.3	587	36.3	1,054
Songwe	28.6	307	26.0	361	27.3	668
Zanzibar, by island						
Unguja	17.5	437	17.5	529	17.5	966
Pemba	19.4	447	13.5	530	16.4	977
Zanzibar, by region						
Kaskazini Unguja	12.9	58	18.1	62	15.3	120

Table 13.7 Willingness to take pre-exposure prophylaxis (continued)

Among adults aged 15 years and older who are HIV negative, percentage who reported they would take pre-exposure prophylaxis (PrEP) to prevent HIV by selected demographics characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage who would take PrEP	Number	Percentage who would take PrEP	Number	Percentage who would take PrEP	Number
Kusini Unguja	(23.0)	46	33.1	62	28.3	108
Mjini Magharibi	17.5	333	15.0	405	16.3	738
Kaskazini Pemba	19.3	187	12.4	260	15.5	447
Kusini Pemba	19.4	260	14.6	270	17.2	530
Marital status						
Never married	39.6	4,190	37.3	3,471	38.7	7,661
Married or living together	37.3	7,778	33.4	9,973	35.3	17,751
Divorced or separated	45.8	820	40.2	1,690	42.2	2,510
Widowed	24.5	235	20.4	1,600	20.9	1,835
Education						
No education	29.7	1,346	24.0	3,085	25.9	4,431
Primary	38.9	7,928	35.2	9,382	37.0	17,310
Secondary	40.0	3,280	37.2	3,885	38.6	7,165
More than secondary	42.4	478	38.9	392	41.0	870
Wealth quintile						
Lowest	39.1	2,956	32.8	3,636	35.9	6,592
Second	39.7	3,070	33.3	3,745	36.5	6,815
Middle	37.9	2,996	34.7	3,672	36.3	6,668
Fourth	37.1	2,224	33.5	2,932	35.3	5,156
Highest	38.7	1,790	35.3	2,770	36.8	4,560
Age (years)						
15-19	39.0	2,156	37.0	2,541	38.0	4,697
20-24	42.2	1,807	38.2	2,689	40.1	4,496
25-29	41.3	1,528	38.2	2,295	39.7	3,823
30-34	39.6	1,409	37.4	1,813	38.5	3,222
35-39	39.2	1,093	36.3	1,599	37.8	2,692
40-44	41.8	1,044	36.8	1,302	39.3	2,346
45-49	41.1	919	31.8	1,045	36.5	1,964
50-54	37.3	800	26.6	957	32.0	1,757
55-59	31.1	558	23.4	623	27.3	1,181
60-64	29.6	614	20.1	648	24.8	1,262
65+	20.7	1,115	11.9	1,246	15.9	2,361
Total 15-24 years	40.5	3,963	37.6	5,230	39.0	9,193
Total 15-49 years	40.5	9,956	37.1	13,284	38.7	23,240
Total 50+ years	29.2	3,087	19.4	3,474	24.1	6,561
Total 15+ years	38.5	13,043	33.9	16,758	36.2	29,801

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 13.8 Ever taken pre-exposure prophylaxis

Among adults aged 15 years and older who are HIV negative, percentage who reported they had ever taken pre-exposure prophylaxis (PrEP) to prevent HIV by selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage who had ever taken PrEP	Number	Percentage who had ever taken PrEP	Number	Percentage who had ever taken PrEP	Number
Residence						
Urban	7.8	361	6.8	486	7.3	847
Rural	8.2	531	7.1	446	7.8	977
Mainland/Zanzibar						
Mainland	8.0	852	7.1	903	7.6	1,755
Zanzibar	(10.3)	40	(0.0)	29	5.9	69
Mainland, by region						
Dodoma	(9.5)	40	(6.8)	45	8.2	85
Arusha	*	*	*	*	(4.5)	29
Kilimanjaro	*	*	*	*	(0.0)	37
Tanga	(21.0)	28	*	*	14.2	50
Morogoro	3.2	65	8.7	54	5.4	119
Pwani	*	*	(16.3)	32	10.7	56
Dar es Salaam	13.7	57	8.1	78	10.9	135
Lindi	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*
Ruvuma	(14.5)	27	(6.7)	40	10.2	67
Iringa	3.5	68	4.2	72	3.8	140
Mbeya	14.5	50	15.7	54	15.0	104
Singida	*	*	(16.5)	28	(11.8)	44
Tabora	(11.3)	32	(2.7)	37	6.9	69
Rukwa	*	*	*	*	(0.0)	28
Kigoma	*	*	(0.0)	26	2.2	50
Shinyanga	(21.1)	26	(17.7)	38	19.3	64
Kagera	7.8	61	5.0	57	6.5	118
Mwanza	4.0	77	5.7	85	4.8	162
Mara	(8.9)	43	(7.3)	35	8.3	78
Manyara	*	*	*	*	(3.4)	27
Njombe	4.7	50	(6.1)	47	5.3	97
Katavi	*	*	*	*	(5.6)	30
Simiyu	*	*	*	*	(3.0)	41
Geita	(0.0)	29	(3.2)	29	1.4	58
Songwe	*	*	*	*	(10.2)	39
Zanzibar, by island						
Unguja	*	*	*	*	(7.4)	44
Pemba	*	*	*	*	(0.0)	25
Zanzibar, by region						
Kaskazini Unguja	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*

Table 13.8 Ever taken pre-exposure prophylaxis (continued)

Among adults aged 15 years and older who are HIV negative, percentage who reported they had ever taken pre-exposure prophylaxis (PrEP) to prevent HIV by selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage who had ever taken PrEP	Number	Percentage who had ever taken PrEP	Number	Percentage who had ever taken PrEP	Number
Mjini Magharibi	*	*	*	*	(2.8)	34
Kaskazini Pemba	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*
Marital status						
Never married	9.0	249	6.2	245	7.7	494
Married or living together	7.2	570	7.7	546	7.4	1,116
Divorced or separated	10.4	67	5.1	99	7.3	166
Widowed	*	*	(8.3)	40	(9.4)	46
Education						
No education	(8.1)	42	10.3	65	9.4	107
Primary	7.5	422	7.8	430	7.7	852
Secondary	8.9	309	5.3	330	7.2	639
More than secondary	7.5	118	7.3	106	7.4	224
Wealth quintile						
Lowest	6.9	118	6.0	115	6.5	233
Second	9.3	162	9.6	143	9.4	305
Middle	6.2	194	7.6	171	6.8	365
Fourth	9.3	186	8.1	201	8.7	387
Highest	8.2	231	5.3	302	6.7	533
Age (years)						
15-19	6.6	90	5.6	122	6.0	212
20-24	9.7	125	7.2	172	8.3	297
25-29	9.9	136	6.9	174	8.5	310
30-34	10.6	141	6.0	128	8.7	269
35-39	2.6	88	6.6	111	4.6	199
40-44	8.3	91	14.1	66	10.7	157
45-49	5.2	80	(6.1)	49	5.6	129
50-54	(8.6)	43	(4.9)	34	7.3	77
55-59	(10.8)	41	(12.7)	25	11.4	66
60-64	*	*	*	*	(1.7)	41
65+	(2.2)	38	(5.2)	29	3.4	67
Total 15-24 years	8.4	215	6.5	294	7.3	509
Total 15-49 years	8.1	751	7.1	822	7.6	1,573
Total 50+ years	7.2	141	5.5	110	6.5	251
Total 15+ years	8.0	892	6.9	932	7.5	1,824

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

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14.OTHER HEALTH CONDITIONS

14.1 BACKGROUND

People living with HIV are at a heightened risk for acquiring other diseases such as cervical cancer among women, hepatitis B and hepatitis C, and tuberculosis (TB). Common noncommunicable chronic health conditions can also complicate clinical care particularly as people living with HIV age. Finally, the intersectionality of HIV and COVID-19 has put immense strain on health systems. Interactions between to the two infections could also escalate health risks, particularly among people living with undiagnosed advanced HIV, leading to higher morbidity and mortality rates.

Cervical cancer: Women living with HIV are at greater risk of developing cervical cancer due to persistent human papillomavirus (HPV) infections. WHO recommends HPV screening and treatment for all sexually-active women living with HIV.[1] Among women living with HIV, WHO recommends that priority should be given to screening those aged 25-49 years, and that when tools are available to manage women living with HIV aged 50-65 years, those in that age bracket who have never been screened should also be prioritized. THIS 2022-2023 provides population-based rates of screening unavailable from routine clinic data. This chapter presents cervical cancer screening rates by age and sociodemographic characteristics.

Hepatitis B and hepatitis C: HIV and HBV share transmission routes. Concurrent HIV infection often leads to an accelerated progression of hepatitis B to cirrhosis and a rise in liver-disease mortality. Mother-to-child transmission remains the primary source of chronic hepatitis B virus infections in sub-Saharan Africa. In the case of HBV infection, there is a safe and effective vaccine, however, the rollout has been slow in many resource-limited settings. Recently, however, countries have begun to increase vaccination targeting populations at high risk, and some African countries have adopted routine birth dose vaccination. THIS 2022-2023 investigated the prevalence of acute or chronic hepatitis B, vaccination uptake, and the impact of the national hepatitis B vaccination program.

Similarly, in some countries, hepatitis C has been noted among people living with HIV, particularly among those who inject drugs. In the context of HIV coinfection, hepatitis C poses a greater risk of cirrhosis and liver disease-related mortality. THIS 2022-2023 also determined the prevalence of current hepatitis C and the size of the population in need of treatment.

This chapter presents data on the prevalence of acute or chronic hepatitis B and current hepatitis C in adults, by region, sex, age, HIV status, pregnancy status and other socioeconomic and demographic characteristics.

Noncommunicable health conditions: With changes in lifestyle and diet, noncommunicable health conditions, including diabetes, hypertension, heart disease, kidney disease, cancers, lung diseases, and depression or other mental health issues have become increasingly important causes of illness and mortality in many communities in low- and middle-income countries.[2] While it is not clear whether these conditions are more common among people living with HIV, there is some evidence to suggest that people living with HIV may develop these comorbid conditions at younger ages.[3] Regardless, as people live longer with HIV on treatment, their care is more likely to require prevention and/or management of chronic health comorbidities.[4] In order to inform national program planning, THIS 2022-2023 asked both HIV-negative and HIV-positive participants whether they have been told by a doctor or health worker that they have a chronic health condition.

Tuberculosis: The leading cause of death for people living with HIV remains TB.[5] HIV infection increases a person's susceptibility to TB infection and dramatically increases the risk of progression of latent TB to active disease.[6,7] WHO estimates that there were 7,800 (95% CI: 3,800-13,000) TB-related deaths among people living with HIV in Tanzania in 2022.[8]

Information regarding health-seeking behavior and access to services among people living with HIV, particularly for TB health services, can help the HIV program decrease the impact of TB on people living with HIV. This chapter also describes the self-reported uptake of TB services (TB clinic attendance, TB diagnosis, and TB treatment initiation) among people living with HIV in Tanzania. In addition, this chapter presents data on the performance of two of the key collaborative TB/HIV activities recommended by WHO: (1) HIV testing of all of those visiting a TB clinic who are not already aware of their HIV-positive status; and (2) TB symptom screening of all people living with HIV at every HIV clinic visit.[9]

14.2 RESULTS

The following tables report on cervical cancer screening among women living with HIV, the prevalence of hepatitis B and hepatitis C, as well as the uptake of hepatitis B vaccination. The survey also describes self-reported chronic health conditions among all survey participants, the self-reported uptake and delivery of the key TB/HIV services, and the uptake of COVID-19 vaccination.

Table 14.1 Cervical cancer screening among women living with HIV

Among women living with HIV aged 15 years and older, percentage who reported they had ever received a cervical cancer screening test by selected demographic characteristics, THIS 2022-2023

Characteristic	Among women living with HIV		Among women living with HIV who reported they had received a cervical cancer screening test	
	Percentage who reported they had ever received a cervical cancer screening test	Number	Percentage with an abnormal result	Number
Residence				
Urban	41.1	507	2.8	195
Rural	26.6	786	2.2	203
Mainland/Zanzibar				
Mainland	33.1	1,287	2.6	394
Zanzibar	*	*	*	*
Marital status				
Never married	20.8	140	(1.0)	27
Married or living together	33.2	567	0.9	170
Divorced or separated	38.8	290	3.8	106
Widowed	34.0	295	4.9	94
Education				
No education	27.2	239	3.8	64
Primary	34.4	890	2.9	280
Secondary	35.6	154	0.0	51
More than secondary	*	*	*	*
Wealth quintile				
Lowest	22.4	223	(1.9)	45
Second	26.8	300	2.9	83
Middle	31.0	318	1.5	96
Fourth	44.2	274	3.8	105
Highest	41.7	178	2.0	69
Age (years)				
15-19	*	*	*	*
20-24	7.0	66	*	*
25-29	26.5	100	(0.0)	26
30-34	30.9	165	(0.0)	44
35-39	35.9	193	1.5	62
40-44	36.8	185	1.0	63
45-49	37.1	200	5.5	68
50-54	48.3	148	3.7	69
55-59	39.6	80	(4.5)	27

Table 14.1 Cervical cancer screening among women living with HIV (continued)

Among women living with HIV aged 15 years and older, percentage who reported they had ever received a cervical cancer screening test by selected demographic characteristics, THIS 2022-2023

Characteristic	Among women living with HIV		Among women living with HIV who reported they had received a cervical cancer screening test	
	Percentage who reported they had ever received a cervical cancer screening test	Number	Percentage with an abnormal result	Number
60-64	37.0	69	*	*
65+	18.7	64	*	*
Total 15-24 years	6.5	89	*	*
Total 15-49 years	31.3	932	1.9	269
Total 30-49	35.3	743	2.1	237
Total 50+ years	38.5	361	4.0	129
Total 15+ years	33.2	1,293	2.6	398

[1]Relates to Global AIDS Monitoring 2022 indicator 10.8: Cervical cancer screening among women living with HIV and PEPFAR indicator CXCA_SCRN NAT/SUBNAT: Percentage of HIV-positive women on ART screened for cervical cancer.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Characteristics with most data points suppressed due to small sample sizes (denominators below 25) have been omitted to protect participant confidentiality.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

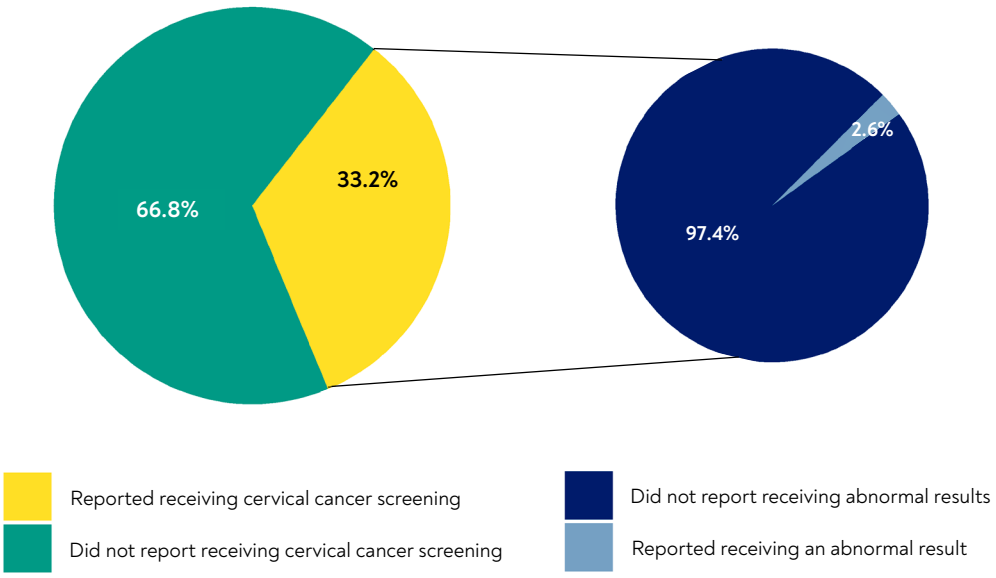

Figure 14.1
Self-reported cervical cancer screening history and abnormal results among women living with HIV (ages 30-49 years), THIS 2022-2023

Table 14.2 Chronic health conditions among adults living with and without HIV

Among adults living with and without HIV aged 15 years and older, percentage indicating that they have ever been told by a doctor or health worker that they have chronic health conditions, by self-reported HIV status and antiretroviral therapy (ART) use (adjusted by detection of an antiretroviral [ARV] in blood), THIS 2022-2023

Chronic health conditions	HIV negative		Unaware of HIV status[1]		Aware of HIV status and not on ART[1]		Aware of HIV status and on ART[1]		Total	
	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number
High blood sugar or diabetes										
Yes	1.0	328	0.4	2	(2.6)	1	0.4	7	0.5	10
No	99.0	31,084	99.6	260	(97.4)	28	99.6	1,525	99.5	1,813
High blood pressure or hypertension										
Yes	3.3	1,187	2.9	10	(2.6)	1	3.4	61	3.3	72
No	96.7	30,225	97.1	252	(97.4)	28	96.6	1,471	96.7	1,751
Heart disease or chronic heart condition										
Yes	0.8	292	0.3	2	(0.0)	0	1.1	16	1.0	18
No	99.2	31,120	99.7	260	(100.0)	29	98.9	1,516	99.0	1,805
Kidney disease										
Yes	0.3	129	1.0	3	(0.0)	0	0.5	7	0.5	10
No	99.7	31,283	99.0	259	(100.0)	29	99.5	1,525	99.5	1,813
Cancer or tumor										
Yes	0.7	276	0.3	1	(0.0)	0	1.2	19	1.0	20
No	99.3	31,136	99.7	261	(100.0)	29	98.8	1,513	99.0	1,803
Lung disease or chronic lung condition										
Yes	0.6	209	0.3	1	(8.0)	1	1.2	21	1.2	23
No	99.4	31,203	99.7	261	(92.0)	28	98.8	1,511	98.8	1,800
Depression or mental health condition										
Yes	0.2	69	0.0	0	(0.0)	0	0.6	8	0.5	8
No	99.8	31,343	100.0	262	(100.0)	29	99.4	1,524	99.5	1,815
Total 15+ years	100.0	31,412	100.0	262	(100.0)	29	100.0	1,532	100.0	1,823

[1] Both awareness of HIV-positive status and on treatment status were based upon self-report or having a detectable ARV in the blood.
( ) Estimates based on a denominator of 25-49 are included in parentheses and should be interpreted with caution.

Table 14.3 Hepatitis B prevalence by demographic characteristics

Prevalence of hepatitis B among adults aged 15 years and older by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage hepatitis B positive	Number	Percentage hepatitis B positive	Number	Percentage hepatitis B positive	Number
Residence						
Urban	4.2	4,299	2.4	6,588	3.3	10,887
Rural	4.6	9,927	2.9	12,449	3.7	22,376
Mainland/Zanzibar						
Mainland	4.5	13,339	2.8	17,989	3.6	31,328
Zanzibar	3.7	887	0.8	1,048	2.3	1,935
Mainland, by region						
Dodoma	4.7	793	2.3	1,087	3.4	1,880
Arusha	2.8	217	2.6	298	2.7	515
Kilimanjaro	3.3	256	2.2	370	2.7	626
Tanga	5.5	403	2.8	513	4.1	916
Morogoro	5.1	835	4.4	1,175	4.7	2,010
Pwani	2.5	323	2.4	477	2.4	800
Dar es Salaam	3.9	656	2.6	1,008	3.2	1,664
Lindi	3.4	240	2.5	339	3.0	579
Mtwara	2.3	263	1.5	381	1.8	644
Ruvuma	3.0	448	1.1	579	2.0	1,027
Iringa	4.0	782	1.8	1,052	2.8	1,834
Mbeya	3.8	716	1.4	955	2.5	1,671
Singida	4.2	494	2.7	649	3.4	1,143
Tabora	4.1	452	1.9	559	3.0	1,011
Rukwa	9.0	339	5.0	453	6.9	792
Kigoma	5.5	452	3.4	639	4.3	1,091
Shinyanga	6.4	402	3.9	562	5.1	964
Kagera	4.3	997	2.7	1,196	3.5	2,193
Mwanza	5.5	1,056	3.1	1,411	4.2	2,467
Mara	4.2	398	4.2	566	4.2	964
Manyara	3.7	236	1.3	289	2.4	525
Njombe	4.2	716	2.9	1,084	3.5	1,800
Katavi	5.9	460	4.0	580	4.9	1,040
Simiyu	4.8	554	3.0	682	3.9	1,236
Geita	6.6	518	3.1	668	4.8	1,186
Songwe	4.7	333	3.6	417	4.2	750
Zanzibar, by island						
Unguja	4.7	440	0.6	525	2.7	965
Pemba	1.3	447	1.4	523	1.4	970
Zanzibar, by region						
Kaskazini Unguja	9.9	61	1.9	60	6.3	121
Kusini Unguja	(4.2)	48	0.0	62	2.0	110
Mjini Magharibi	3.9	331	0.5	403	2.2	734
Kaskazini Pemba	1.8	186	0.7	251	1.2	437
Kusini Pemba	0.9	261	2.2	272	1.5	533

Table 14.3 Hepatitis B prevalence by demographic characteristics (continued)

Prevalence of hepatitis B among adults aged 15 years and older by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage hepatitis B positive	Number	Percentage hepatitis B positive	Number	Percentage hepatitis B positive	Number
Marital status						
Never married	1.9	4,466	1.2	3,785	1.6	8,251
Married or living together	5.9	8,513	3.3	11,083	4.5	19,596
Divorced or separated	6.0	940	3.1	2,096	4.1	3,036
Widowed	4.6	279	2.5	2,041	2.8	2,320
Education						
No education	5.3	1,523	3.1	3,623	3.8	5,146
Primary	4.7	8,722	3.0	10,807	3.9	19,529
Secondary	3.4	3,464	1.7	4,178	2.5	7,642
More than secondary	5.6	506	1.8	411	4.1	917
Wealth quintile						
Lowest	5.0	3,280	2.8	4,152	3.9	7,432
Second	4.2	3,372	3.1	4,289	3.6	7,661
Middle	3.9	3,269	2.4	4,227	3.1	7,496
Fourth	4.2	2,398	2.9	3,326	3.5	5,724
Highest	5.1	1,898	2.2	3,039	3.5	4,937
Pregnancy status						
Currently pregnant	NA	NA	2.9	1,340	NA	NA
Not currently pregnant	NA	NA	2.7	17,562	NA	NA
Result of THIS 2022-2023 HIV test						
HIV positive	7.7	549	5.5	1,283	6.2	1,832
HIV negative	4.3	13,677	2.5	17,754	3.4	31,431
Age (years)						
15-24	1.6	4,216	0.7	5,602	1.2	9,818
25-34	5.7	3,126	4.1	4,556	4.9	7,682
35-49	7.4	3,391	4.5	4,720	5.9	8,111
15-49	4.5	10,733	2.8	14,878	3.6	25,611
50+	4.2	3,493	2.1	4,159	3.1	7,652
Total 15+ years	4.4	14,226	2.7	19,037	3.5	33,263

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.

Table 14.4 Hepatitis B vaccination by demographic characteristics

Among adults aged 15 years and older, the percentage who have been vaccinated against hepatitis B by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage vaccinated for hepatitis B	Number	Percentage vaccinated for hepatitis B	Number	Percentage vaccinated for hepatitis B	Number
Residence						
Urban	1.5	4,794	1.3	7,247	1.4	12,041
Rural	0.5	10,437	0.3	13,068	0.4	23,505
Mainland/Zanzibar						
Mainland	0.8	14,323	0.7	19,230	0.7	33,553
Zanzibar	1.6	908	1.1	1,085	1.3	1,993
Mainland, by region						
Dodoma	0.7	861	0.5	1,161	0.6	2,022
Arusha	2.1	249	1.1	347	1.6	596
Kilimanjaro	3.4	269	1.7	400	2.4	669
Tanga	0.9	426	0.6	539	0.7	965
Morogoro	1.1	911	0.4	1,269	0.7	2,180
Pwani	0.4	368	0.3	547	0.4	915
Dar es Salaam	2.2	800	1.8	1,193	2.0	1,993
Lindi	0.0	267	0.0	354	0.0	621
Mtwara	0.0	287	0.2	406	0.1	693
Ruvuma	0.8	456	0.5	585	0.6	1,041
Iringa	0.4	846	0.8	1,114	0.6	1,960
Mbeya	0.6	775	0.6	1,041	0.6	1,816
Singida	0.4	526	0.0	684	0.2	1,210
Tabora	0.0	487	0.5	604	0.3	1,091
Rukwa	0.5	360	0.0	487	0.2	847
Kigoma	0.2	467	0.8	660	0.5	1,127
Shinyanga	0.7	414	0.4	582	0.5	996
Kagera	0.4	1,024	0.8	1,233	0.6	2,257
Mwanza	1.0	1,127	0.9	1,499	1.0	2,626
Mara	0.6	412	0.2	597	0.4	1,009
Manyara	0.3	256	1.4	335	0.9	591
Njombe	0.1	747	0.7	1,120	0.5	1,867
Katavi	0.3	492	0.2	603	0.2	1,095
Simiyu	0.2	597	0.9	727	0.6	1,324
Geita	0.0	531	0.3	681	0.2	1,212
Songwe	0.0	368	0.4	462	0.2	830
Zanzibar, by island						
Unguja	1.8	457	1.2	549	1.5	1,006
Pemba	1.1	451	0.9	536	1.0	987
Zanzibar, by region						
Kaskazini Unguja	0.0	64	0.0	69	0.0	133
Kusini Unguja	(0.0)	46	0.0	65	0.0	111
Mjini Magharibi	2.3	347	1.6	415	1.9	762
Kaskazini Pemba	1.1	191	0.7	261	0.9	452
Kusini Pemba	1.2	260	1.0	275	1.1	535

Table 14.4 Hepatitis B vaccination by demographic characteristics (continued)

Prevalence of hepatitis B among adults aged 15 years and older by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage hepatitis B positive	Number	Percentage hepatitis B positive	Number	Percentage hepatitis B positive	Number
Marital status						
Never married	0.5	4,728	0.6	4,049	0.6	8,777
Married or living together	1.1	9,170	0.8	11,866	0.9	21,036
Divorced or separated	0.4	1,004	0.6	2,205	0.5	3,209
Widowed	1.6	301	0.5	2,160	0.6	2,461
Education						
No education	0.0	1,631	0.1	3,834	0.1	5,465
Primary	0.3	9,267	0.4	11,480	0.4	20,747
Secondary	1.0	3,721	1.0	4,518	1.0	8,239
More than secondary	7.5	598	7.5	462	7.5	1,060
Wealth quintile						
Lowest	0.1	3,457	0.2	4,390	0.1	7,847
Second	0.3	3,561	0.2	4,518	0.2	8,079
Middle	0.4	3,458	0.3	4,430	0.3	7,888
Fourth	0.9	2,597	0.9	3,597	0.9	6,194
Highest	2.9	2,148	2.1	3,375	2.5	5,523
Pregnancy status						
Currently pregnant	NA	NA	0.4	1,440	NA	NA
Not currently pregnant	NA	NA	0.7	18,731	NA	NA
Result of THIS 2022-2023 HIV test						
HIV positive	0.8	546	0.5	1,283	0.6	1,829
HIV negative	0.7	13,674	0.6	17,781	0.7	31,455
Not tested	2.7	1,011	1.9	1,251	2.3	2,262
Age (years)						
15-24	0.2	4,448	0.4	5,952	0.3	10,400
25-34	1.1	3,422	0.7	4,933	0.9	8,355
35-49	1.2	3,681	1.0	5,045	1.1	8,726
15-49	0.8	11,551	0.7	15,930	0.7	27,481
50+	1.2	3,680	0.9	4,385	1.0	8,065
Total 15+ years	0.8	15,231	0.7	20,315	0.8	35,546

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 14.5 Hepatitis C prevalence by demographic characteristics

Prevalence of hepatitis C among adults aged 15 years and older, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage hepatitis C positive	Number	Percentage hepatitis C positive	Number	Percentage hepatitis C positive	Number
Residence						
Urban	0.1	4,299	0.2	6,588	0.2	10,887
Rural	0.2	9,926	0.1	12,449	0.1	22,375
Mainland/Zanzibar						
Mainland	0.2	13,338	0.1	17,989	0.1	31,327
Zanzibar	0.1	887	0.1	1,048	0.1	1,935
Mainland, by region						
Dodoma	0.0	793	0.0	1,087	0.0	1,880
Arusha	0.0	217	0.0	298	0.0	515
Kilimanjaro	0.0	256	0.0	370	0.0	626
Tanga	0.3	403	0.2	513	0.2	916
Morogoro	0.3	835	0.1	1,175	0.2	2,010
Pwani	0.0	323	0.0	477	0.0	800
Dar es Salaam	0.0	656	0.2	1,008	0.1	1,664
Lindi	0.5	240	0.0	339	0.2	579
Mtwara	0.0	263	0.2	381	0.1	644
Ruvuma	0.0	448	0.0	579	0.0	1,027
Iringa	0.0	782	0.1	1,052	0.0	1,834
Mbeya	0.3	716	0.3	955	0.3	1,671
Singida	0.0	494	0.0	649	0.0	1,143
Tabora	0.0	452	0.0	559	0.0	1,011
Rukwa	0.4	339	0.0	453	0.2	792
Kigoma	0.0	452	0.1	639	0.1	1,091
Shinyanga	0.0	402	0.2	562	0.1	964
Kagera	0.1	997	0.3	1,196	0.2	2,193
Mwanza	0.7	1,056	0.3	1,411	0.5	2,467
Mara	0.0	398	0.5	566	0.3	964
Manyara	0.0	236	0.0	289	0.0	525
Njombe	0.0	715	0.1	1,084	0.1	1,799
Katavi	0.0	460	0.0	580	0.0	1,040
Simiyu	0.0	554	0.0	682	0.0	1,236
Geita	0.7	518	0.3	668	0.5	1,186
Songwe	0.0	333	0.0	417	0.0	750
Zanzibar, by island						
Unguja	0.2	440	0.0	525	0.1	965
Pemba	0.0	447	0.2	523	0.1	970
Zanzibar, by region						
Kaskazini Unguja	0.0	61	0.0	60	0.0	121
Kusini Unguja	(0.0)	48	0.0	62	0.0	110
Mjini Magharibi	0.2	331	0.0	403	0.1	734
Kaskazini Pemba	0.0	186	0.0	251	0.0	437
Kusini Pemba	0.0	261	0.5	272	0.2	533

Table 14.5 Hepatitis C prevalence by demographic characteristics (continued)

Prevalence of hepatitis B among adults aged 15 years and older by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Men		Women		Total	
	Percentage hepatitis C positive	Number	Percentage hepatitis C positive	Number	Percentage hepatitis C positive	Number
Marital status						
Never married	0.0	4,466	0.1	3,785	0.0	8,251
Married or living together	0.2	8,513	0.1	11,083	0.2	19,596
Divorced or separated	0.1	939	0.3	2,096	0.2	3,035
Widowed	0.4	279	0.3	2,041	0.4	2,320
Education						
No education	0.1	1,523	0.2	3,623	0.2	5,146
Primary	0.2	8,721	0.2	10,807	0.2	19,528
Secondary	0.2	3,464	0.0	4,178	0.1	7,642
More than secondary	0.2	506	0.0	411	0.1	917
Wealth quintile						
Lowest	0.2	3,280	0.1	4,152	0.1	7,432
Second	0.2	3,371	0.2	4,289	0.2	7,660
Middle	0.2	3,269	0.1	4,227	0.1	7,496
Fourth	0.1	2,398	0.2	3,326	0.1	5,724
Highest	0.1	1,898	0.2	3,039	0.1	4,937
Pregnancy status						
Currently pregnant	NA	NA	0.1	1,340	NA	NA
Not currently pregnant	NA	NA	0.1	17,562	NA	NA
Result of THIS 2022-2023 HIV test						
HIV positive	0.4	548	0.5	1,283	0.5	1,831
HIV negative	0.1	13,677	0.1	17,754	0.1	31,431
Age (years)						
15-24	0.0	4,216	0.0	5,602	0.0	9,818
25-34	0.1	3,125	0.1	4,556	0.1	7,681
35-49	0.2	3,391	0.2	4,720	0.2	8,111
15-49	0.1	10,732	0.1	14,878	0.1	25,610
50+	0.4	3,493	0.5	4,159	0.4	7,652
Total 15+ years	0.2	14,225	0.1	19,037	0.1	33,262

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

Table 14.6 HIV testing in tuberculosis clinics

Among adults aged 15 years and older who reported visiting a tuberculosis (TB) clinic in the 12 months before the survey, percentage who reported that they were tested for HIV during a TB clinic visit in that period, by sex and self-reported TB diagnosis, THIS 2022-2023

Characteristic	Tested for HIV during a TB clinic visit in the 12 months before the survey	Not tested for HIV during a TB clinic visit in the 12 months before the survey		Total	Number
		Already knew they were HIV positive	Did not know their status		
Sex					
Men	61.7	3.1	35.2	100.0	356
Women	59.2	7.3	33.4	100.0	524
TB diagnosis in the 12 months before the survey					
Diagnosed with TB	75.9	3.3	20.8	100.0	124
Not diagnosed with TB	57.9	5.8	36.4	100.0	752
Total 15+ years	60.4	5.4	34.2	100.0	880

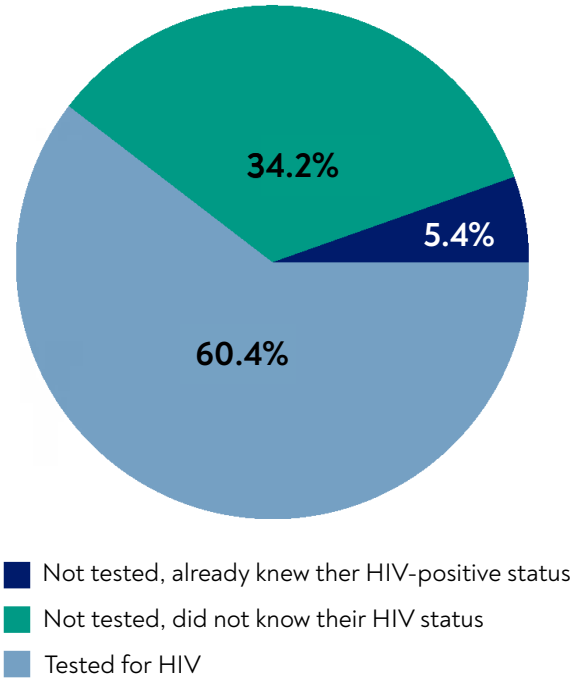

Figure 14.6
Self-reported receipt of HIV testing in tuberculosis clinics among adults (ages 15 years and older) in the 12 months before the survey, THIS 2022-2023

Table 14.7 Self-reported tuberculosis clinic attendance and services among adults living with HIV

Among self-reported adults living with HIV aged 15 years and older, percentage who reported that they had visited a tuberculosis (TB) clinic in the 12 months before the survey; among those who visited a TB clinic during that period, percentage who were diagnosed for TB; and among those diagnosed with TB in that period, percentage who reported receiving treatment for TB, by sex and selected demographic characteristics, THIS 2022-2023

Characteristic	Among adults living with HIV		Among adults living with HIV who visited a TB clinic in the 12 months before the survey		Among adults living with HIV diagnosed with TB in the 12 months before the survey	
	Percentage who visited a TB clinic in the 12 months before the survey	Number	Percentage diagnosed with TB in the 12 months before the survey	Number	Percentage treated for TB in the 12 months before the survey	Number
Sex						
Men	15.3	442	17.2	71	*	*
Women	15.1	1,096	8.5	143	*	*
Residence						
Urban	17.5	545	7.9	87	*	*
Rural	13.5	993	14.5	127	*	*
Mainland/Zanzibar						
Mainland	15.2	1,532	11.3	214	*	*
Zanzibar	*	*	*	*	*	*
Age (years)						
15-24	8.9	66	*	*	*	*
25-34	13.1	267	(3.2)	35	*	*
35-44	15.9	440	12.4	65	*	*
45-54	15.4	453	12.3	58	*	*
55-64	14.0	205	(13.5)	26	*	*
65+	22.5	107	*	*	*	*
Pregnancy status						
Currently pregnant	(17.1)	37	*	*	*	*
Not currently pregnant	15.0	1,057	8.9	138	*	*
Total 15-24 years	8.9	66	*	*	*	*
Total 15-49 years	14.1	1,019	12.5	136	*	*
Total 50+ years	17.2	519	9.2	78	*	*
Total 15+ years	15.1	1,538	11.3	214	*	*

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.
Note: Characteristics with most data points suppressed due to small sample sizes (denominators below 25) have been omitted to protect participant confidentiality.

Table 14.8 Tuberculosis symptom screening in HIV clinics

Among self-reported adults living with HIV aged 15 years and older currently in HIV care, percentage who reported that they were screened for tuberculosis (TB) symptoms during their last HIV clinic visit, by sex, THIS 2022-2023

Characteristic	Percentage screened for TB symptoms[1]	Number
Sex		
Men	54.4	416
Women	53.1	1,049
Total 15+ years	53.5	1,465

[1] TB symptoms included persistent cough, fever, night sweats, and weight loss.

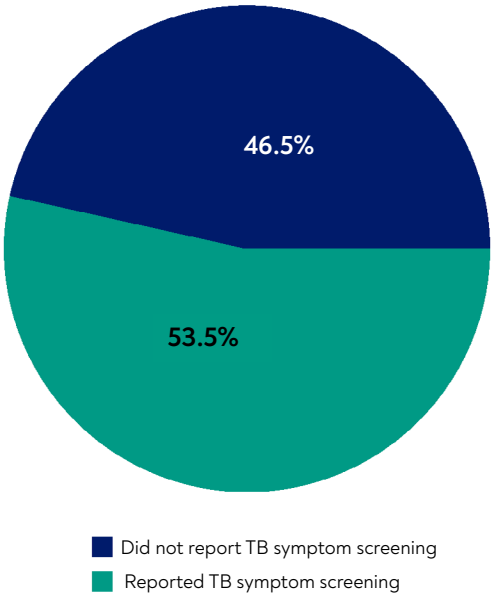

Figure 14.8
Tuberculosis symptom screening at last HIV care-related clinic visit among adults living with HIV (ages 15 years and older) based on self-report, THIS 2022-2023

Abbreviation: TB, tuberculosis.

14.3 REFERENCES

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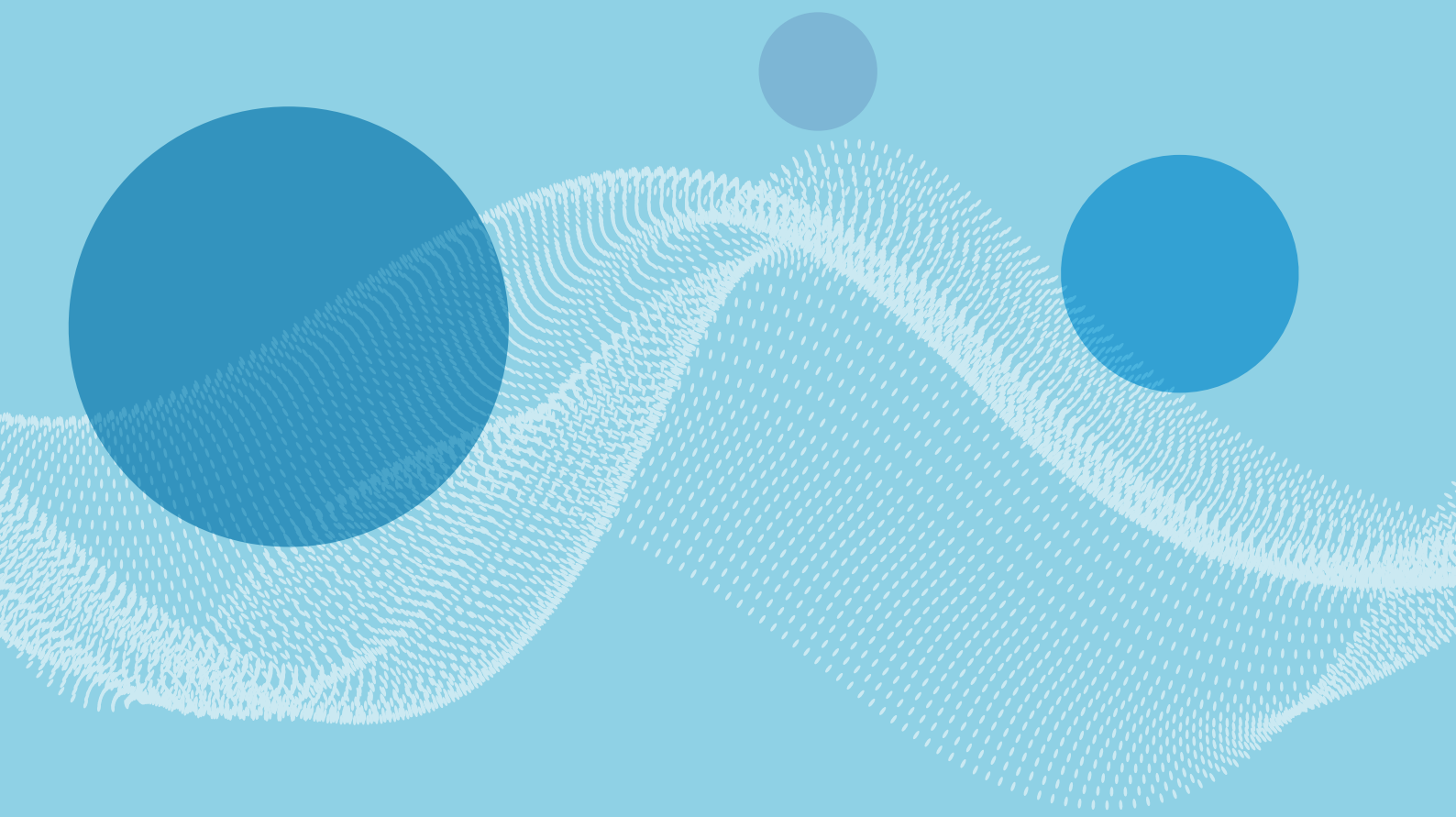


APPENDICES

APPENDIX A SAMPLE DESIGN AND IMPLEMENTATION

Appendix A provides a high-level overview of sampling and weighting procedures for THIS 2022-2023. In-depth details are provided in the THIS 2022-2023 Sampling and Weighting Technical Report, which may be found on the PHIA Project website.

A.1 SAMPLE DESIGN

Overview

THIS 2022-2023 is a household-based, cross-sectional survey targeting individuals aged 15 year and older. It used a two-stage cluster sampling approach: first selecting census enumeration areas (EAs) and then households within each EA. The sampling frame included all EAs of Tanzania based on the 2022 Population and Housing Census data obtained from Tanzania National Bureau of Statistics (NBS).

EA selection was informed by regional HIV prevalence, regional proportion of HIV viral load suppression (VLS), and regional population size. In the first stage, EAs (clusters) were selected using a probability proportional to size (PPS) method, stratified by geographical regions. Because HIV prevalence varies widely across Tanzania's 31 regions (from below 0.2% to over 11%), regions were divided into three priority tiers based on regional HIV prevalence to ensure accurate data collection:

- High Priority: Prevalence 6% and above
- Intermediate Priority: Prevalence between 3% and 5.9%
- Low Priority: Prevalence less than 3%

Three regions with large populations (Morogoro, Dodoma, and Dar es Salaam), were included in the High Priority tier due to the large number of adults living with HIV not achieving HIV VLS. Additionally, the five low HIV-prevalence regions in Zanzibar were grouped into two distinct categories by island, Pemba and Unguja, to streamline the survey process (refer to Precision Specifications and Assumptions).

Within each tier, the PPS method was applied separately to select EAs, ensuring that regions with similar HIV prevalence were sampled proportionately.

Population of Inference

The population of inference for the THIS 2022-2023 is comprised of the de facto household population. The de facto population is comprised of individuals who were present in households (ie, slept in the household) on the night prior to the household interview—as opposed to the usual residents of the household who may not have slept there the night before the survey.

Precision Specifications and Assumptions

The following specifications were used to develop the sample design for the THIS 2022-2023:

- Relative standard error (RSE) of the national estimate of HIV incidence among adults aged 15-49 years should be 30% or less.

To estimate the proportion of people living with HIV with VLS at the regional level, the following modifications were made to the sampling design strategy:

- In the High Priority tier, the cluster sample size was selected to measure a 95% confidence interval (CI) of HIV VLS of +/-10% in each region, totaling in 288 clusters in this tier.
- In the Intermediate Priority tier, the cluster sample size was selected to measure a 95% CI of HIV VLS of +/- 20% in each region, totaling in 195 clusters in this tier.
- In the Low Priority tier, a minimum sample of 12 EAs in each stratum was chosen in order to estimate HIV prevalence with a 95% CI of +/- 1.2% in each geography.

The following assumptions were used to develop the sample design for the THIS 2022-2023:

- National HIV prevalence rate of 4.7% for adults aged 15-49 years, varying by region (see Table 2.2);[1]
- Annual national incidence rate for adults aged 15-49 of P_a= 0.24%;[1]
- Stratum-level incidence rates of P_{ah}, h = 1, 2, …, 28, which were obtained by adjusting the national incidence rate using the regional prevalence rates as follows:

$$P_{ah} = (P_h / P)\, P_a,$$

  where P_h and P are the HIV prevalence rates for province h and the country, respectively, and P_a is the annual national incidence rate; [1]
- Mean duration of recent infection (MDRI) of 130 days, yielding an annualization rate of 365/130= 2.8077;
- Estimated incidence rate for MDRI = 130 days of P_m= 0.0024/2.8077 = 0.0855% and the corresponding regional estimates are obtained as $P_{mh} = P_{ah}$ /2.8077;
- Viral load suppression rate among adults living with HIV aged 15-49 of P_{VLS} = 50% in each stratum, which results in a conservative estimate of the underlying population variance associated with VLS rate;
- Intracluster correlation (ICC) of 0.0545 for VLS and 0.003 for prevalence, informed by THIS 2016-2017 data;
- ICC of 0.000 for incidence, in accordance with prior PHIA surveys);
- Overall age distribution; [1] and
- Regional population distribution obtained from NBS.

Selection of the Primary Sampling Units

In THIS 2022-2023, the primary sampling units, PSUs, were EAs defined by NBS. The first stage sample in THIS 2022-2023 was selected from a sampling frame of EAs created and updated by NBS for the 2022 Tanzania Population and Housing Census. The updated sampling frame included 104,188 EAs, and 14,966,262 households.

A stratified sample of 567 EAs was selected from the updated EA sampling frame. The following procedure was used to select the EAs for THIS 2022-2023. Within each stratum, the EAs in the updated sampling frame were sorted in the same way they had been sorted in the THIS 2016-2017 frame to the extent feasible, ie, by region code, district code, council code, constituency code, division code, ward code, village code, and EA number. The sorting of EAs prior to sample selection induces an implicit geographic substratification within each stratum.

EAs were selected with probabilities proportionate to a measure of size (MOS) equal to the estimated number of households in the EA in 2019. To select the sample from a given region, the cumulative MOS was determined for each EA in the ordered list of EAs, and the sample selections were designated using a random start and a sampling interval equal to the total MOS of the EAs in the stratum divided by the number of EAs to be selected. The resulting sample has the property that the probability of selecting an EA within a stratum is proportional to the MOS of the EA.

Following recommendations by NBS, there was no need to replace any EAs found to have been selected previously for THIS 2016-2017. One of the 567 EAs was out-of-scope PSU with no households because it was designated as a wildlife management area, leaving 566 EAs in the sampling frame.

Selection of Households

For both sampling and analysis purposes, a household was 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 was referred to as the dwelling unit, which may have contained more than one household meeting the above definition. Households were eligible for participation in the study if they were located within the sampled EA.

The selection of households for the THIS 2022-2023 involved the following steps: (1) listing all the potentially eligible dwelling units/households within the sampled EAs; (2) assigning eligibility codes to the listed dwelling unit/household records; (3) and selecting the samples of dwelling units/households. A description of the household listing process as well as a summary of household eligibility may be found in the THIS 2022-2023 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 28 strata of Tanzania, 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 could have yielded more or less than the desired number of households in EAs where the sampling MOS differs from the actual listing count. The THIS 2022-2023 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.

Selection of Individuals

The selection of individuals for the THIS 2022-2023 involved compiling a list (the household roster) of all individuals known to reside in the household or who slept in the household during the night prior to data collection. Those who met the eligibility requirements (individuals aged 15 years and older who slept in the household the night before) were offered survey enrollment. Only eligible individuals who were able to provide verbal informed consent/assent to participate in the survey were retained for subsequent weighting and analysis.

The THIS 2022-2023 Sampling and Weighting Technical Report provides a brief description of the process for listing and selecting individuals for participation in the THIS 2022-2023 and 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 (eg, 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 THIS 2022-2023, nonresponse could have occurred 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, noncoverage 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 were used to calibrate the weighted sample counts to available population projections.

Methods

The overall weighting approach for THIS 2022-2023 included several steps. Methods and results for each of the steps below are detailed in the THIS 2022-2023 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 established at this point. This step was implemented immediately after the PSU sample was 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 (ie, weighting up) to 2020 population projections.

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 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.

A.3 REFERENCES

1. Tanzania Commission for AIDS (TACAIDS), Zanzibar AIDS Commission (ZAC). Tanzania HIV Impact Survey (THIS) 2016-2017: Final Report. Dar es Salaam, Tanzania. December 2018.

APPENDIX B HIV, HEPATITIS B, AND HEPATITIS C VIRUS TESTING METHODOLOGY

B.1 SPECIMEN COLLECTION AND HANDLING

Qualified survey staff collected blood from consenting participants: approximately 14 mL of venous blood or 1 mL of capillary blood using finger-stick from individuals who either refused to give venous blood or for whom venous blood draw failed.

Blood samples were labeled with a unique barcoded 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 DBS and frozen within 24 hours of blood collection at -20° Celsius. Plasma and DBS samples were regularly transferred to the main reference laboratory for repository storage at -80° Celsius.

B.2 HOUSEHOLD-BASED PROCEDURES

HIV Rapid Testing

HIV HBTC was conducted in each household in accordance with National HIV Rapid Testing Algorithm (Figure B.1). The survey used a sequential rapid-testing algorithm in the field.

SD Bioline™ HIV-1/2 (Standard Diagnostics, Inc., Gyeonggi-do, South Korea) was used as a screening test and Uni-Gold™ (Trinity Biotech, plc., Wicklow, Ireland) as a confirmatory test. Individuals with a nonreactive result on the screening test were reported as HIV negative. Individuals with a reactive screening test underwent subsequent testing with Uni-Gold™. Those with reactive results on both the screening and confirmatory tests were reported as HIV positive. Individuals with a reactive SD Bioline™ test followed by a nonreactive Uni-Gold™ test were classified as inconclusive: In such situations, the first and second test were repeated using the same sample (modified for survey purposes from the national guidelines which indicate, 'inconclusive result repeat test from the beginning using a different sample'). Persistent inconclusive results on the repeat tests were classified as inconclusive and the individuals were informed that they may be in a period of acute HIV infection and referred to a facility of their choice to go for a repeat HIV test after 14 days as per the national guidelines.

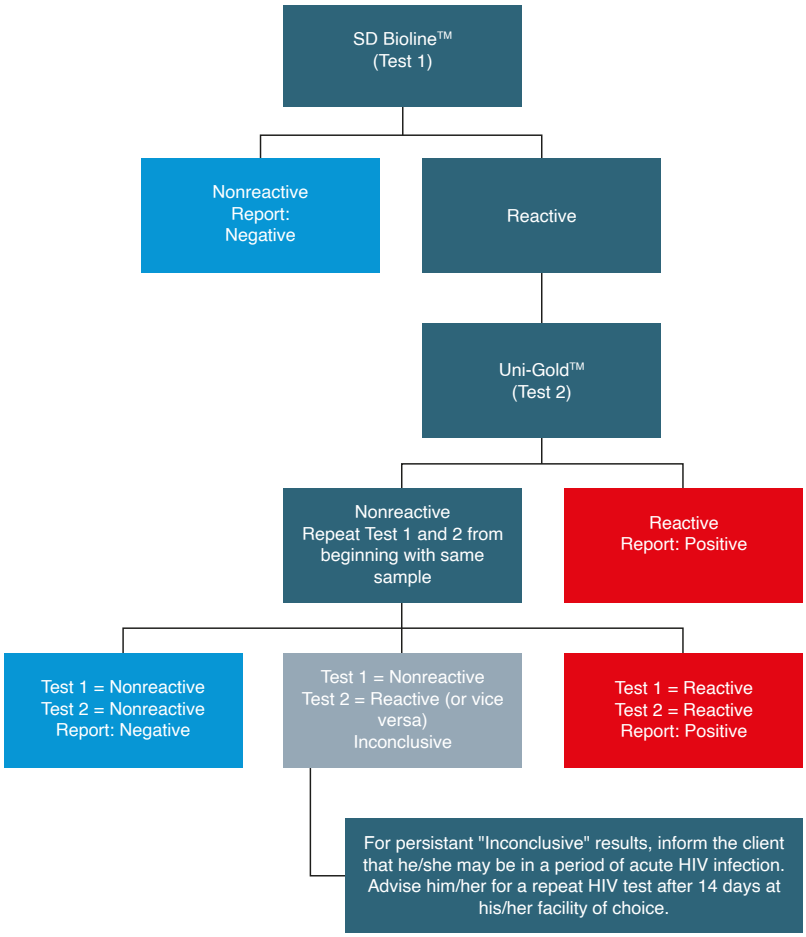


Figure B.1
Household-based HIV testing algorithm, THIS 2022-2023

Counseling, Referral to Care

Pre- and post-test counseling were conducted in each household in accordance with Tanzania's national guidelines. Survey staff communicated results directly to participants aged 15 years or older. Although parental consent was required for their participation in the survey, adolescents aged 15-17 years could receive their HIV testing results without their parents being present, unless requested by the minor.

All participants who consented to HIV testing were asked to select a referral health facility prior to testing. Those with an HIV-positive test result were referred to HIV care and treatment at the health facility of their choice and, if they consented, they could have their viral load and CD4 results returned to the facility. Further, participants who tested HIV positive and reported not being on ART were counseled on the possibility of receiving active linkage to a clinic for ART, care and support (ALTC), and asked for their consent to share their contact information with a trained healthcare worker or counselor to facilitate ALTC at their chosen health facility. Upon consent, an ALTC form was filled out and sent to the health care provider to facilitate linkage to care. Those who did not consent were given an MoH Referral Form to a health facility of their choice, but their contact information was not shared with health facilities or organizations conducting ALTC.

All survey staff, healthcare workers, and counselors participating in linkage to care were trained in confidentiality procedures and detailed procedures on active linkage to care. This included eligibility for linkage to care, how contact information should be shared with the linkage to care coordinator, and documentation of linkage to care.

If a person who self-reported an HIV-positive status tested HIV negative in the survey, additional testing was performed at the satellite and main reference laboratory to confirm their status (see below). Once the participant's status was confirmed, survey staff returned to the household after consultation with the MOH to share the results and provide counseling to these participants. In other rare cases where participants were provided an incorrect HIV test result 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 and laboratory staff performing HIV testing conducted QC testing of a panel of HIV-positive and HIV-negative DTS on a biweekly basis.

To assure the quality of the performance of field staff conducting HIV testing, proficiency testing was conducted once during training and once during delivery of the survey, using a panel of masked HIV-positive and HIV-negative DTS. Additionally, sample re-testing was conducted at the satellite laboratory for the first 25 samples tested by each field staff member. Proficiency in the correct performance and interpretation of the HIV testing algorithm was assessed for each tester.

A limitation of the survey was the limited potential of rapid tests to detect low levels of HIV antibodies among people within the serological window of infection, and in HIV-positive patients on ART. Participants in these two categories were not expected to be a significant source of bias.

B.3 LABORATORY-BASED PROCEDURES

Twenty-nine satellite laboratories (13 stationary and 16 mobile labs) for the survey were established nationally for management of field supplies, interim storage of samples and biological waste management. One main reference laboratory was chosen for sample processing and long-term storage at -80° C and more specialized tests by trained laboratory specialists. At each satellite laboratory, trained laboratory technologists performed HIV confirmatory testing, Pima CD4 testing, QA testing, QA discrepancy resolution, and processing of whole blood specimens into plasma aliquots and DBS cards for storage at -20° C.

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, California, United States) (Figure B.2). Testing was conducted at the satellite laboratory in accordance with the manufacturer-specified protocol.

HIV-1 Total Nucleic Acid (TNA) Polymerase Chain Reaction (PCR)

HIV-1 TNA PCR was evaluated for participants who 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.2). HIV TNA PCR was conducted using the COBAS® AmpliPrep/COBAS® TaqMan® HIV-1 Qualitative Test v2.0 (Roche Molecular Systems, Inc., Branchburg, New Jersey) at the main reference laboratory, located at Bugando Medical Center in accordance with the manufacturer-specified protocol.

Classification of Final HIV Status

The algorithm for classification of final HIV status included results from HIV rapid testing, Geenius testing, and HIV TNA PCR (Figure B.2).

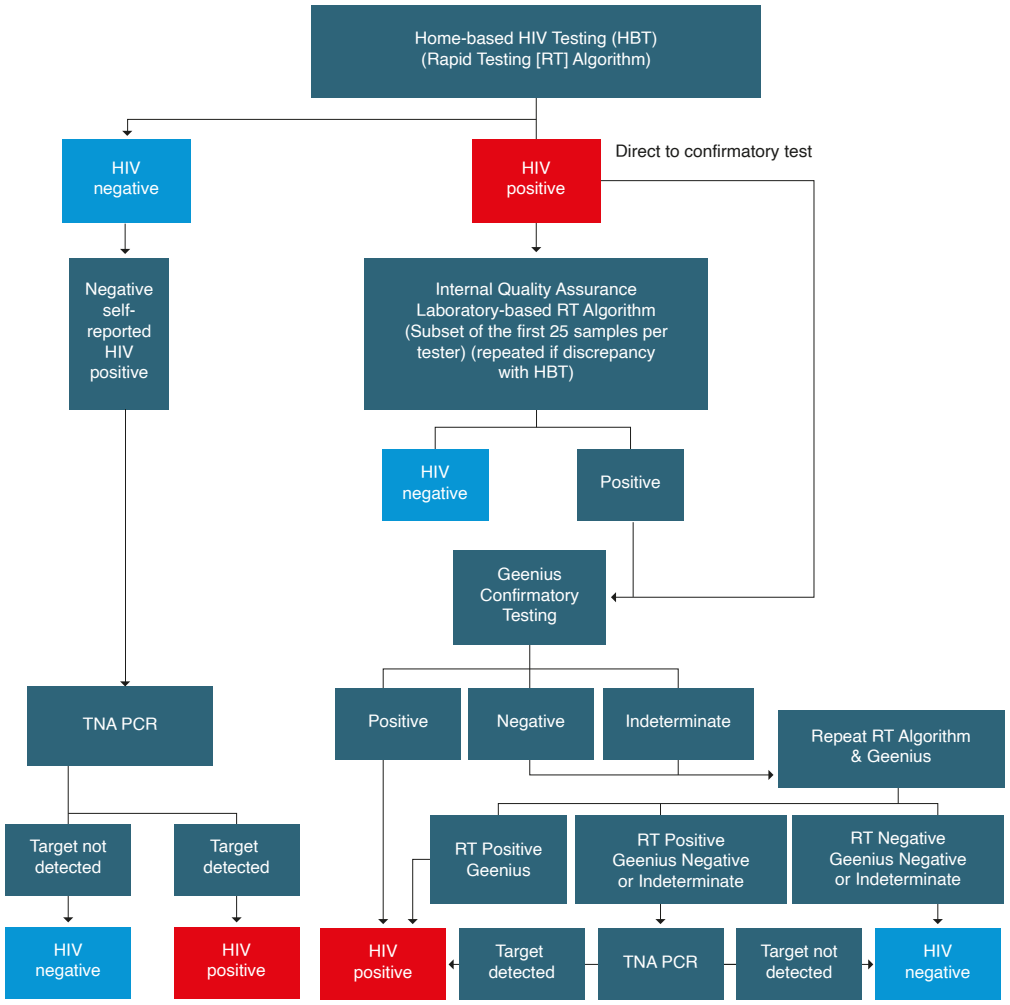


Figure B.2
Final HIV Status Classification Algorithm, THIS 2022-2023

Abbreviations: TNA PCR, Total Nucleic Acid polymerase chain reaction.

Classification of final HIV status was used to determine estimates for HIV prevalence and to inform estimates for HIV incidence.

CD4 Count Measurement

Blood samples from the participants who tested HIV positive underwent CD4 count measurement at the satellite laboratory. The measurement was performed using the Pima™ CD4 Analyzer (Abbott Laboratories, Chicago, Illinois, United States, formerly Alere).

Viral Load Testing

The HIV-1 viral load (HIV RNA copies per mL) of all HIV-positive participants with plasma samples was measured using the COBAS AmpliPrep/Taqman 96 assay on the COBAS AmpliPrep/COBAS TaqMan (CAP/CTM) HIV-1, v2.0 Test (Roche Molecular Diagnostics, Branchburg, New Jersey, United States). In cases where plasma samples were not available, HIV-1 viral load was performed on dried blood spot (DBS) samples using the COBAS AmpliPrep/COBAS TaqMan (CAP/CTM) Free Virus Elution (FVE) Protocol (Roche Molecular Diagnostics, Branchburg, New Jersey, United States). The COBAS AmpliPrep/TaqMan HIV-1 is a nucleic acid amplification test for the quantification of HIV Type 1 (HIV-1) RNA in human plasma or dried blood spots. Specimen preparation was automated using COBAS AmpliPrep with amplification and detection using TaqMan.

Return of Results

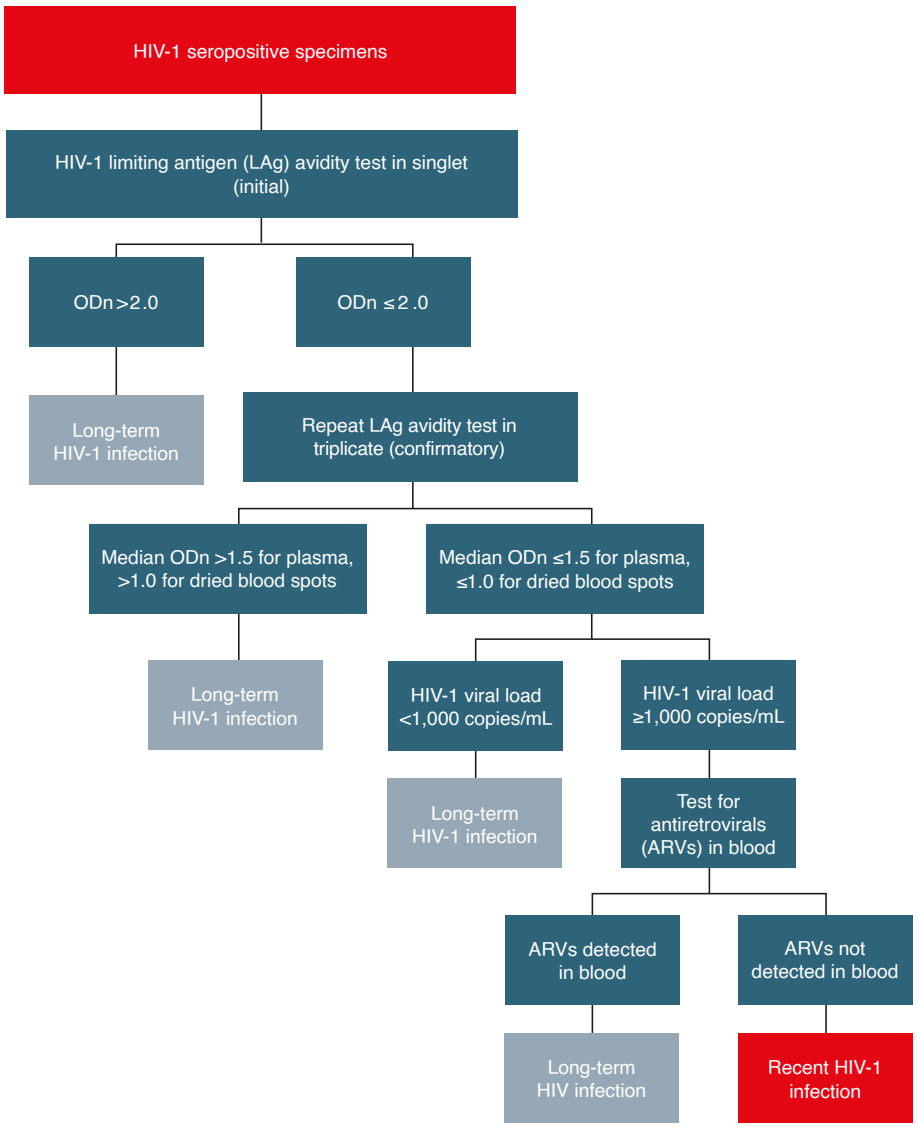
The return of results coordinator delivered CD4 and viral load results within 8 to 12 weeks, and hepatitis test results within 8-16 weeks to the health facility chosen by each HIV-positive participant. HIV-positive participants were provided with the MoH Referral Form during HBTC for subsequent retrieval of their results. Survey staff also contacted each participant via mobile phones, informing them that their viral load results were available at the chosen facility and further advising them to seek care and treatment.

HIV Recency Testing

To distinguish recent from long-term HIV infections, and to estimate annual HIV-1 incidence, the survey used a laboratory-based testing algorithm that employed a combination of assays: an HIV-1 LAg avidity assay, HIV viral load, and ARV detection.

HIV-1 LAg avidity assay testing was performed on specimens from everyone who tested HIV-positive in the survey. The Sedia HIV-1 LAg-Avidity EIA (Sedia Biosciences Corporation, Portland, Oregon, United States) was used on plasma specimens, while the Maxim HIV-1 LAg-Avidity Dried Blood Spot (DBS) EIA (Maxim Biomedical, Bethesda, Maryland, United States) was used on DBS specimens. The LAg testing protocol required the assay to be performed twice: the initial screening test, followed by a confirmatory test in triplicate for specimens suggesting recent infection. Specimens with an ODn value ≤2.0 during initial testing were confirmed by further testing of the sample in triplicate. Plasma specimens with median ODn ≤ 1.5 and DBS specimens with median ODn ≤ 1.0 were classified as preliminary recent infections and their viral load results were assessed. Those with viral load < 1,000 copies/mL were classified as long-term infections, while those with viral load ≥ 1,000 copies/mL were classified as potential recent infections.

Figure B.3
HIV-1 Recent Infection Testing Algorithm, THIS 2022-2023



Abbreviations: mL: milliliter; ODn: normalized optical density; ARVs: antiretrovirals.

HIV Incidence Estimation

Incidence estimation was based on the number of recent HIV infections identified using the HIV-1 LAg avidity assay, combined with viral load and ARV detection. The estimates were then calculated using the formula recommended by the WHO Incidence Working Group and Consortium for Evaluation and Performance of Incidence Assays.[1] Weighted counts for HIV-negative persons (N); HIV-positive persons (P); numbers tested on the LAg assay (Q); and numbers HIV recent (R) were provided for use in incidence calculations or the UNAIDS Spectrum models (Table B.1). Incidence estimates were calculated using the following parameters: mean duration recent infection = 130 days (95% CI: 118-142 days); proportion false recent = 0.00; and time cutoff = 1 year. In-depth details are provided in the THIS 2022-2023 Technical Report, which may be found online on the PHIA Project website.

Table B.1 Annual HIV incidence auxiliary data: N, P, Q, R, MDRI, PFR, and T

Annual incidence of HIV among adults aged 15-49 years and 15 years and older, by sex and age, using the recent infection testing algorithm (limiting antigen plus viral load plus antiretroviral biomarker testing), THIS 2022-2023

Age (years)	Number HIV negative[1] (N)	Number HIV positive[1] (P)	Number tested on LAg assay[1] (Q)	Number HIV recent[1] (R)
		Men		
15-24	4,216.9	25.1	25.1	0.0
25-34	3,104.7	60.3	60.3	2.4
35-49	3,239.7	186.3	184.9	2.1
50+	3,326.6	211.4	211.4	0.8
Total 15-49 years	10,574.6	258.4	257.0	4.4
Total 15+ years	13,933.1	437.9	436.5	5.4
		Women		
15-24	5,588.1	73.9	73.9	6.6
25-34	4,401.5	217.5	217.5	5.0
35-49	4,265.4	517.6	517.6	3.1
50+	3,888.8	339.2	337.8	0.0
Total 15-49 years	14,305.8	758.2	758.2	15.0
Total 15+ years	18,212.1	1,079.9	1,078.7	15.6
		Total		
15-24	9,808.4	95.6	95.6	6.1
25-34	7,521.1	262.9	262.9	7.2
35-49	7,534.3	674.7	673.0	5.2
50+	7,217.9	548.1	546.7	0.9
Total 15-49 years	24,921.7	975.3	973.8	18.5
Total 15+ years	32,188.3	1,474.7	1,472.0	20.3

[1] Weighted number.
Note: mean duration recent infection (MDRI) = 130 days (95% CI: 118-142 days); proportion false recent (PFR) = 0.00; time cutoff (T) = 1 year.

Detection of Antiretrovirals

Qualitative screening for detectable concentrations of ARVs was conducted on DBS specimens from all HIV-positive participants 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.[2] 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, California, United States). Each ARV was detected using an API 4000 LC/MS/MS instrument (Applied Biosystems, Foster City, California, United States). Internal standards and in-house QC cut-off samples, including negative controls, were utilized in each run.

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. Samples with concentrations above 0.02 µg/mL were considered positive for each ARV. As detection of all ARVs in use at the time of the survey was cost-prohibitive, four ARVs (dolutegravir, efavirenz, atazanavir, and lopinavir) were selected as markers for the most prescribed first- and second-line regimens. These ARVs were also selected based on their relatively long half-lives, allowing for a longer period of detection following intake.

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

Genotyping for Detection of Antiretroviral Drug Resistance and HIV Subtyping

HIV resistance to ARVs was assessed for all HIV-positive participants, including recent cases, those without VLS (≥1,000 copies/mL; both on treatment and not on treatment), and those with a viral load of 200-999 copies/mL. The findings will be released separately.

Hepatitis B Testing Methodology

Hepatitis B virus (HBV) testing utilized plasma samples. Participants who only provided a 1 mL tube or a 4 mL tube did not have their specimens tested for HBV. Screening for HBV infection was conducted using the Abbott architect Ci4100 to detect antibodies to hepatitis B core antigen (anti-HBc). Samples testing positive for anti-HBc underwent further testing for hepatitis B surface antigen (HBsAg) using the SD Bioline HBsAg rapid test. Any invalid results were repeated once, and those that remained invalid were escalated for root cause investigation. Participants testing positive for anti-HBc and negative for HBsAg were considered to have past or resolved infection, while those positive for both anti-HBc and HBsAg were reported as having acute or chronic hepatitis B. These results were sent to the health facility chosen by the participants for further management.

Hepatitis C Testing Methodology

Hepatitis C virus (HCV) testing also utilized plasma samples. Screening for HCV antibodies was conducted using the SD Bioline HCV antibody test. Invalid tests were repeated once, with persistent invalid results escalated for root cause investigation. Participants with a positive HCV antibody test underwent diagnostic HCV RNA (HCV viral load) quantitative PCR using the Roche COBAS AmpliPrep/ Taqman 96 assay for confirmation. Additionally, HCV viral load testing was performed for HIV-positive participants with CD4 counts less than 200 cells/mm^3, even if they tested negative for HCV antibodies. Participants with a detectable HCV viral load were reported as positive for current hepatitis C, and their results were sent to their chosen health facility for further management.

Laboratory Staff Training and Quality Control for Hepatitis B and Hepatitis C Testing

Laboratory staff received training to perform these tests in accordance with manufacturers guidelines and survey specific standard operating procedures. QC panels were regularly conducted by each staff member performing the tests, with results recorded on a QC Log Form.

B.4 REFERENCES

1. World Health Organization. *WHO Working Group on HIV Incidence Measurement and Data Use*. Geneva: WHO; 2018. https://apps.who.int/iris/bitstream/handle/10665/272940/WHO-CDS-HIV-18.9-eng.pdf. Accessed August 30, 2023.

2. Koal T, Burhenne H, Römling R, Svoboda M, Resch K, Kaever V. Quantification of antiretroviral drugs in dried blood spot samples by means of liquid chromatography/tandem mass spectrometry. Rapid Commun Mass Spectrom. 2005;19(21):2995-3001. doi:10.1002/rcm.2158.

APPENDIX C ESTIMATES OF SAMPLING ERRORS

Estimates from sample surveys are affected by two types of errors: nonsampling errors and sampling errors. Nonsampling errors result from mistakes made during data collection (eg, misinterpretation of an HIV test result) and data management (eg, transcription errors in data entry). While THIS 2022-2023 implemented numerous QA and QC measures to minimize nonsampling 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 THIS 2022-2023 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 (eg, 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% of all possible samples of identical size and design.

THIS 2022-2023 utilized a multistage 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 (eg, HIV prevalence), rates (eg, annual HIV incidence), and counts (eg, numbers of people living with HIV). To take account of the precision benefits of implicit stratification as fully as possible, the sampled PSUs within each sampling stratum were paired off in the systematic order in which they were selected, treating each pair as a variance-estimation stratum. To fully reflect the sample design, the formation of the variance-estimation strata was applied to all 566 of the sampled PSUs.

Each replication considered all but one cluster in the calculation of the estimates. Pseudo-independent replications were thus created. In THIS 2022-2023, a jackknife replicate was created by randomly deleting one cluster from each variance-estimation stratum and retaining all the clusters in the remaining strata. A total of 277 variance-estimation strata were created by pairing (or occasionally tripling) the sample clusters in the systematic order in which they had been selected. Hence, 277 replications were created. The variance of a sample-based statistic, y, was calculated as follows:

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

where y is the full-sample estimate, and yk 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 variance using the given sample design to the variance 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 variance due to the use of a more complex and less statistically efficient design. Confidence limits for the estimates, which are calculated as

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

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 THIS 2022-2023 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% confidence limits.

Table C.1 : Annual HIV incidence by age, THIS 2022-2023

Age (years)	Weighted estimate (%)	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Men			
15-24	0.00	-	-	-	0.00	0.25
25-34	0.22	0.14	1.06	0.65	0.00	0.49
35-49	0.19	0.13	1.09	0.71	0.00	0.45
50+	0.07	0.08	0.84	1.09	0.00	0.22
Total 15-49 years	0.12	0.06	1.05	0.49	0.01	0.23
Total 15+ years	0.11	0.05	1.07	0.45	0.01	0.20
			Women			
15-24	0.33	0.13	1.18	0.40	0.07	0.60
25-34	0.32	0.14	1.04	0.45	0.03	0.60
35-49	0.20	0.13	1.22	0.63	0.00	0.45
50+	0.00	-	-	-	0.00	0.27
Total 15-49 years	0.29	0.08	1.19	0.28	0.13	0.46
Total 15+ years	0.24	0.07	1.23	0.28	0.11	0.37
			Total			
15-24	0.17	0.07	1.08	0.41	0.03	0.31
25-34	0.27	0.10	1.06	0.38	0.07	0.47
35-49	0.19	0.09	1.17	0.47	0.01	0.38
50+	0.03	0.04	0.87	1.07	0.00	0.11
Total 15-49 years	0.21	0.05	1.10	0.25	0.11	0.31
Total 15+ years	0.18	0.04	1.15	0.24	0.09	0.26

Table C.2 Sampling errors: HIV prevalence by age, THIS 2022-2023

Ages	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
				Men			
15-19	0.3	2,346	0.1	0.9	0.3	0.1	0.6
20-24	0.9	1,896	0.3	2.4	0.4	0.2	1.6
25-29	1.8	1,645	0.3	1.2	0.2	1.1	2.5
30-34	2.1	1,520	0.3	0.7	0.1	1.4	2.7
35-39	4.0	1,201	0.6	1.2	0.2	2.7	5.3
40-44	6.1	1,184	0.7	1.0	0.1	4.7	7.5
45-49	6.6	1,041	0.9	1.3	0.1	4.8	8.4
50-54	8.4	930	1.0	1.2	0.1	6.4	10.5
55-59	5.9	645	1.0	1.1	0.2	3.9	7.9
60-64	6.3	691	1.0	1.1	0.2	4.3	8.3
65+	3.7	1,272	0.6	1.2	0.2	2.5	4.9
Total 15-24 years	0.6	4,242	0.2	1.8	0.3	0.3	0.9
Total 15-49 years	2.4	10,833	0.2	1.3	0.1	2.0	2.7
Total 50+ years	6.0	3,538	0.4	1.2	0.1	5.1	6.9
Total 15+ years	3.0	14,371	0.2	1.2	0.1	2.7	3.4

Table C.2 Sampling errors: HIV prevalence by age, THIS 2022-2023 (continued)

Ages	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Women				
15-19	0.8	2,759	0.2	1.2	0.2	0.4	1.2
20-24	1.8	2,903	0.3	1.0	0.1	1.3	2.3
25-29	3.2	2,530	0.4	1.3	0.1	2.4	4.0
30-34	6.6	2,089	0.6	1.3	0.1	5.3	7.8
35-39	9.0	1,894	0.7	1.3	0.1	7.5	10.5
40-44	11.2	1,574	1.0	1.6	0.1	9.1	13.2
45-49	13.0	1,315	1.0	1.2	0.1	10.9	15.1
50-54	11.6	1,184	1.1	1.5	0.1	9.3	13.9
55-59	10.2	754	1.4	1.6	0.1	7.3	13.1
60-64	8.1	789	1.1	1.2	0.1	6.0	10.3
65+	4.3	1,501	0.5	1.0	0.1	3.2	5.4
Total 15-24 years	1.3	5,662	0.2	1.1	0.1	1.0	1.6
Total 15-49 years	5.0	15,064	0.2	1.5	0.0	4.6	5.5
Total 50+ years	8.0	4,228	0.6	1.8	0.1	6.9	9.2
Total 15+ years	5.6	19,292	0.2	1.7	0.0	5.1	6.0
			Total				
15-19	0.6	5,105	0.1	1.1	0.2	0.4	0.8
20-24	1.4	4,799	0.2	1.5	0.1	1.0	1.8
25-29	2.5	4,175	0.3	1.3	0.1	2.0	3.1
30-34	4.4	3,609	0.4	1.1	0.1	3.7	5.1
35-39	6.6	3,095	0.5	1.3	0.1	5.6	7.7
40-44	8.7	2,758	0.6	1.4	0.1	7.4	10.0
45-49	9.9	2,356	0.7	1.2	0.1	8.5	11.3
50-54	10.1	2,114	0.8	1.6	0.1	8.4	11.7
55-59	8.1	1,399	0.9	1.5	0.1	6.3	9.9
60-64	7.2	1,480	0.7	1.1	0.1	5.8	8.7
65+	4.0	2,773	0.4	1.2	0.1	3.2	4.9
Total 15-24 years	1.0	9,904	0.1	1.3	0.1	0.7	1.2
Total 15-49 years	3.8	25,897	0.1	1.5	0.0	3.5	4.1
Total 50+ years	7.1	7,766	0.4	1.9	0.1	6.2	7.9
Total 15+ years	4.4	33,663	0.2	1.9	0.0	4.1	4.7

Table C.3 Sampling errors: HIV prevalence by residence and region, THIS 2022-2023

Characteristic	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Men				
Residence							
Urban	3.35	4,369	0.26	0.92	0.08	2.81	3.89
Rural	2.88	10,002	0.20	1.43	0.07	2.46	3.29
Mainland/Zanzibar							
Mainland	3.16	13,474	0.17	1.20	0.05	2.82	3.50
Zanzibar	0.27	897	0.20	1.35	0.75	0.00	0.68
Mainland, by Region							
Dodoma	1.28	800	0.51	1.65	0.40	0.23	2.33
Arusha	0.44	220	0.45	0.99	1.01	0.00	1.36
Kilimanjaro	2.79	261	0.65	0.40	0.23	1.45	4.12
Tanga	2.39	405	1.06	1.95	0.44	0.20	4.57
Morogoro	2.80	839	0.50	0.76	0.18	1.78	3.82
Pwani	3.23	332	0.64	0.44	0.20	1.91	4.56
Dar es Salaam	2.33	667	0.50	0.74	0.22	1.30	3.36
Lindi	1.02	247	0.76	1.40	0.74	0.00	2.59
Mtwara	1.30	267	0.41	0.35	0.32	0.45	2.14
Ruvuma	3.86	452	0.78	0.74	0.20	2.26	5.46
Iringa	7.48	785	1.08	1.33	0.15	5.24	9.71
Mbeya	7.52	727	0.98	1.00	0.13	5.51	9.54
Singida	2.29	494	0.84	1.55	0.37	0.56	4.02
Tabora	4.54	454	1.19	1.48	0.26	2.09	6.98
Rukwa	2.32	347	0.91	1.27	0.39	0.45	4.20
Kigoma	1.32	452	0.84	2.45	0.64	0.00	3.05
Shinyanga	3.43	407	0.54	0.36	0.16	2.31	4.55
Kagera	4.80	1,003	1.02	2.27	0.21	2.70	6.89
Mwanza	3.44	1,062	0.59	1.09	0.17	2.23	4.64
Mara	2.72	405	1.14	1.99	0.42	0.37	5.08
Manyara	1.34	237	1.16	2.40	0.87	0.00	3.73
Njombe	8.57	723	0.96	0.86	0.11	6.58	10.55
Katavi	3.11	466	0.50	0.39	0.16	2.07	4.15
Simiyu	2.66	558	0.80	1.36	0.30	1.02	4.30
Geita	4.16	525	0.95	1.18	0.23	2.21	6.11
Songwe	4.49	339	1.18	1.09	0.26	2.07	6.92
Zanzibar, by Island							
Unguja	0.23	447	0.24	1.16	1.06	0.00	0.73
Pemba	0.36	450	0.36	1.62	1.00	0.00	1.09
Zanzibar, by Region							
Kaskazini Unguja		62					
Kusini Unguja		48					
Mjini Magharibi	0.30	337	0.33	1.20	1.08	0.00	0.98
Kaskazini Pemba		187					
Kusini Pemba	0.62	263	0.64	1.75	1.04	0.00	1.93

Table C.3 Sampling errors: HIV prevalence by residence and region, THIS 2022-2023 (continued)

Characteristic	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Women				
Residence							
Urban	6.47	6,708	0.42	1.98	0.07	5.60	7.34
Rural	5.02	12,584	0.23	1.42	0.05	4.55	5.50
Mainland/Zanzibar							
Mainland	5.78	18,211	0.23	1.72	0.04	5.32	6.25
Zanzibar	0.58	1,081	0.25	1.18	0.43	0.06	1.10
Mainland, by Region							
Dodoma	4.45	1,098	0.65	1.09	0.15	3.12	5.79
Arusha	5.19	304	1.78	1.94	0.34	1.53	8.85
Kilimanjaro	5.01	381	2.67	5.68	0.53	0.00	10.50
Tanga	3.38	515	0.65	0.66	0.19	2.05	4.71
Morogoro	3.64	1,182	0.66	1.45	0.18	2.29	4.99
Pwani	6.04	485	1.57	2.09	0.26	2.81	9.27
Dar es Salaam	5.94	1,034	0.49	0.44	0.08	4.93	6.95
Lindi	4.01	340	1.28	1.45	0.32	1.37	6.65
Mtwara	4.10	387	0.83	0.68	0.20	2.39	5.81
Ruvuma	5.91	582	0.70	0.51	0.12	4.46	7.35
Iringa	14.34	1,065	1.60	2.23	0.11	11.04	17.64
Mbeya	11.38	978	0.87	0.74	0.08	9.58	13.18
Singida	3.74	651	0.75	1.03	0.20	2.18	5.29
Tabora	6.69	564	0.53	0.26	0.08	5.59	7.79
Rukwa	3.67	463	1.29	2.18	0.35	1.01	6.32
Kigoma	1.98	642	0.86	2.42	0.43	0.22	3.75
Shinyanga	7.48	567	1.44	1.69	0.19	4.52	10.44
Kagera	6.64	1,215	1.04	2.13	0.16	4.49	8.79
Mwanza	5.85	1,423	0.78	1.58	0.13	4.24	7.47
Mara	6.98	577	1.09	1.05	0.16	4.74	9.22
Manyara	2.30	292	0.88	1.01	0.38	0.49	4.12
Njombe	15.99	1,099	1.16	1.11	0.07	13.60	18.39
Katavi	4.49	584	0.88	1.05	0.20	2.68	6.31
Simiyu	4.75	688	0.92	1.30	0.19	2.84	6.65
Geita	5.64	672	0.93	1.08	0.16	3.73	7.54
Songwe	7.60	423	2.02	2.44	0.27	3.45	11.75
Zanzibar, by Island							
Unguja	0.68	542	0.34	0.93	0.50	0.00	1.39
Pemba	0.33	539	0.24	0.95	0.73	0.00	0.82
Zanzibar, by Region							
Kaskazini Unguja	1.59	66	1.94	1.56	1.22	0.00	5.59
Kusini Unguja	1.51	63	1.51	0.95	1.00	0.00	4.61
Mjini Magharibi	0.42	413	0.30	0.90	0.72	0.00	1.03
Kaskazini Pemba	0.34	263	0.26	0.53	0.77	0.00	0.87
Kusini Pemba	0.32	276	0.33	0.95	1.04	0.00	1.00

Table C.3 Sampling errors: HIV prevalence by residence and region, THIS 2022-2023 (continued)

Characteristic	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Total				
Residence							
Urban	5.05	11,077	0.27	1.66	0.05	4.50	5.60
Rural	3.97	22,586	0.18	2.00	0.05	3.59	4.35
Mainland/Zanzibar							
Mainland	4.54	31,685	0.16	1.87	0.04	4.21	4.86
Zanzibar	0.42	1,978	0.17	1.42	0.41	0.06	0.78
Mainland, by Region							
Dodoma	2.97	1,898	0.43	1.23	0.15	2.08	3.86
Arusha	2.85	524	0.93	1.63	0.33	0.94	4.77
Kilimanjaro	4.04	642	1.61	4.31	0.40	0.71	7.36
Tanga	2.90	920	0.71	1.63	0.24	1.44	4.36
Morogoro	3.25	2,021	0.49	1.52	0.15	2.25	4.25
Pwani	4.75	817	0.87	1.36	0.18	2.96	6.54
Dar es Salaam	4.25	1,701	0.42	0.75	0.10	3.37	5.12
Lindi	2.58	587	0.93	2.01	0.36	0.67	4.50
Mtwara	2.81	654	0.56	0.74	0.20	1.67	3.96
Ruvuma	4.91	1,034	0.66	0.95	0.13	3.56	6.26
Iringa	11.08	1,850	1.20	2.69	0.11	8.61	13.54
Mbeya	9.55	1,705	0.76	1.15	0.08	7.98	11.13
Singida	3.03	1,145	0.71	1.97	0.23	1.56	4.49
Tabora	5.63	1,018	0.77	1.13	0.14	4.05	7.22
Rukwa	3.03	810	0.93	2.40	0.31	1.11	4.95
Kigoma	1.68	1,094	0.83	4.53	0.49	0.00	3.38
Shinyanga	5.57	974	0.85	1.33	0.15	3.82	7.31
Kagera	5.72	2,218	0.98	3.94	0.17	3.71	7.74
Mwanza	4.68	2,485	0.55	1.70	0.12	3.54	5.82
Mara	4.99	982	0.97	1.97	0.20	2.98	7.00
Manyara	1.84	529	0.68	1.34	0.37	0.44	3.23
Njombe	12.66	1,822	0.98	1.58	0.08	10.65	14.68
Katavi	3.81	1,050	0.48	0.65	0.13	2.83	4.79
Simiyu	3.72	1,246	0.68	1.62	0.18	2.31	5.13
Geita	4.92	1,197	0.72	1.32	0.15	3.44	6.40
Songwe	6.05	762	1.57	3.30	0.26	2.82	9.28
Zanzibar, by Island							
Unguja	0.46	989	0.22	1.09	0.49	0.00	0.92
Pemba	0.34	989	0.27	2.07	0.78	0.00	0.89
Zanzibar, by Region							
Kaskazini Unguja	0.75	128	0.75	0.97	1.01	0.00	2.30
Kusini Unguja	0.78	111	0.78	0.87	1.00	0.00	2.39
Mjini Magharibi	0.36	750	0.24	1.23	0.67	0.00	0.86
Kaskazini Pemba	0.18	450	0.13	0.39	0.69	0.00	0.44
Kusini Pemba	0.48	539	0.50	2.78	1.04	0.00	1.50

Table C.4 Sampling errors: Viral load suppression by age, THIS 2022-2023

Age (years)	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
Men							
15-19	*	*	*	*	*	*	*
20-24	*	*	*	*	*	*	*
25-29	(55.0)	29	(11.19)	(1.42)	(0.20)	(31.92)	(78.02)
30-34	(59.0)	44	(7.75)	(1.07)	(0.13)	(43.04)	(74.94)
35-39	64.3	59	8.54	1.84	0.13	46.71	81.89
40-44	61.8	87	6.57	1.57	0.11	48.31	75.38
45-49	78.8	76	7.30	2.40	0.09	63.76	93.84
50-54	80.5	87	5.61	1.72	0.07	68.97	92.07
55-59	83.4	53	5.50	1.14	0.07	72.11	94.76
60-64	(78.0)	41	(8.10)	(1.53)	(0.10)	(61.29)	(94.64)
65+	(92.8)	49	(3.90)	(1.10)	(0.04)	(84.77)	(100.00)
15-24	(71.5)	25	(9.68)	(1.10)	(0.14)	(51.59)	(91.47)
25-34	57.0	73	6.62	1.29	0.12	43.34	70.61
35-44	62.9	146	5.26	1.72	0.08	52.09	73.76
45-54	79.7	163	4.38	1.92	0.05	70.65	88.69
55-64	80.8	94	4.92	1.45	0.06	70.63	90.88
Total 15-49 years	66.0	320	3.27	1.52	0.05	59.26	72.72
Total 50+ years	83.1	230	3.16	1.63	0.04	76.62	89.62
Total 15+years	72.2	550	2.35	1.52	0.03	67.36	77.05
Women							
15-19	*	*	*	*	*	*	*
20-24	51.8	67	7.27	1.40	0.14	36.84	66.77
25-29	66.7	100	5.16	1.19	0.08	56.11	77.37
30-34	81.8	166	3.33	1.23	0.04	74.97	88.69
35-39	84.2	193	3.22	1.49	0.04	77.54	90.79
40-44	83.8	185	2.80	1.06	0.03	78.06	89.59
45-49	85.4	201	2.98	1.42	0.03	79.22	91.49
50-54	88.0	149	3.53	1.75	0.04	80.77	95.29
55-59	82.8	80	5.10	1.44	0.06	72.35	93.34
60-64	85.5	69	4.82	1.28	0.06	75.57	95.44
65+	87.3	66	4.50	1.19	0.05	78.04	96.59
15-24	54.5	90	6.10	1.34	0.11	41.98	67.12
25-34	76.2	266	2.90	1.23	0.04	70.22	82.17
35-44	84.0	378	2.28	1.45	0.03	79.30	88.68
45-54	86.5	350	2.27	1.54	0.03	81.81	91.15
55-64	84.0	149	3.53	1.37	0.04	76.71	91.25
Total 15-49 years	78.9	935	1.54	1.33	0.02	75.73	82.06
Total 50+ years	86.2	364	2.23	1.53	0.03	81.65	90.85
Total 15+years	80.9	1,299	1.22	1.24	0.02	78.38	83.39

Table C.4 Sampling errors: Viral load suppression by age, THIS 2022-2023 (continued)

Age (years)	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Total				
15-19	(60.6)	35	(8.87)	(1.12)	(0.15)	(42.38)	(78.92)
20-24	59.0	80	6.72	1.48	0.11	45.15	72.83
25-29	62.9	129	5.03	1.39	0.08	52.51	73.22
30-34	76.7	210	3.04	1.08	0.04	70.43	82.93
35-39	78.4	252	3.27	1.58	0.04	71.69	85.15
40-44	76.5	272	3.07	1.42	0.04	70.13	82.80
45-49	83.2	277	3.12	1.93	0.04	76.77	89.64
50-54	84.9	236	3.14	1.81	0.04	78.48	91.41
55-59	83.1	133	3.73	1.30	0.04	75.39	90.73
60-64	82.3	110	4.69	1.65	0.06	72.69	92.00
65+	89.5	115	3.18	1.23	0.04	82.98	96.08
15-24	59.5	115	5.39	1.38	0.09	48.42	70.63
25-34	71.0	339	2.65	1.15	0.04	65.59	76.50
35-44	77.4	524	2.31	1.59	0.03	72.64	82.15
45-54	84.0	513	2.20	1.84	0.03	79.47	88.52
55-64	82.7	243	2.86	1.39	0.03	76.84	88.63
Total 15-49 years	75.0	1,255	1.50	1.51	0.02	71.91	78.09
Total 50+ years	85.0	594	1.84	1.57	0.02	81.21	88.79
Total 15+years	78.0	1,849	1.20	1.56	0.02	75.53	80.49

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

Table C.5 Sampling errors: Viral load suppression by residence and region, THIS 2022-2023

Characteristic	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Men				
Residence							
Urban	72.4	171	4.14	1.46	0.06	63.88	80.94
Rural	72.1	379	2.85	1.53	0.04	66.20	77.94
Mainland/Zanzibar							
Mainland	72.3	547	2.36	1.51	0.03	67.47	77.18
Zanzibar	*	*	*	*	*	*	*
Mainland, by Region							
Dodoma	*	*	*	*	*	*	*
Arusha	*	*	*		*	*	*
Kilimanjaro	*	*	*	*	*	*	*
Tanga	*	*	*		*	*	*
Morogoro	(63.7)	27	(8.34)	(0.78)	(0.13)	(46.57)	(80.91)
Pwani	*	*	*	*	*	*	*
Dar es Salaam	*	*	*	*	*	*	*
Lindi	*	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*	*
Ruvuma	*	*	*	*	*	*	*
Iringa	75.2	61	6.36	1.30	0.08	62.09	88.27
Mbeya	79.4	61	3.85	0.54	0.05	71.49	87.34
Singida	*	*	*	*	*	*	*
Tabora	*	*	*	*	*	*	*
Rukwa	*	*	*	*	*	*	*
Kigoma	*	*	*	*	*	*	*
Shinyanga	*	*	*	*	*	*	*
Kagera	83.4	54	3.19	0.39	0.04	76.78	89.93
Mwanza	(74.3)	38	(6.22)	(0.75)	(0.08)	(61.54)	(87.16)
Mara	*	*	*	*	*	*	*
Manyara	*	*	*	*	*	*	*
Njombe	86.9	66	4.51	1.16	0.05	77.64	96.20
Katavi	*	*	*	*	*	*	*
Simiyu	*	*	*	*	*	*	*
Geita	(57.1)	27	(8.05)	(0.69)	(0.14)	(40.56)	(73.72)
Songwe	*	*	*	*	*	*	*
Zanzibar, by Island							
Unguja	*	*	*	*	*	*	*
Pemba	*	*	*	*	*	*	*
Zanzibar, by Region	*	*	*	*	*	*	*
Kaskazini Unguja	*	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*	*

Table C.5 Sampling errors: Viral load suppression by residence and region, THIS 2022-2023 (continued)

Characteristic	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Women				
Residence							
Urban	80.0	509	1.89	1.13	0.02	76.10	83.88
Rural	81.6	790	1.62	1.38	0.02	78.31	84.97
Mainland/Zanzibar							
Mainland	80.9	1,293	1.22	1.24	0.02	78.38	83.40
Zanzibar	*	*	*	*	*	*	*
Mainland, by Region							
Dodoma	71.1	52	7.20	1.29	0.10	56.26	85.93
Arusha	*	*	*	*	*	*	*
Kilimanjaro	*	*	*	*	*	*	*
Tanga	*	*	*	*	*	*	*
Morogoro	(68.8)	43	(5.83)	(0.67)	(0.08)	(56.76)	(80.78)
Pwani	(79.5)	35	(7.70)	(1.24)	(0.10)	(63.66)	(95.39)
Dar es Salaam	81.3	67	4.29	0.80	0.05	72.42	90.09
Lindi	*	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*	*
Ruvuma	(71.1)	37	(9.54)	(1.59)	(0.13)	(51.46)	(90.74)
Iringa	88.0	154	2.78	1.12	0.03	82.24	93.70
Mbeya	85.5	119	3.50	1.17	0.04	78.32	92.74
Singida	(75.4)	27	(8.72)	(1.06)	(0.12)	(57.40)	(93.31)
Tabora	(69.1)	40	(5.40)	(0.53)	(0.08)	(58.02)	(80.25)
Rukwa	*	*	*	*	*	*	*
Kigoma	*	*	*	*	*	*	*
Shinyanga	(77.8)	46	(7.25)	(1.37)	(0.09)	(62.81)	(92.69)
Kagera	86.5	87	2.17	0.35	0.03	82.07	91.02
Mwanza	78.2	91	5.60	1.65	0.07	66.63	89.69
Mara	(83.5)	43	(5.82)	(1.04)	(0.07)	(71.55)	(95.54)
Manyara	*	*	*	*	*	*	*
Njombe	86.6	185	1.56	0.38	0.02	83.43	89.84
Katavi	(83.8)	28	(5.24)	(0.55)	(0.06)	(73.00)	(94.59)
Simiyu	(86.8)	35	(5.19)	(0.80)	(0.06)	(76.07)	(97.45)
Geita	(82.7)	41	(6.40)	(1.14)	(0.08)	(69.49)	(95.84)
Songwe	(90.8)	33	(3.58)	(0.49)	(0.04)	(83.40)	(98.14)
Zanzibar, by Island							
Unguja	*	*	*	*	*	*	*
Pemba	*	*	*	*	*	*	*
Zanzibar, by Region							
Kaskazini Unguja	*	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*	*

Table C.5 Sampling errors: Viral load suppression by residence and region, THIS 2022-2023 (continued)

Characteristic	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Total				
Residence							
Urban	77.7	680	2.02	1.60	0.03	73.55	81.87
Rural	78.2	1,169	1.50	1.54	0.02	75.15	81.33
Mainland/Zanzibar							
Mainland	78.1	1,840	1.21	1.56	0.02	75.57	80.54
Zanzibar	*	*	*	*	*	*	*
Mainland, by Region							
Dodoma	73.4	64	6.17	1.23	0.08	60.70	86.10
Arusha	*	*	*	*	*	*	*
Kilimanjaro	(79.8)	32	(7.80)	(1.17)	(0.10)	(63.73)	(95.84)
Tanga	(93.5)	27	(4.30)	(0.79)	(0.05)	(84.65)	(100.00)
Morogoro	66.8	70	5.24	0.85	0.08	55.97	77.55
Pwani	(71.8)	44	(6.16)	(0.81)	(0.09)	(59.16)	(84.52)
Dar es Salaam	79.6	84	4.17	0.89	0.05	70.99	88.16
Lindi	*	*	*	*	*	*	*
Mtwara	*	*	*	*	*	*	*
Ruvuma	74.5	56	9.22	2.46	0.12	55.51	93.47
Iringa	83.9	215	2.22	0.78	0.03	79.28	88.44
Mbeya	83.2	180	2.67	0.92	0.03	77.74	88.75
Singida	(71.9)	40	(8.58)	(1.42)	(0.12)	(54.23)	(89.58)
Tabora	65.8	63	7.35	1.49	0.11	50.65	80.93
Rukwa	(82.5)	29	(7.20)	(1.01)	(0.09)	(67.66)	(97.32)
Kigoma	*	*	*	*	*	*	*
Shinyanga	75.7	62	7.73	1.99	0.10	59.80	91.66
Kagera	85.2	141	2.17	0.52	0.03	80.75	89.69
Mwanza	76.8	129	4.79	1.65	0.06	66.93	86.66
Mara	76.8	55	7.76	1.83	0.10	60.83	92.81
Manyara	*	*	*	*	*	*	*
Njombe	86.7	251	2.18	1.03	0.03	82.24	91.21
Katavi	(85.6)	44	(5.24)	(0.96)	(0.06)	(74.85)	(96.45)
Simiyu	82.0	52	4.95	0.85	0.06	71.77	92.17
Geita	72.2	68	5.31	0.94	0.07	61.24	83.10
Songwe	(87.2)	49	(2.25)	(0.22)	(0.03)	(82.54)	(91.82)
Zanzibar, by Island							
Unguja	*	*	*	*	*	*	*
Pemba	*	*	*	*	*	*	*
Zanzibar, by Region							
Kaskazini Unguja	*	*	*	*	*	*	*
Kusini Unguja	*	*	*	*	*	*	*
Mjini Magharibi	*	*	*	*	*	*	*
Kaskazini Pemba	*	*	*	*	*	*	*
Kusini Pemba	*	*	*	*	*	*	*

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

Table C.6 Sampling errors: ARV-adjusted 95-95-95 by age (conditional percentages), THIS 2022-2023

Age (years)	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
Men							
Diagnosed							
15-24	(87.3)	25	(6.73)	(0.98)	(0.08)	(73.39)	(100.00)
25-34	68.0	73	6.33	1.32	0.09	54.94	80.99
35-49	73.1	223	4.46	2.24	0.06	63.95	82.30
50+	87.2	230	2.84	1.66	0.03	81.36	93.07
Total 15-49 years	73.3	321	3.32	1.80	0.05	66.50	80.16
Total 15+ years	78.4	551	2.36	1.80	0.03	73.50	83.21
On Treatment							
15-24	*	*	*	*	*	*	*
25-34	92.2	50	4.53	1.39	0.05	82.83	100.00
35-49	94.7	182	2.21	1.76	0.02	90.15	99.25
50+	99.5	204	0.34	0.49	0.00	98.83	100.00
Total 15-49 years	94.8	252	1.79	1.62	0.02	91.10	98.46
Total 15+ years	96.7	456	1.08	1.67	0.01	94.46	98.92
Viral Load Suppression							
15-24	*	*	*	*	*	*	*
25-34	(91.0)	47	(4.39)	(1.08)	(0.05)	(81.93)	(100.00)
35-49	93.7	175	2.18	1.39	0.02	89.18	98.16
50+	94.9	203	1.90	1.50	0.02	90.95	98.78
Total 15-49 years	91.6	242	2.12	1.41	0.02	87.22	95.96
Total 15+ years	92.9	445	1.45	1.42	0.02	89.96	95.93
Women							
Diagnosed							
15-24	59.5	90	6.40	1.51	0.11	46.35	72.72
25-34	85.6	266	2.54	1.39	0.03	80.39	90.87
35-49	87.0	579	1.74	1.54	0.02	83.38	90.54
50+	87.9	364	2.13	1.55	0.02	83.57	92.33
Total 15-49 years	83.6	935	1.48	1.49	0.02	80.60	86.69
Total 15+ years	84.8	1,299	1.22	1.51	0.01	82.29	87.33
On Treatment							
15-24	99.5	58	0.52	0.30	0.01	98.40	100.00
25-34	97.2	228	1.40	1.62	0.01	94.30	100.00
35-49	97.8	514	0.76	1.37	0.01	96.25	99.36
50+	100.0	328	0.00	*	0.00	100.00	100.00
Total 15-49 years	97.8	800	0.60	1.32	0.01	96.51	98.99
Total 15+ years	98.4	1,128	0.44	1.34	0.00	97.49	99.28
Viral Load Suppression							
15-24	86.6	57	4.68	1.05	0.05	76.95	96.21
25-34	90.5	221	2.29	1.33	0.03	85.75	95.17
35-49	96.3	504	0.90	1.14	0.01	94.43	98.13
50+	97.5	328	1.11	1.69	0.01	95.25	99.83

Table C.6 Sampling errors: ARV-adjusted 95-95-95 by age (conditional percentages), THIS 2022-2023 (continued)

Age (years)	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
Total 15-49 years	93.8	782	0.92	1.13	0.01	91.96	95.73
Total 15+ years	94.9	1,110	0.72	1.19	0.01	93.41	96.38
Total							
Diagnosed							
15-24	67.7	115	5.57	1.62	0.08	56.18	79.13
25-34	80.9	339	2.42	1.28	0.03	75.92	85.88
35-49	82.5	802	1.78	1.77	0.02	78.86	86.21
50+	87.7	594	1.74	1.65	0.02	84.08	91.23
Total 15-49 years	80.5	1,256	1.49	1.78	0.02	77.45	83.59
Total 15+ years	82.7	1,850	1.24	1.97	0.01	80.12	85.21
On Treatment							
15-24	99.7	78	0.33	0.26	0.00	99.01	100.00
25-34	96.0	278	1.50	1.65	0.02	92.95	99.15
35-49	96.9	696	0.83	1.61	0.01	95.22	98.64
50+	99.8	532	0.13	0.51	0.00	99.53	100.00
Total 15-49 years	96.9	1,052	0.67	1.57	0.01	95.56	98.30
Total 15+ years	97.9	1,584	0.46	1.58	0.00	96.91	98.79
Viral Load Suppression							
15-24	84.8	77	4.73	1.32	0.06	75.09	94.59
25-34	90.6	268	2.01	1.26	0.02	86.43	94.71
35-49	95.6	679	0.97	1.52	0.01	93.55	97.56
50+	96.5	531	0.99	1.54	0.01	94.43	98.53
Total 15-49 years	93.2	1,024	0.99	1.59	0.01	91.20	95.27
Total 15+ years	94.3	1,555	0.73	1.55	0.01	92.78	95.80

( ) Estimates based on a denominator between 25 and 49 are included in parentheses and should be interpreted with caution.
* Estimates based on a denominator below 25 have been suppressed and are indicated by an asterisk. Additionally, denominators under 25 have also been withheld to safeguard participant confidentiality.

Table C.7 Sampling errors: ARV-adjusted 95-95-95 by age (overall percentages), THIS 2022-2023

Age (years)	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
			Men				
			Diagnosed				
15-24	87.3	25	6.7	1.0	0.1	73.4	100.0
25-34	68.0	73	6.3	1.3	0.1	54.9	81.0
35-49	73.1	223	4.5	2.2	0.1	63.9	82.3
50+	87.2	230	2.8	1.7	0.0	81.4	93.1
Total 15-49 years	73.3	321	3.3	1.8	0.0	66.5	80.2
Total 15+ years	78.4	551	2.4	1.8	0.0	73.5	83.2
			On Treatment				
15-24	87.3	25	6.7	1.0	0.1	73.4	100.0
25-34	62.6	73	6.6	1.3	0.1	49.1	76.2
35-49	69.2	223	4.3	2.0	0.1	60.3	78.2
50+	86.8	230	2.9	1.6	0.0	80.9	92.7
Total 15-49 years	69.5	321	3.4	1.7	0.0	62.5	76.5
Total 15+ years	75.8	551	2.4	1.7	0.0	70.8	80.7
			Viral Load Suppression				
15-24	71.5	25	9.7	1.1	0.1	51.6	91.5
25-34	57.0	73	6.6	1.3	0.1	43.3	70.6
35-49	64.9	223	4.4	1.9	0.1	55.8	73.9
50+	82.3	230	3.2	1.6	0.0	75.7	89.0
Total 15-49 years	63.7	321	3.4	1.6	0.1	56.6	70.7
Total 15+ years	70.4	551	2.4	1.5	0.0	65.4	75.4
			Women				
			Diagnosed				
15-24	59.5	90	6.4	1.5	0.1	46.4	72.7
25-34	85.6	266	2.5	1.4	0.0	80.4	90.9
35-49	87.0	579	1.7	1.5	0.0	83.4	90.5
50+	87.9	364	2.1	1.5	0.0	83.6	92.3
Total 15-49 years	83.6	935	1.5	1.5	0.0	80.6	86.7
Total 15+ years	84.8	1,299	1.2	1.5	0.0	82.3	87.3
			On Treatment				
15-24	59.2	90	6.4	1.5	0.1	46.0	72.4
25-34	83.2	266	2.7	1.4	0.0	77.7	88.7
35-49	85.1	579	1.9	1.6	0.0	81.2	88.9
50+	87.9	364	2.1	1.5	0.0	83.6	92.3
Total 15-49 years	81.8	935	1.5	1.5	0.0	78.6	85.0
Total 15+ years	83.4	1,299	1.3	1.5	0.0	80.8	86.1
			Viral Load Suppression				
15-24	51.3	90	6.2	1.4	0.1	38.6	64.0
25-34	75.3	266	2.9	1.2	0.0	69.3	81.3
35-49	81.9	579	2.0	1.6	0.0	77.8	86.0
50+	85.8	364	2.2	1.5	0.0	81.2	90.4
Total 15-49 years	76.7	935	1.7	1.4	0.0	73.3	80.1
Total 15+ years	79.2	1,299	1.3	1.4	0.0	76.5	81.9

Table C.7 Sampling errors: ARV-adjusted 95-95-95 by age (overall percentages), THIS 2022-2023 (continued)

Age (years)	Weighted estimate (%)	Unweighted number	Standard error (%)	Design effect	Relative standard error	Lower confidence limit (%)	Upper confidence limit (%)
Total							
Diagnosed							
15-24	67.7	115	5.6	1.6	0.1	56.2	79.1
25-34	80.9	339	2.4	1.3	0.0	75.9	85.9
35-49	82.5	802	1.8	1.8	0.0	78.9	86.2
50+	87.7	594	1.7	1.6	0.0	84.1	91.2
Total 15-49 years	80.5	1,256	1.5	1.8	0.0	77.5	83.6
Total 15+ years	82.7	1,850	1.2	2.0	0.0	80.1	85.2
On Treatment							
15-24	67.4	115	5.6	1.6	0.1	55.9	78.9
25-34	77.7	339	2.6	1.3	0.0	72.3	83.1
35-49	80.0	802	1.8	1.6	0.0	76.3	83.7
50+	87.5	594	1.7	1.6	0.0	83.9	91.1
Total 15-49 years	78.0	1,256	1.5	1.7	0.0	74.9	81.2
Total 15+ years	80.9	1,850	1.3	1.9	0.0	78.3	83.5
Viral Load Suppression							
15-24	57.2	115	5.5	1.4	0.1	45.9	68.6
25-34	70.4	339	2.7	1.1	0.0	64.9	75.8
35-49	76.4	802	1.9	1.7	0.0	72.4	80.5
50+	84.4	594	1.9	1.6	0.0	80.6	88.3
Total 15-49 years	72.8	1,256	1.6	1.7	0.0	69.4	76.1
Total 15+ years	76.3	1,850	1.3	1.7	0.0	73.6	78.9

Table C.8 Sampling errors: Number of new infections annually and number of people living with HIV by age, THIS 2022-2023

Age (years)	Weighted estimate	Standard error	Design effect	Relative standard error	Lower confidence limit	Upper confidence limit
Number of new infections annually						
15-24	20,382	8,294.47	2.82	0.41	3,266	37,498
25-34	22,552	8,286.72	2.71	0.37	5,452	39,651
35-49	14,664	6,638.74	2.96	0.45	965	28,363
50+	2,076	1,006.07	0.57	0.48	0	6,457
50-59	2,070	1,003.36	0.0	0.48	0	6,523
60+	0	-	-	-	0	9,800
Total 15-49 years	57,653	13,717.84	2.91	0.24	29,346	85,960
Total 15+ years	59,751	13,904.18	3.05	0.23	31,060	88,443
People living with HIV						
15-24	114,341	13,432.38	1.33	0.12	86,677	142,006
25-34	293,223	19,496.38	1.20	0.07	253,069	333,377
35-49	674,793	30,850.67	1.54	0.05	611,255	738,331
50+	465,732	26,391.22	1.89	0.06	411,378	520,085
50-59	287,762	19,339.52	1.62	0.07	247,932	327,593
60+	177,969	12,689.67	1.16	0.07	151,835	204,104
Total 15-49 years	1,082,357	42,166.43	1.54	0.04	995,513	1,169,200
Total 15+ years	1,548,088	54,552.26	1.91	0.04	1,435,736	1,660,441

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Alli A. Rashid
Amani Libyela
Amri Matole
Beatrice Titus
Benson Eliasi Maliki
Bryan Severin Itimbwe
Celina Hillary
Elias Luzaria
Elingavo Invocaviths Sway
Elizeus Novat
Erick Luahula
Eusebius Mwinuka
Gasper Baltazary
Getruda Libent
Gonza Wilfred
Graysonn Barnabas Andrew
Happiness Magagula
Hemed Nkunya
Imani A. Kasake
Innes Henry Tibenda
Jackline Kimaro
Jane Naleo
Jasmine Bahati
John Mwangi

Josephat Lucian Riite
Joyce Joseph Mvungi
Julius Juvenary Ntungilwege
Julius Kombania
Khadija Juma Kigoto (Moh)
Kulwa Namkaa
Lathma Idd
Lydia Mwaga
Madelyn Mushi
Magreth Mzengi
Mathew Semuhonyi
Mathias C. Masawe
Michael Saitory
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Mwanaidi Makao
Naishoki Paul Sangayon
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Omary Juma Othman
Peragia Byabato
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Proscovia Laurian
Raymond Dibogo
Respicius Gasper
Rose Meagie
Rose Nyabukika
Saimon Jonas Lyaweye
Salehe Chivanga
Saumu Said
Selemani Mtinangi
Spencer Lishela
Tamasha Ngalomba
Telensi Aloys
Venance Lucas
William Hezron Sanga
Yasinta Kafulila
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Testers (Phlebotomy/Testing and Counselling)

Agnes Edon Sanga
Ally Abdallah Misilo
Amiri Athumani Amiri
Asha Omary Mwalongo
Asha Salum Nigwe
Athanasia Francis Rwegoshora
Beata Daniel Tillya
Beatha Lucas Clement
Brian Lameck Matemba
Cecilia Sylivester Muganda
Christina Zacharia Kopwe
Christopher Bobola Pilikano
Clemencia Alex Assenga
Daniel Ayoub Mwasiposya
Deborah Jonas Mugaya
Denis Kipanda John
Denis Rabanus Kapinga
Deusdedit Mtengwa
Deusdedith Robert Magere
Devotha Edmund Mhagama
Devotha Wilfred Gwalo
Dickson Peter Mganga
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Elebia Mandarasi
Elimboto Duma
Elisha Pembese Martine
Elizabeth Edward Kajisi
Elizabeth Richard Chami
Enock Ernest Mhembano
Erasto Nicholous
Fadhili Tisimia Kipene
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Fredrick Evance Mushi
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Gabriel Signas Nyunja
George Elindede
Getrude Kitutu Faustine
Getrude Richard Mushi
Gideon Evodius Kinyina
Gloriana Joshua Akyoo
Godlove Goodluck Ngowi
Goodson Michael Vegula
Hafsa Thabit Nouman
Hanifa Shabani Mgallu
Happyness Mboje Lujani
Helena Andrea Saka
Henry Merengo Mosabi
Herman Rashid Gondo
Hilda Nestory Ndyamukama
Innocent Michael Kihongo
Irene James Swai
Isaya Justine Mwalongo
James Melkiades Mpinika
Jeremia Steven Nyange
Jeremiah Isack Chacha
Jofrey Amos Repord
Johanes Mwita Mbote
John Anthony Pesha
John Charles Salamba
Johnmark Ouma Obura
Joseph Karibu Malimi
Joseph Seleman Kilumba
Josephina Emmanuel Milwano
Joshua Lukanya Mashauri
Julieth Henry Tesha
Jumanne Chapa
Kitashika Samson Kuzenza
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Kwezi Raphael Malale
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Lameck Andrea Magori
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Magdalena Victor Mmuni
Magesa Deogratius Mabagala
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Mariam Mkoma
Marietha Anthon Ng'Oge
Martha Bernard Mnenje
Martha George Chomola
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Mary Steven Mngazinja
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Mbonimpa S. Wakachira
Mevaji Mary Anthony
Mohamed Japhary Mkuyu
Mussa Nurdin Nzingo
Mwasi Masumbuko Masondore
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Nola January Sanga
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Oliva Paulo Magweiga
Oresta Dionis Mwambe
Patrick Enock Kabujanja
Patrick Ngelangela
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Peter Mark
Queen Ludovick Mushi
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Revogati Hugolin Tarimo
Ritha John Mrope
Robhi Kenyuko
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Rose Simion Nyaruri
Saidi Malando Mabere
Sala Joseph Kilakuno
Saleh Mohamed Saleh
Salome Jacob Mtamanyali
Salutary Thadei Munishi
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Sarah John Mhogolo
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Tarik Aziz Moh'D
Taulini Paul Novat
Theresia Mwita
Trudibertha Rutakinikwa
Tumaini Sang'Udi Kazzi
Yasin Mshamu Mkombe
Yona Eliud Yangaza
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Zainab Juma Nyoma

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Atupakisye Fred Matola
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Beatrice Sekondo Mchome
Betty William Buyanda
Charles Stephan Shilumba
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Eliud Bernald Juma
Elizabeth Ezekiel Lema
Elizabeth Richard Msaki
Enosi Jackson
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Fatuma Kamea Seleman
Gidion Obeid Manwingi
Grace John Semwenda
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Janeth Samuel Mbaruku
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John Bukumbi
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Khalifa Kyombo
Lenarda Kiwango
Mahmoud Muhsin Salim
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Paulo Laithon Mwakajila
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Prisca Paul Maridadi
Rachel Abiud Chaula
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Robert Mwiza
Rose Thomas Nchia
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Interviewers

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Alice Josephaty Mrindoko
Allen Bakari Mbaga
Alvera Pastory Kamuntu
Anjeline Abura Odera
Anna Peter Ndunguru
Anna Samwel Sulle
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Aristariki Rogath Mushi
Asma Mwinyi Rashid
Astabro Blastus Makongo
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Baraka Amos Wazael
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Christina Nchambi Martini
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Dionise Francis Rwegoshora
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Doris Selas Ringo
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Fadhili Costantino Mtweve
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Fatuma Ramadhani Mchome
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Halima Msham Kimbwanda
Hamida Hamisi Mvunta
Happiness Byamungu
Happiness Innocent Liya
Happiness Samwel Mmari
Happyness Chibunu
Hassan Njilinji
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Hawa Mohamed Nauma
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Idda Martin Mkolwe
Imelda Gregory Mshyota
Irene France France
Irene Peter Sinienga
Ivo Josephath Hekela
Jackline Joseph Kapela
Janeth Havinkelly Robina
Jenofeva Paul Mtenga
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John Peter Mayala
Joseph Charles Baghary
Joseph Onna Anney
Josephine Kitila Boniphace
Josephine Mary Masalla
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Joyce Tryphone Njenga
Judies Nyakerario Mwangi
Judith Baraka Dyoya
Judith Michael Mzia
Julieth Ignatius Kaiza
Justine Edrick Ntanga
Keith Leslie Chande
Kelvin David Masuba
Kibohi Jackson Msereti
Kija Masaga Kija

Kizito Ally Bernado
Lekisha Gasper Mkapa
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Loveness Remmy Mpepo
Loy Daniel Wami
Luca Adamu Nziku
Lucy Michael Kazabi
Lucy Mshanga
Lukia Richard Mtweve
Mahemba Nyamsekela Mahemba
Mariam Bakari Mahiza
Mariam Joel Gongula
Mariam Rodrick Nyagawa
Mary Ntalenga Hamis
Mary Patrick Massila
Mary William Warioba
Maryam Juma Simai
Maryfrida Elisha Njoghomi
Mathew Robert Ilamlila
Matilda Geay
Matilda Peter Msaga
Melian Charles Lwanda
Mugisha Mutangira Kahigi
Musa Maemba Seleman
Mwangata Khamis Kaisi
Mwinshehe Hassani Zuberi
Nassoro Said Mkwili
Nassoro Saidi Mtaji
Nawangi Phionah Simpulisio
Neema Joshua Urasa
Neema Samson Sanga
Nezia Ayubu Mtaki
Odas Philemon Bahezwa
Olympya Casmiry MshangaOmary
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Paulina Mwacha
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Polycarp Peter Mallya
Pudensiana Ludovick Mwiliko
Raufu Abdulrahman Samu
Regina Joseph Hosea
Rehema Elia Kingu
Restituta Omary Nkuu
Robert Mihaka Nkwabi
Robert Sylivester Mgendi
Rose Eusabius Mvuoni
Roster Clement Lyimo
Rukaiya Bakari Kadir
Saada Ali Makame
Said Ramadhani Maulid
Saidi Mussa Tekina
Salimin Musa Mangunja
Sango Pius Mwambala
Sarah Paul Mlay
Saraphina Ernest Piason
Seleman Salim Nchimbi
Shabani Zubery Mohamed
Shadrack Bryson Mtepah
Sharifa Zahoro Chomoka
Shija Peleka Gervas
Sibia Mbogora Mutani
Stephan Gabriel Mohamed
Stephen John Sabiano
Subira Augustino Mushi
Suleiman Pandu Ali
Suleimani Singla Muro
Sung'Hwa Ndulu Mkilila
Suzana Michael Daniel
Swaleh Mohamed Ngaina
Tawheeda Amme Msaraka
Titus Stanley Mbugah
Triphonia Anicent Mushi
Tryphonia Peter Mosha
Verichita Bernard Mchami
Veronica Laurent Ngeni
Vicent Gasper Robert
Victor Victor Kitundu
Vitalis Clarence Kateule
Wema Amani Sanga
Wilson Henry Kagoli
Winnie Jeremiah
Yohana Yakobo Richard
Yusuf Rashid Nyoni
Yusuph Twalib Mdemu
Zaina Abiswai Mbaraka
Zainabu Abdallah Mdimi
Zakayo Bushishi Manota
Zulfa Ramadhani Masaka

ICT & Data Officers

Boniface Njile
Ibrahim Gulam
John Nyanda
Matlida Kululetera
Titus Mkandya

APPENDIX E HOUSEHOLD QUESTIONNAIRE

HOUSEHOLD SCHEDULE												
LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX		RESIDENCE				AGE	
	INTERVIEWER SAYS: "Please give me the names of the persons who usually live in your household or guests of the household who stayed here last night, starting with the head of the household."								IF LESS THAN 2 YEARS, RECORD IN MONTHS.	
	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**)?	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

HOUSEHOLD SCHEDULE (continued)

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
-8 = DON'T KNOW

LINE NO.	IF AGED 15-17 YEARS EMANCIPATION STATUS	LAST TIME USUAL RESIDENT SLEPT IN HOUSEHOLD		LIVES AWAY	COUNTRY OR PROVINCE	SICK PERSON
	Is (**NAME**) emancipated? An emancipated minor is a person aged 15-17 years old who is married or no longer depends on the parents and therefore does not require parental permission to participate in the survey.	CHECK COLUMN 6, IF NO, when was the last time, **(NAME)** slept the night in the household? MONTH (SEE CODES BELOW)	YEAR	Is (**NAME**) in another region or country?	Which region or country is (**NAME**) in currently? (SEE CODES ON FOLLOWING PAGE)	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?
(1)	(9)	(10)		(11)	(12)	(13)
1	Y N		DK = -8 REFUSED = -9	Y N		Y N
2	Y N		DK = -8 REFUSED = -9	Y N		Y N
3	Y N		DK = -8 REFUSED = -9	Y N		Y N
4	Y N		DK = -8 REFUSED = -9	Y N		Y N
5	Y N		DK = -8 REFUSED = -9	Y N		Y N
6	Y N		DK = -8 REFUSED = -9	Y N		Y N
7	Y N		DK = -8 REFUSED = -9	Y N		Y N
8	Y N		DK = -8 REFUSED = -9	Y N		Y N
9	Y N		DK = -8 REFUSED = -9	Y N		Y N
10	Y N		DK = -8 REFUSED = -9	Y N		Y N

HOUSEHOLD SCHEDULE (continued)

☐ **TICK HERE IF CONTINUATION SHEET USED**

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 ☐

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

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

ADD TO SCHEDULE

IF NO, INTERVIEWER SAYS: "Thank you for confirming the Household Roster is complete."

CODES FOR COLUMN 10: LAST TIME SLEPT IN HOUSEHOLD

01 = JANUARY
02 = FEBRUARY
03 = MARCH
04 = APRIL
05 = MAY
06 = JUNE
07 = JULY
08 = AUGUST
09 = SEPTEMBER
10 = OCTOBER
11 = NOVEMBER
12 = DECEMBER
-8 = DON'T KNOW
-9 = REFUSED MONTH

CODES FOR COLUMN 12: REGION/COUNTRY PRESENTLY IN

IF REGION:

1 = DODOMA
2 = ARUSHA
3 = KILIMANJARO
4 = TANGA
5 = MOROGORO
6 = PWANI
7 = DAR ES SALAAM
8 = LINDI
9 = MTWARA
10 = RUVUMA
11 = IRINGA
12= MBEYA
13= SINGIDA
14= TABORA
15= RUKWA
16= KIGOMA
17= SHINYANGA
18= KAGERA
19= MWANZA
20= MARA
21= MANYARA
22= NJOMBE
23= KATAVI
24= SIMIYU
25= GEITA
26= SONGWE
51= KASKAZINI UNGUJA
52= KUSINI UNGUJA
53= MJINI MAGHARIBI
54= KASKAZINI PEMBA
55= KUSINI PEMBA
96= OTHER

_____
(SPECIFY)

-8 = DON'T KNOW
-9 = REFUSED

IF COUNTRY:

1= ANGOLA
2= BURUNDI
3= CHINA
4= COMOROS
5= DEMOCRATIC REPUBLIC OF CONGO
6= INDIA
7= KENYA
8= MALAWI
9= MOZAMBIQUE
10= NIGERIA
11= PAKISTAN
12= RWANDA
13= SOUTH AFRICA
14= UGANDA
15= ZAMBIA
96= OTHER

_____
(SPECIFY)

-8 = DON'T KNOW
-9 = REFUSED

HOUSEHOLD SCHEDULE (for minors—skip if emancipated)

LINE NO.	IF (**NAME**) is 0-17 years: SCHOOL	IF (**NAME**) is 0-17 years: ORPHAN STATUS / PARENT OR GUARDIAN				IF (**NAME**) is 15-17: WRITTEN PERMISSION TO PARTICIPATE	
	Interviewer says: "The next step will be to answer some additional questions for the Household Members who are 0-17 years old." These questions are regarding (**NAME**). Is (**NAME**) currently enrolled in school?	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: RECORD **MALE** GUARDIAN'S LINE NUMBER OR '00' IF MALE PARENT OR GUARDIAN NOT PRESENT IN HH.	RECORD LINE NUMBER OF PARENT / GUARDIAN WHO CAN GIVE PERMISSION FOR (**NAME**) TO PARTICIPATE IN THE SURVEY.	You said that there is no adult or parent/ guardian in the household who can give permission for (**NAME**) to participate in the survey. Is this correct?
(1)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1	Y N	Y N DK → 17		Y N DK → 19			Y N
2	Y N	Y N DK → 17		Y N DK → 19			Y N
3	Y N	Y N DK → 17		Y N DK → 19			Y N
4	Y N	Y N DK → 17		Y N DK → 19			Y N
5	Y N	Y N DK → 17		Y N DK → 19			Y N
6	Y N	Y N DK → 17		Y N DK → 19			Y N
7	Y N	Y N DK → 17		Y N DK → 19			Y N
8	Y N	Y N DK → 17		Y N DK → 19			Y N
9	Y N	Y N DK → 17		Y N DK → 19			Y N
10	Y N	Y N DK → 17		Y N DK → 19			Y N

TOTAL ELIGIBLE MEN (ADULTS 15+ YEARS AND EMANCIPATED MINORS) | |

TOTAL ELIGIBLE WOMEN (ADULTS 15+ YEARS AND EMANCIPATED MINORS) | |

HOUSEHOLD SCHEDULE (for minors—skip if emancipated) (continued)

LINE NO.	SICKNESS AND RESIDENCE OF BIOLOGICAL PARENTS				MOTHER DEAD OR SICK	FATHER DEAD OR SICK
	CHECK COLUMN 15, IF COLUMN 15 = 'N' OR 'DK' →25 IF COLUMN 15 = '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?	CHECK COLUMN 17, IF COLUMN 17 'N' OR 'DK' →26 IF COLUMN 17 '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 15 'N') OR BEEN SICK (COLUMN 21 'Y'), SELECT Y.	IF CHILD'S NATURAL FATHER HAS DIED (COLUMN 12'N') OR BEEN SICK (COLUMN 23 'Y'), SELECT Y.
(1)	(21)	(22)	(23)	(24)	(25)	(26)
1	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N
2	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N
3	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N
4	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N
5	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N
6	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N
7	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N
8	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N
9	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N
10	Y N DK → 23	Y N DK	Y N DK → 21	Y N DK	Y N	Y N

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES AND SKIPS		
SUPPORT FOR ORPHANS AND VULNERABLE CHILDREN				
101	DO NOT READ: CHECK COLUMN 7 IN THE HOUSEHOLD SCHEDULE. **ANY CHILD AGE 0-17 YEARS? (SKIP IF EMANCIPATED)**	NUMBER OF CHILDREN 0-17 YRS: ☐☐		NONE→114
102	DO NOT READ: CHECK COLUMN 25 IN THE HOUSEHOLD SCHEDULE. **ANY CHILD WHOSE MOTHER HAS DIED OR IS VERY SICK?**	YES ..... 1 NO 2		YES→104
103	DO NOT READ: CHECK COLUMN 26 IN THE HOUSEHOLD SCHEDULE. **ANY CHILD WHOSE FATHER HAS DIED OR IS VERY SICK?**	YES ..... 1 NO 2		NO→114
104	**Record names, line numbers, and ages of all children 0-17 who are identified in columns 25, and 26 as having a mother and/or father who has died or has been very sick.**			
		CHILD (1)	CHILD (2)	CHILD (3)
	NAME	_____	_____	_____
	LINE NUMBER (FROM COLUMN 1)	☐☐	☐☐	☐☐
	AGE (FROM COLUMN 7)	☐☐	☐☐	☐☐
INTERVIEWER SAYS: "I would like to ask you about any formal, organized help or support for children that your household may have received for which you did not have to pay. By formal, organized support, I mean help provided by someone working for a program. This program could be government, private, religious, charity, or community-based."				
105	Now I would like to ask you about the support your household received for (**NAME**). In the last 12 months, has your household received any medical support for (**NAME**), such as medical care, supplies, or medicine, for which you did not have to pay?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9
106	In the last 3 months, has your household received any medical support for (**NAME**), such as as medical care, supplies, or medicine, for which you did not have to pay?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9
107	In the last 12 months, has your household received any emotional or psychological support for (**NAME**), such as companionship, counseling from a trained counselor, or spiritual support, which you received at home and for which you did not have to pay?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9 NO, DK,R→ 109	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9 NO, DK,R→ 109	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9 NO, DK,R→ 109

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES AND SKIPS		
SUPPORT FOR ORPHANS AND VULNERABLE CHILDREN (continued)				
108	Did your household receive any of this emotional or psychological support for (**NAME**) in the past 3 months?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9
109	In the last 12 months, has your household received any material support for (**NAME**), such as clothing, food, or financial support, for which you did not have to pay?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9 NO, DK,R→ 111	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9 NO, DK,R→ 111	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9 NO, DK,R→ 111
110	Did your household receive any of this material support for (**NAME**) in the past 3 months?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9
111	In the last 12 months, has your household received any social support for (**NAME**) such as help in household work, training for a caregiver, or legal services, for which you did not have to pay?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9 NO, DK,R→ 113	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9 NO, DK,R→ 113	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9 NO, DK,R→ 113
112	Did your household receive any of this social support for (**NAME**) in the past 3 months?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9
113	In the last 12 months, has your household received any support for (**NAME**)'s schooling, such as allowance, free admission, books, or supplies, for which you did not have to pay?	YES ..... 1 NO, DID NOT RECEIVE SUPPORT ..... 2 NO, CHILD DOES NOT ATTEND SCHOOL ..... 3 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO, DID NOT RECEIVE SUPPORT ..... 2 NO, CHILD DOES NOT ATTEND SCHOOL ..... 3 DON'T KNOW ..... -8 REFUSED ..... -9	YES ..... 1 NO, DID NOT RECEIVE SUPPORT ..... 2 NO, CHILD DOES NOT ATTEND SCHOOL ..... 3 DON'T KNOW ..... -8 REFUSED ..... -9

CONTINUE TO NEXT CHILD IF OTHER CHILDREN WHOSE MOTHER AND/OR FATHER HAS DIED OR IS VERY SICK.

MATRIX END

INTERVIEWER SAYS: "Thank you for the information regarding (**NAME**)."

IF THERE IS ANOTHER CHILD 0-17 YEARS IN THE HOUSEHOLD WHO HAS BEEN IDENTIFIED IN COLUMN 17 AS HAVING A MOTHER/FATHER WHO HAS DIED OR IS VERY SICK BESIDES (NAME) → CONTINUE TO 106 AND ASK ABOUT THE NEXT CHILD.

INTERVIEWER SAYS: "Next, I would like to ask you about (**NAME**)".

☐ **TICK IF CONTINUATION SHEET REQUIRED.**

IF NO OTHER CHILDREN, CONTINUE HOUSEHOLD INTERVIEW.

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
HOUSEHOLD DEATHS			
114	Now I would like to ask you more questions about your household. Has any usual resident of your household died since January 1, 2020?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	NO, DK, R → 201
115	How many usual household residents died since January 1, 2020?	NUMBER OF DEATHS ☐☐	

ASK 116-119 AS APPROPRIATE FOR EACH PERSON WHO DIED. IF THERE WERE MORE THAN 3 DEATHS USE ADDITIONAL QUESTIONNAIRES.

		NAME 1ST DEATH	NAME 2ND DEATH	NAME 3RD DEATH
116	What was the name of the person who died (most recently/before him/her)?	_____	_____	_____
117	When did (**NAME**) die? Please give your best guess.	DAY ☐☐ MONTH ☐☐ YEAR ☐☐ DON'T KNOW ..... -8 REFUSED ..... -9	DAY ☐☐ MONTH ☐☐ YEAR ☐☐ DON'T KNOW ..... -8 REFUSED ..... -9	DAY ☐☐ MONTH ☐☐ YEAR ☐☐ DON'T KNOW ..... -8 REFUSED ..... -9
118	Was (**NAME**) male or female?	MALE ..... 1 FEMALE ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	MALE ..... 1 FEMALE ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	MALE ..... 1 FEMALE ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9
119	How old was (**NAME**) when (he/she) died? RECORD DAYS IF LESS THAN 1 MONTH, MONTHS IF LESS THAN 1 YEAR, AND COMPLETED YEARS IF 1 YEAR OR MORE.	DAYS ☐☐ MONTHS ☐☐ YEARS ☐☐ DON'T KNOW ..... -8 REFUSED ..... -9	DAYS ☐☐ MONTHS ☐☐ YEARS ☐☐ DON'T KNOW ..... -8 REFUSED ..... -9	DAYS ☐☐ MONTHS ☐☐ YEARS ☐☐ DON'T KNOW ..... -8 REFUSED ..... -9

CONTINUE TO NEXT DEATH ACCORDING UP TO THE NUMBER REPORTED FROM 115.

☐ **TICK IF CONTINUATION SHEET REQUIRED.**

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
HOUSEHOLD CHARACTERISTICS			
INTERVIEWER SAY: "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 (SPECIFY) ..... 96 _____ DON'T KNOW ..... -8 REFUSED ..... -9	
202	What kind of toilet facility do members of your household usually use?	FLUSH TO SEPTIC TANK ..... 12 FLUSH TO PIT LATRINE ..... 13 FLUSH TO SOMEWHERE ELSE ..... 14 FLUSH, DON'T KNOW WHERE ..... 15 FLUSH TO PIPED SEWER SYSTEM ..... 16 VENTILATED IMPROVED PIT LATRINE (VIP) ..... 22 PIT LATRINE, WITH SLAB (NOT WASHABLE) ..... 23 PIT LATRINE, WITHOUT SLAB/OPEN PIT ..... 24 PIT LATRINE, WITH SLAB (WASHABLE) ..... 25 COMPOSTING TOILET ..... 31 BUCKET TOILET ..... 41 HANGING TOILET/HANGING LATRINE ..... 51 NO FACILITY/BUSH/FIELD ..... 61 OTHER (SPECIFY) ..... 96 _____ DON'T KNOW ..... -8 REFUSED ..... -9	IF NO FACILITY/ BUSH/ FIELD = DK, R→204
203	Do you share this toilet facility with other households?	YES ..... 1 NO ..... 2 DON'T KNOW ..... -8 REFUSED ..... -9	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
HOUSEHOLD CHARACTERISTICS (continued)			
204	Does your household have	ELECTRICITY ..... A A WORKING RADIO ..... B A WORKING TELEVISION ..... C A WORKING TELEPHONE/MOBILE TELEPHONE ..... D A WORKING REFRIGERATOR ..... E NONE OF THE ABOVE ..... F DON'T KNOW ..... Y REFUSED ..... Z	
205	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 (SPECIFY) ..... 96 _____ DON'T KNOW ..... -8 REFUSED ..... -9	
206	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 (SPECIFY) ..... 96 _____ DON´T KNOW ..... -8 REFUSED ..... -9	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
HOUSEHOLD CHARACTERISTICS (continued)			
207	Main material of the roof (RECORD OBSERVATION).	**NATURAL ROOFING** NO ROOF ..... 11 THATCH/PALM LEAF ..... 12 DUNG / MUD ..... 13 **RUDIMENTARY ROOFING** CORRUGATED IRON ..... 21 TIN CANS ..... 22 **FINISHED ROOFING** ASBESTOS SHEET ..... 31 CONCRETE ..... 32 TILES ..... 33 OTHER (SPECIFY) ..... 96 _____ DON´T KNOW ..... -8 REFUSED ..... -9	
208	Main material of the exterior walls (RECORD OBSERVATION).	**NATURAL WALLS** NO WALLS ..... 11 CANE/PALM/TREE TRUNKS ..... 12 DUNG / MUD ..... 13 **RUDIMENTARY WALLS** BAMBOO WITH MUD ..... 21 STICKS 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 (SPECIFY) ..... 96 _____	
209	How many rooms are used for sleeping?	NUMBER OF ROOMS: ☐☐	
210	Does any member of your household own:	A BICYCLE ..... A A WORKING MOTORCYCLE OR MOTOR SCOOTER ..... B A WORKING CAR OR TRUCK ..... C A WORKING BOAT WITH A MOTOR ..... D AN ANIMAL DRAWN CART ..... F NONE OF THE ABOVE ..... E DON´T KNOW ..... Y REFUSED ..... Z	

NO.	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
HOUSEHOLD CHARACTERISTICS (continued)			
211	Altogether, how many COWS do members of your household own?	NUMBER OF COWS: ☐☐ OWN BUT NOT SURE HOW MANY.....-7 REFUSED.....-9	
212	Altogether, how many GOATS/SHEEP do members of your household own?	NUMBER OF GOATS/SHEEPS: ☐☐ OWN BUT NOT SURE HOW MANY.....-7 REFUSED.....-9	
213	Altogether, how many POULTRY (e.g., DUCKS, CHICKENS) do members of your household own?	NUMBER OF POULTRY (E.G. DUCKS, CHICKENS): ☐☐ OWN BUT NOT SURE HOW MANY.....-7 REFUSED.....-9	
214	Altogether, how many DOGS do members of your household own?	NUMBER OF DOGS: ☐☐ OWN BUT NOT SURE HOW MANY.....-7 REFUSED.....-9	
215	Altogether, how many WORK ANIMALS (CAMELS, HORSES, DONKEYS) do members of your household own?	NUMBER OF WORK ANIMALS: ☐☐ OWN BUT NOT SURE HOW MANY.....-7 REFUSED.....-9	

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? (INTERVIEWER: READ THE RESPONSES ALOUD. SELECT UP TO THREE RESPONSES FOR THE MOST IMPORTANT SOURCES OF OUTSIDE SUPPORT.)	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 (EG, 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 (SPECIFY) ..... X _____ DON'T KNOW ..... Y REFUSED ..... Z	NOTHING, DON'T KNOW→END OF SECTION

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.	HOUR:	☐☐
	IF START TIME IS 3:12 PM, RECORD 15 HOURS, 12 MINUTES, NOT 03 HOURS, 12 MINUTES.	MINUTES:	☐☐

INTERVIEWER OBSERVATIONS:

TO BE COMPLETED AFTER THE INTERVIEW:

COMMENTS ABOUT RESPONDENT:

COMMENTS ABOUT SPECIFIC QUESTIONS:

GENERAL QUESTIONS:

APPENDIX F ADULT QUESTIONNAIRE

NO	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
LANGUAGE			
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	LANGUAGE OF QUESTIONNAIRE	ENGLISH=1 KISWAHILI=2	
L2	LANGUAGE OF INTERVIEW	ENGLISH=1 KISWAHILI=2	
MODULE ONE: 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."			
101	Have you ever attended school?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	IF NO, DON'T KNOW, REFUSED → 105
102	Are you currently enrolled in school?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
103	What is your highest level of school you attended? (Interviewer: If respondent mentions secondary or post-secondary training, probe to identify if it is secondary or O-level or A-level.)	PRE-PRIMARY=0 PRIMARY=1 POST-PRIMARY TRAINING=2 SECONDARY (O-LEVEL)=3 POST SECONDARY (O-LEVEL) TRAINING=4 SECONDARY (A-LEVEL)=5 POST SECONDARY (A-LEVEL) TRAINING=6 UNIVERSITY=7 DON'T KNOW=-8 REFUSED=-9	
104	What is the highest grade you have completed?	PRE SCHOOL=0 STD 1=1 STD 2=2 STD 3=3 STD 4=4 STD 5=5 STD 6=6 STD 7=7 STD 8=8 TRAINING AFTER P/E=9 ADULT ED=10 FORM 1=11 FORM 2=12 FORM 3=13 FORM 4= 14 TRAINING AFTER O-LEVEL=15 FORM 5=16 FORM 6=17 TRAINING AFTER A-LEVEL=18 TERTIARY NON-UNI (AT LEAST FOR ONE YEAR)=20 TERTIARY UNI=21 DON'T KNOW=-8 REFUSED=-9	
105	How long have you lived in this area or community? (Interviewer: Key in months if less than a year. Swipe forward if always lived here, don't know, or refused.)	MONTHS ____=2 YEARS ____=3 I HAVE ALWAYS LIVED HERE = 3 DON'T KNOW = -8 REFUSED = -9	IF YEARS OR HAVE ALWAYS LIVED HERE → 108

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE ONE: RESPONDENT BACKGROUND (continued)			
106	Just before you moved here, did you live in a city, in a town, or in a rural area?	CITY=1 TOWN=2 RURAL AREA=3 DON'T KNOW=-8 REFUSED=-9	
107	Before you moved here, which region did you live in? If you lived outside of Tanzania, which country did you live in?	DODOMA=1 ARUSHA=2 KILIMANJARO=3 TANGA=4 MOROGORO=5 PWANI=6 DAR ES SALAAM=7 LINDI=8 MTWARA=9 RUVUMA=10 IRINGA=11 MBEYA=12 SINGIDA=13 TABORA=14 RUKWA=15 KIGOMA=16 SHINYANGA=17 KAGERA=18 MWANZA=19 MARA=20 MANYARA=21 NJOMBE=22 KATAVI=23 SIMIYU=24 GEITA=25 SONGWE=26 KASKAZINI UNGUJA=51 KUSINI UNGUJA=52 MJINI MAGHARIBI=53 KASKAZANI PEMBA=54 KUSINI PEMBA=55 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED =-9 ANGOLA=1 BURUNDI=2 CHINA=3 COMOROS=4 DEMOCRATIC REPUBLIC OF THE CONGO=5 INDIA=6 KENYA=7 MALAWI=8 MOZAMBIQUE=9 NIGERIA=10 PAKISTAN=11 RWANDA=12 SOUTH AFRICA=13 UGANDA=14 ZAMBIA=15 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED =-9	
108	Have you ever lived away from home for more than 1 month at a time?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	IF NO, DON'T KNOW, REFUSED → 115

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE ONE: RESPONDENT BACKGROUND (continued)			
109	When was the last time you lived away from home for over a month?	MONTH_____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR_____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	IF > 1 YEAR BEFORE CURRENT DATE, OR DON'T KNOW OR REFUSED MONTH AND DON'T KNOW OR REFUSED YEAR → 111
110	How many times have you been away from home for one or more months IN THE PAST YEAR?	NUMBER OF TIMES ____ DON'T KNOW=-8 REFUSED=-9	
111	The last time you were away from home for more than one month, where were you? If you were in more than one place while you were away, please give the place you spent the most time. (Interviewer: Probe to get specific information.)	ANOTHER COMMUNITY IN THIS DISTRICT=1 ANOTHER DISTRICT IN THIS REGION=2 ANOTHER REGION=3 ANOTHER COUNTRY=4 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED =-9	IF ANOTHER COMMUNITY IN THIS DISTRICT, ANOTHER DISTRICT IN THIS REGION, DON'T KNOW, OR REFUSED → 114 IF ANOTHER REGION → 112 IF ANOTHER COUNTRY → 113
112	The last time you were away from home for more than a month, where were you? If you were in more than one place while you were away, please give the place you spent the most time. (Interviewer: Probe to get more information.)	DODOMA=1 ARUSHA=2 KILIMANJARO=3 TANGA=4 MOROGORO=5 PWANI=6 DAR ES SALAAM=7 LINDI=8 MTWARA=9 RUVUMA=10 IRINGA=11 MBEYA=12 SINGIDA=13 TABORA=14 RUKWA=15 KIGOMA=16 SHINYANGA=17 KAGERA=18 MWANZA=19 MARA=20 MANYARA=21 NJOMBE=22 KATAVI=23 SIMIYU=24 GEITA=25 SONGWE=26 KASKAZANI UNGUJA=51 KUSINI UNGUJA=52 MIJINI MAGHARIBI=53 KASKAZANI PEMBA=54 KUSINI PEMBA=55 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	IF ANY BUT OTHER → 114

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE ONE: RESPONDENT BACKGROUND (continued)			
113	The last time you were away from home for more than a month, where were you? If you were in more than one place while you were away, please give the place you spent the most time. (Interviewer: Probe to get more information.)	ANGOLA=1 BURUNDI=2 CHINA=3 COMOROS=4 DEMOCRATIC REPUBLIC OF THE CONGO=5 INDIA=6 KENYA=7 MALAWI=8 MOZAMBIQUE=9 NIGERIA=10 PAKISTAN=11 RWANDA=12 SOUTH AFRICA=13 UGANDA=14 ZAMBIA=15 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	
114	What was the main reason you went there?	WORK=1 SCHOOL/UNIVERSITY=2 FAMILY/MARRIAGE=3 ACCESS HEALTH OR OTHER SERVICES=4 CONFLICT OR NATURAL DISASTER (FLOODS, CYCLONE, DROUGHT)=5 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	
115	Have you done any work in the last 12 months for which you received cash or goods as payment? This includes work on the family farm or business for which you may not have been paid directly.	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	IF NO, DON'T KNOW, REFUSED → 201
116	Have you done any work in the last seven days for which you received cash or goods as payment? This includes work on the family farm or business for which you may not have been paid directly.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
117	What is your occupation? That is, what kind of work do you mainly do?	MINING=1 AGRICULTURE/FARMING=2 TRANSPORT=3 CONSTRUCTION=4 UNIFORMED PERSONNEL=5 INFORMAL TRADE=6 GARMENT INDUSTRIES=7 HOUSEKEEPER=8 SEX WORKER=9 STUDENT=10 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	
118	Where do you normally work? In your home community, elsewhere in region/ country, or outside the country?	HOME COMMUNITY=1 SAME COUNTRY, DIFFERENT COMMUNITY=2 OUTSIDE THE COUNTRY=3 DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE 2: MARRIAGE			
Interviewer says: "Now I would like to ask you about your current and previous relationships and/or marriages."			
201	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	IF NO, DON'T KNOW, REFUSED AND A MAN → 331 IF NO, DON'T KNOW, REFUSED AND A WOMAN → 301
202	How old were you the first time you married or started living with a [man/woman] as if married?	____YEARS OLD DON'T KNOW = -8 REFUSED = -9	
203	What is your marital status now: are you married, living together with someone as if married, widowed, divorced, or separated/single?	MARRIED=1 LIVING TOGETHER=2 WIDOWED=3 DIVORCED=4 SEPARATED/SINGLE=5 DON'T KNOW=-8 REFUSED=-9	IF WIDOWED, DIVORCED, SEPARATED/ SINGLE, DON'T KNOW, REFUSED AND A MAN → 331 IF WIDOWED, DIVORCED, SEPARATED/ SINGLE, DON'T KNOW, REFUSED AND A WOMAN→ 301
Interviewer says: "The next several questions are about your current husband, wife or partner(s)."			
MARRIAGE GROUP FOR MEN			
204	Altogether, how many wives or live-in partners do you have who live with you here in this household?	NUMBER OF WIVES OR PARTNERS LIVING IN HOUSEHOLD_____ DON'T KNOW=-8 REFUSED=-9	IF 0, DON'T KNOW, REFUSED → 206
205	Please enter the name of your wife/ partner that lives with you in this household.	_____ (REPEAT AS NECESSARY) DON'T KNOW=-8 REFUSED=-9	
206	How many wives or live-in partners do you have who live elsewhere? This would include wives or partners that you stay with or support in other households. (Interviewer: enter '0' for none.)	NUMBER OF WIVES/LIVE-IN PARTNERS____ DON'T KNOW=-8 REFUSED=-9	IF NONE, DON'T KNOW, REFUSED → 331
207	You mentioned that you have wife/ wives who live elsewhere. Where are they?	STAYING IN A DIFFERENT HOUSEHOLD, SAME WARD=1 STAYING IN A DIFFERENT WARD, SAME REGION=2 STAYING IN A DIFFERENT REGION=3 STAYING IN A DIFFERENT COUNTRY=4 DON'T KNOW=-8 REFUSED=-9	FOR ALL → 331

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MARRIAGE GROUP FOR WOMEN			
208	Is your husband or partner living with you now or is he staying elsewhere?	LIVING IN THE HOUSEHOLD=0 STAYING IN A DIFFERENT HOUSEHOLD, SAME WARD=1 STAYING IN A DIFFERENT WARD, SAME REGION/DISTRICT=2 STAYING IN A DIFFERENT REGION/ DISTRICT=3 STAYING IN A DIFFERENT COUNTRY=4 DON'T KNOW=-8 REFUSED=-9	IF NOT LIVING IN THE HOUSEHOLD, DON'T KNOW, REFUSED → 211
209	Please select the husband/partner who lives with you (SEE LIST OF PERSONS ON HH ROSTER)	_____ NOT LISTED IN HOUSEHOLD=96	IF LISTED → 211
210	Please enter the name of your husband/partner that lives with you.	_____ DON'T KNOW=-8 REFUSED=-9	
211	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 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 301
212	Including yourself, in total, how many wives or live-in partners does your husband or partner have?	NUMBER OF WIVES/LIVE-IN PARTNERS___ DON'T KNOW=-8 REFUSED=-9	
MODULE THREE: REPRODUCTION			
301	How many times have you 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, even if the baby subsequently died. (Code '0' if none.)	NUMBER OF LIVE BIRTHS ___ DON'T KNOW=-8 REFUSED=-9	IF 0, DON'T KNOW, REFUSED → 330
302	Where did you deliver your child/ children? (Select all that apply. Probe participant whether delivered at any other places.)	HOME=A HOSPITAL/CLINIC=B TRADITIONAL BIRTH ATTENDANT=C OTHER=X _____ (SPECIFY) DON'T KNOW=Y REFUSED=Z	
303	How many live births have you had since the 1st of January 2019? (Code '0' if none. Twins/triplets are considered one live birth if born alive.)	NUMBER OF LIVE BIRTHS ___ DON'T KNOW=-8 REFUSED=-9	IF 0, NO, DON'T KNOW, REFUSED → 330
Interviewer says: "Now I would like to ask you some questions about the last pregnancy that resulted in a live birth since the 1st of January, 2019."			
304	Did your last pregnancy result in birth to twins or more?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 307

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE THREE: REPRODUCTION (continued)			
305	What is the name of the [BIRTHORDER*] born child from your last pregnancy that resulted in a live birth? (If the child was not named before death, input birth and the birth order number. For example, "BIRTH 1".)	NAME OF CHILD_____	
306	Was there another multiple born alive?	YES=1 NO=2	IF YES → 305 IF NO → 308
307	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, even if the baby subsequently died. (IF THE CHILD WAS NOT NAMED BEFORE DEATH, INPUT "BIRTH 1")	NAME OF CHILD _____	
308	During your last pregnancy with [305/307]?, did you visit a health facility for antenatal care?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF DON'T KNOW, REFUSED → 316
Interviewer says: "I will now be asking you questions on HIV testing. Please remember that your responses will be kept confidential and will not be shared with anyone else."			
309	Have you ever tested for HIV before your pregnancy with [305/307]?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 312
310	Did you test positive for HIV before your pregnancy with [305/307]?	YES = 1 NO = 2 DON'T KNOW =-8 REFUSED =-9	IF NO, DON'T KNOW, REFUSED → 312
311	At the time of your first antenatal care visit when you were last pregnant with [305/307], were you already taking ARVs, that is, antiretroviral mediations to treat HIV?	YES = 1 NO = 2 DON'T KNOW =-8 REFUSED =-9	IF YES → 318 IF NO, DON'T KNOW, REFUSED → 314
312	Were you tested for HIV anytime during pregnancy or delivery with [305/307]?	YES = 1 NO = 2 DON'T KNOW =-8 REFUSED =-9	IF NO, DON'T KNOW, REFUSED → 316
313	What was the result of your last HIV test during your last pregnancy with [305/307]?	POSITIVE=1 NEGATIVE=2 UNKNOWN/INCONCLUSIVE=3 DID NOT RECEIVE RESULTS=4 DON'T KNOW=-8 REFUSED=-9	IF NEGATIVE, UNKNOWN /INCONCLUSIVE, DID NOT RECEIVE RESULTS, DON'T KNOW, REFUSED → 316
314	Did you take ARVs at any time during your last pregnancy with [305/307] to prevent the child from getting HIV?	YES = 1 NO = 2 DON'T KNOW =-8 REFUSED =-9	IF YES, DON'T KNOW, REFUSED → 318

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE THREE: REPRODUCTION (continued)			
315	What was the main reason you did not take ARVs while you were pregnant with [305/307]?	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 (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	ALL → 318
316	Were you tested for HIV at any time after delivery of your last pregnancy with [305/307]? For example, were you tested while you were breastfeeding or after your completed breastfeeding?	YES = 1 NO = 2 DON'T KNOW =-8 REFUSED =-9	IF NO, DON'T KNOW, REFUSED → 318
317	What was the result of the HIV test that you received after delivery of your last pregnancy with [305/307]?	POSITIVE=1 NEGATIVE=2 UNKNOWN/INCONCLUSIVE=3 DID NOT RECEIVE RESULTS=4 DON'T KNOW=-8 REFUSED=-9	
318	When did you give birth to [305/307]? 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	
319	Is 305/307] still alive?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF YES, DON'T KNOW, REFUSED → 322
320	How old was [305/307] in years when he/she died? (Key '0' if child was less than one year old.)	YEARS____ DON'T KNOW=-8 REFUSED=-9	IF >0 → 322

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE THREE: REPRODUCTION (continued)			
321	How old was [305/307] in months when he/she died? (Key '0' if child was less than one month old.)	MONTHS ___ DON'T KNOW=-8 REFUSED=-9	
322	Did you ever breastfeed [305/307]?	YES=1 NO, NEVER BREASTFEED=2 NO, CHILD DIED BEFORE BREASTFEEDING=3 DON'T KNOW=-8 REFUSED=-9	IF NO, NEVER BREASTFEED; NO, CHILD DIED BEFORE BREASTFEEDING; DON'T KNOW; REFUSED → 324
323	Are you still breastfeeding [305/307]?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
324	After [305/307] was born, was he/she tested for HIV?	YES=1 NO, NOT TESTED FOR HIV=2 NO, CHILD DIED BEFORE TESTING=3 DON'T KNOW=-8 REFUSED=-9	IF NO, NOT TESTED FOR HIV; NO, CHILD DIED BEFORE TESTING; DON'T KNOW, REFUSED → 330
325	How old was [305/307] when he/she first tested for HIV? (Only one option may be selected. For example, answer only in weeks, months or in years. Code '0' if less than 1 week. Swipe forward to enter DON'T KNOW or REFUSED.)	WEEKS ___ = 1 MONTHS ___ = 2 YEARS ___ = 3 DON'T KNOW=-8 REFUSED=-9	
326	What was the result of [305/307]'s first HIV test?	POSITIVE; CHILD HAS HIV=1 NEGATIVE; CHILD DOES NOT HAVE HIV=2 UNKNOWN/INCONCLUSIVE=3 DID NOT RECEIVE RESULTS=4 DON'T KNOW=-8 REFUSED=-9	
327	Was [305/307] tested for HIV after you stopped breastfeeding?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
328	How old was [305/307] when he/she last tested for HIV? (Only one option may be selected. For example, answer only in weeks, months or in years. Code '0' if less than 1 week. Swipe forward if child tested only once for HIV, DON'T KNOW, or REFUSED.)	WEEKS ___ = 1 MONTHS ___ = 2 YEARS ___ = 3 CHILD ONLY TESTED ONCE FOR HIV (FIRST TEST IS THE SAME AS LAST TEST)=4 DON'T KNOW=-8 REFUSED=-9	
329	What was the result of [305/307]'s most recent HIV test?	POSITIVE; CHILD HAS HIV=1 NEGATIVE; CHILD DOES NOT HAVE HIV=2 UNKNOWN/INCONCLUSIVE=3 DID NOT RECEIVE RESULTS=4 DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE THREE: REPRODUCTION (continued)			
Interviewer says: "Thank you for the information regarding [305/307].			
Interviewer says: "I will now ask about current pregnancies."			
330	Are you pregnant now?	YES = 1 NO= 2 DON'T KNOW =8 REFUSED = -9	IF YES → A1
Interviewer says: "I will now ask you about family planning."			
331	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	IF NO, DON'T KNOW, REFUSED → A1
332	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/CYCLE BEADS/STANDARD DAYS=I WITHDRAWL=J NOT HAVING SEX=K OTHER (SPECIFY) =X _____ DON'T KNOW=Y REFUSED=Z	
MODULE A: PEDIATRIC ELICITATION RATIO			
Interviewer says: "Now I would like to ask you about all the children to whom you have given birth and who are alive today. This will be about all of your living children of all ages."			
A1	Do you have any children to whom you have given birth who are currently living with you?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	IF NO, DON'T KNOW, REFUSED → A3
A2	How many children to whom you have given birth live with you currently?	NUMBER OF CHILDREN_____ DON'T KNOW=-8 REFUSED=-9	
A3	Do you have any children to whom you have given birth who are alive but do not currently live with you?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	IF NO, DON'T KNOW, REFUSED → A5
A4	How many children to whom you have given birth are alive but do not currently live with you?	NUMBER OF CHILDREN_____ DON'T KNOW=-8 REFUSED=-9	
A5	Just to make sure that I have this right: you have TOTAL [childtotal] children who are alive today to whom you have given birth?	CONFIRMED= 1 NOT CONFIRMED= 2	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE A: PEDIATRIC ELICITATION RATIO (continued)			
A6	How many of your children who are alive today are 19 years of age or younger?	NUMBER OF CHILDREN_____ DON'T KNOW=-8 REFUSED=-9	
A7	How many of your children who are alive today are 14 years of age or younger?	NUMBER OF CHILDREN_____ DON'T KNOW=-8 REFUSED=-9	
MODULE FOUR: MALE CIRCUMCISION (SKIP IF FEMALE)			
Interviewer says: "I will be asking a few questions about circumcision. Circumcision is the complete removal of the foreskin from the penis. If you feel comfortable, I can show you a picture of an uncircumcised penis, a partially circumcised penis and a completely circumcised penis."			
401	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, FULLY CIRCUMCISED = 1 YES, PARTIALLY CIRCUMCISED = 2 NOT CIRCUMCISED =3 DON'T KNOW = -8 REFUSE TO ANSWER = -9	IF YES, FULLY CIRCUMCISED, YES, PARTIALLY CIRCUMCISED → 403 IF DON'T KNOW, REFUSED → END OF MODULE
402	Are you planning to get circumcised within the next 6 months?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF YES, NO, DON'T KNOW, REFUSED → END OF MODULE
Interviewer says: "Some men are circumcised by a medical provider such as a doctor, clinical officer, nurse, or midwife. Some men are circumcised by a traditional practitioner. Some men are circumcised by both a medical provider and a traditional practitioner. "			
403	Were you circumcised by a traditional practitioner or circumciser?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
404	Were you circumcised by a medical provider? By medical provider, I mean a doctor, clinical officer, nurse or midwife.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → END OF MODULE
405	How old were you when you were circumcised by the medical provider? Please give your best guess. (Interviewer: If less than one year, code '0'.)	_____ YEARS OLD DON'T KNOW=-8 REFUSED=-9	
MODULE FIVE: SEXUAL ACTIVITY			
Interviewer says: "In this part of the interview, I will be asking about your sexual relationships and practices. These questions will help us better understand how they may affect your life and risk for HIV. Sex is when a penis enters a vagina." "Remember 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."			
501	How old were you when you had sex for the very first time? (If they are unsure, confirm if they have had vaginal sex.)	AGE AT FIRST SEX____ NEVER HAD SEX=-96 DON'T KNOW=-8 REFUSED=-9	IF NEVER HAD SEX, → B1 IF AGE AT FIRST SEX > 11 YEARS, DON'T KNOW, REFUSED → 503

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE FIVE: SEXUAL ACTIVITY (continued)			
502	If they said an age less than 12 years: Confirm age at first sex. Are you sure this is what the participant said?	YES= 1 NO = 2	
503	People often have sex with different people over their lifetime. In total, with how many different people have you had sex in your lifetime? Please give your best guess.	NUMBER OF PEOPLE ___ DON'T KNOW=-8 REFUSED=-9	
504	How many different people have you had sex with in the last 12 months? (If none, code '0'. If number of partners is greater than 100, enter '100.')	NUMBER OF PEOPLE___ _____ DON'T KNOW=-8 REFUSED=-9	IF 0, DON'T KNOW, REFUSED → B1
Interviewer says: "Now I would like to ask you some questions about the people you have had sex with in the last 12 months. Let me assure you again that your answers are completely confidential and will not be told to anyone. I will first ask you about the most recent person you had sex with." (Ask only about the last 3 persons the participant has had sex with).			
505	Is the person that you had sex with a spouse or a partner who lives in this household?	YES = 1 NO = 2	IF NO → 507
506	Please select the name below from the household membership list. Please identify the person you had sex with.	HOUSEHOLD LINE NO. ____ NOT LISTED IN HOUSEHOLD=96	
507	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. Is [INITIALS] the most recent person you had sex with?	[INITIALS] _____ YES = 1 NO = 2	
508	What is your relationship with [INITIALS]?	HUSBAND/WIFE=1 LIVE-IN PARTNER=2 PARTNER, NOT LIVE-IN=3 EX-SPOUSE/EX-PARTNER=4 FRIEND/ACQUAINTANCE=5 SEX WORKER=6 SEX WORKER CLIENT=7 STRANGER=8 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	
509	Is [INITIALS] male or female?	MALE=1 FEMALE=2 DON'T KNOW=-8 REFUSED=-9	
510	How old is [INITIALS]? Please give your best guess.	____YEARS OLD DON'T KNOW=-8 REFUSED=-9	
511	The last time you had sex with [INITIALS], was a condom used?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE FIVE: SEXUAL ACTIVITY (continued)			
512	The last time you had sex with [INITIALS], did either of you drink alcohol beforehand?	ONLY I WAS DRINKING=1 ONLY PARTNER WAS DRINKING=2 BOTH WERE DRINKING=3 NEITHER=4 DON'T KNOW=-8 REFUSED=-9	
513	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	
514	What is the HIV status of [INITIALS]? (Interviewer: Read responses aloud).	HE/SHE IS POSITIVE (DID NOT TEST TOGETHER)=1 HE/SHE IS POSITIVE, TESTED TOGETHER=2 HE/SHE IS NEGATIVE (DID NOT TEST TOGETHER)=3 HE/SHE IS NEGATIVE, TESTED TOGETHER=4 DON'T KNOW STATUS=-8 REFUSED=-9	
515	Interviewer says: "I will now ask you about the person you have had sex with previous to [INITIALS]."		SKIP IF 503 <= 1 IF 503 > 1 → 504
MODULE B: HIV KNOWLEDGE AND ATTITUDES			
Interviewer says: "I would now like to ask you some questions about people's attitudes towards people living with HIV."			
B1	Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had HIV?	YES=1 NO=2 DON'T KNOW/NOT SURE/DEPENDS=-8 REFUSED=-9	
B2	Do you think that children living with HIV should be able to attend school with children who are HIV negative?	YES=1 NO=2 DON'T KNOW/NOT SURE/DEPENDS=-8 REFUSED=-9	
B3	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	
B4	Do you agree or disagree with the following statement? "When taken as prescribed by a health worker, HIV medications decrease the amount of HIV in the blood of people living with HIV. Therefore, the amount of virus in their blood becomes too low to detect in a laboratory test."	AGREE=1 DISAGREE=2 DON'T KNOW/NOT SURE/DEPENDS=-8 REFUSED=-9	
B5	Do you agree or disagree with the following statement? "A person living with HIV who is taking HIV medications cannot pass HIV to a sexual partner once a laboratory test can no longer detect the HIV virus in their blood."	AGREE=1 DISAGREE=2 DON'T KNOW/NOT SURE/DEPENDS=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE SIX: HIV TESTING			
Interviewer says: "I would like to ask you some questions about HIV testing."			
601	Have you seen a doctor, clinical officer or nurse in a health facility in the last 12 months?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 603
602	During any of your visits to the health facility in the last 12 months, did a doctor, clinical officer, nurse, or a lay counselor offer you an HIV test?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
603	Have you ever tested for HIV?	YES =1 NO =2 DON'T KNOW = -8 REFUSED = -9	IF YES, DON'T KNOW, REFUSED → 605 IF DON'T KNOW, REFUSED → 611
604	Why have you never been tested for HIV? (Interviewer: Select all that apply. Prompt for any more reasons.)	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 (SPECIFY) =X _____ DON'T KNOW=-Y REFUSED=-Z	ALL → 611
605	When was your last HIV test? Please give month and year if you can.	MONTH _____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR _____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	
606	Where was your last HIV 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 VMMC CLINIC=11 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE SIX: HIV TESTING (continued)			
607	When you last tested for HIV, what was the main reason you tested?	WAS OFFERED TEST BY HEALTH CARE OR OUTREACH WORKER=1 WANTED TO KNOW MY HIV STATUS=2 FELT AT RISK=3 FELT SICK=4 NEW PARTNER=5 PREGNANCY=6 MY PARTNER TESTED POSITIVE=7 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	
608	What was the result of your last HIV test?	POSITIVE=1 NEGATIVE=2 UNKNOWN/INCONCLUSIVE=3 DID NOT RECEIVE RESULTS=4 DON'T KNOW=-8 REFUSED=-9	IF NEGATIVE, UNKNOWN/ INCONCLUSIVE, DID NOT RECEIVE RESULTS, DON'T KNOW, REFUSED → 611
609	When was your first positive HIV test? Please give month and year. This will be the very first HIV-positive test result that you have received. This will be the first time a health care provider told you that you had HIV. (Interviewer: Probe to verify date. Suggest that they can look at treatment card if available.)	MONTH _____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR _____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	
610	When was your last negative HIV test? This would be your last negative before you tested positive. Please give month and year. (Interviewer: Swipe forward if no previous HIV test.)	MONTH _____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR _____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9 NO PREVIOUS HIV NEGATIVE TEST BEFORE THE POSITIVE TEST=3	ASK ONLY TO THOSE WHO SELF-REPORTED HIV POSITIVE (IF 608=YES OR 308=YES OR 311=POSITIVE OR 315=POSITIVE)
611	Has a healthcare provider ever told you that you have HIV?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	ASK IF NEVER TESTED OR NEVER TESTED POSITIVE (IF 307 <> 1 AND 310 <> 1 AND 314 <> 1 AND 603 <> 1 AND 307 <> 1 AND 310 <> 1 AND 315 <> 1 AND 608 <> 1) IF NO, DON'T KNOW, REFUSED→ 613
612	When did a healthcare provider first tell you that you have HIV?	MONTH _____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR _____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE SIX: HIV TESTING (continued)			
Interviewer says: "There are now HIV tests that you can do yourself at home. Some of these self-test kits allow you to test yourself for HIV by swabbing your mouth or pricking your finger and testing the fluid for HIV."			
613	Have you ever tested yourself for HIV using a self-test kit?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
Interviewer says: "Now I would like to ask you a few questions about your experiences living with HIV."			
614	Of the following people, who have you told that you are HIV positive? (Read the list out loud. Select all that apply.)	NO ONE=A SPOUSE/SEX PARTNER=B DOCTOR=C FRIEND=D FAMILY MEMBER=E OTHER (SPECIFY) =X _____ DON'T KNOW=Y REFUSED=Z	SHOW SCREEN IF INDIVIDUAL HAS SAID TESTED POSITIVE (IF 307=YES OR 311=POSITIVE OR 315=POSITIVE OR 611=YES)
615	Do you agree or disagree with the following statement? "In the last 12 months, I have felt ashamed because of my HIV status."	AGREE=1 DISAGREE=2 DON'T KNOW/NOT SURE=8 REFUSED=-9	
616	In the last 12 months, have people talked badly about you because of your HIV status?	YES=1 NO=2 DON'T KNOW/NOT SURE=-8 REFUSED=-9	
617	In the last 12 months, did someone else disclose your HIV status without your permission?	YES=1 NO=2 DON'T KNOW/NOT SURE=-8 REFUSED=-9	
618	In the last 12 months, have you been verbally insulted, harassed, or threatened because of your HIV status?	YES=1 NO=2 DON'T KNOW/NOT SURE=-8 REFUSED=-9	
619	In the last 12 months, have you lost your job or another source of income because of your HIV status?	YES=1 NO=2 DON'T KNOW/NOT SURE=-8 REFUSED=-9	
620	In the last 12 months, have you been forced to change your place of residence or been unable to rent accommodation because of your HIV status?	YES=1 NO=2 DON'T KNOW/NOT SURE=-8 REFUSED=-9	
621	In the last 12 months, have you been denied health services because of your HIV status?	YES=1 NO=2 DON'T KNOW/NOT SURE=-8 REFUSED=-9	
Interviewer says: "'PrEP' or pre-exposure prophylaxis, involves taking a daily pill to reduce of getting HIV."			

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE SIX: HIV TESTING (continued)			
622	Have you ever heard of PrEP before now?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 625
623	Have you ever taken PrEP?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 625
624	Are you currently taking PrEP?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	ALL → 701
625	Would you take PrEP to help prevent HIV	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
MODULE SEVEN: HIV STATUS, CARE AND TREATMENT			
Interviewer says: "Now I am going to ask you more about your experience with HIV care and treatment."			
701	After learning you had HIV, have you ever received care or treatment for HIV from a doctor, clinical officer or nurse?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF YES → 703 IF DON'T KNOW, REFUSED → 709
702	What is the main reason why you have never received care or treatment for HIV 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 (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	FOR ALL → 709
703	Are you currently receiving HIV care from a health facility?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 707
704	At which facility are you currently receiving HIV care? (Interviewer: Please enter facility name if facility information is available. Otherwise, swipe forward to continue)	[LIST OF REGIONS] _____ REGION NOT ON LIST = 99 [LIST OF FACILITIES] _____ FACILITY NOT ON LIST=99 _____	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE SEVEN: HIV STATUS, CARE AND TREATMENT (continued)			
705	In the past year, did you change the clinic where you receive HIV care?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
706	At your last HIV care visit, approximately how long did it take you to travel from your home (or workplace) one-way?	LESS THAN HALF HOUR=1 HALF HOUR TO ONE HOUR=2 ONE TO TWO HOURS=3 MORE THAN TWO HOURS=4 DON'T KNOW=-8 REFUSED=-9	
707	Does travel time to health facility make it difficult for you to access care?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
708	When did you last see a doctor, clinical officer, pharmacist or nurse for HIV treatment or care?	MONTH _____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR_____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	
709	Have you ever taken ARVs, that is, antiretroviral medications to treat HIV infection?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF YES → 711 IF DON'T KNOW, REFUSED AND 701 <> DON'T KNOW, REFUSED → 720 IF DON'T KNOW, REFUSED AND 701 = DON'T KNOW, REFUSED → 801
710	What is the main reason you have never taken ARVs?	NOT ELIGIBLE FOR TREATMENT=1 HEALTH CARE PROVIDER DID NOT PRESCRIBE=2 HIV MEDICINES ARE NOT AVAILABLE=3 I FEEL HEALTHY/NOT SICK=4 COST OF CARE=5 RELIGIOUS REASONS=6 TAKING TRADITIONAL MEDICATIONS=7 NOT ATTENDING HIV CLINIC=8 CLINIC IS TOO FAR=9 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	FOR ALL → 720
711	What month and year did you first start taking ARVs? (Interviewer: Probe to verify date.)	MONTH _____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR_____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE SEVEN: HIV STATUS, CARE AND TREATMENT (continued)			
712	Are you currently 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	IF YES → 714 IF DON'T KNOW, REFUSED → 720
713	Can you tell me the main reason you stopped taking ARVs?	I HAD TROUBLE TAKING A TABLET EVERYDAY=1 I HAD SIDE EFFECTS=2 FACILITY TOO FAR AWAY FOR ME TO GET MEDICINE REGULARLY=3 COST OF CARE=4 I FEEL HEALTHY/ NOT SICK=5 FACILITY WAS OUT OF STOCK=6 RELIGIOUS REASONS=7 TAKING TRADITIONAL MEDICATIONS=8 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	FOR ALL → 720
714	How do you normally receive your ARVs? (Read each response. Select the most common method of collection.)	PICK UP AT THE LOCAL CLINIC=1 PICK UP AT THE HOSPITAL=2 FROM THE COMMUNITY SUPPORT GROUP/ ADHERENCE CLUB=3 THEY ARE DELIVERED TO MY HOME=4 A FAMILY MEMBER/FRIEND COLLECTS THEM=5 DON'T KNOW=-8 REFUSED =-9	
715	The last time you picked up or received your ARVs, how much supply were you given? You should include both your prescription and any extra you were given. (Interviewer: Use weeks if less than one month. Swipe forward to enter DON'T KNOW or REFUSED.)	_____WEEKS=1 _____MONTHS=2 DON'T KNOW=-8 REFUSED=-9	
716	Have your ARVs ever been changed or modified?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 718
717	Why were your ARVs changed?	I WAS NOT RESPONDING TO MY FIRST TREATMENT=1 MY VIRAL LOAD WASN'T SUPPRESSED=2 I WANTED TO GET PREGNANT OR WAS PREGNANT=3 I WAS HAVING/WORRIED ABOUT SERIOUS SIDE EFFECTS=4 NATIONAL ART REGIMEN CHANGE= 5 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE SEVEN: HIV STATUS, CARE AND TREATMENT (continued)			
718	You said before that you had been away from home during the past year. At any point in the past year were you away from home, was there any period when you interrupted your ARV treatment?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	ONLY ASK IF 109? >= 1
719	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? (Interviewer: Code '0' if none.)	NUMBER OF DAYS_____ DON'T KNOW=-8 REFUSED=-9	
720	Did you ever have a viral load test? This is a test that measure how much HIV is in your blood.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 723
721	When did you last have a viral load test?	MONTH_____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR_____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	
722	Did you receive the results of your last viral load test?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
723	At your last HIV medical care visit, were you asked if you had any of the following tuberculosis or TB symptoms: (Interviewer: Read all responses aloud. Select all that apply.)	PERSISTENT COUGH?=A FEVER?=B NIGHT SWEATS?=C WEIGHT LOSS?=D NONE OF THE ABOVE=E DON'T KNOW=Y REFUSED=Z	
724	Have you ever taken medicine or a pill to prevent you from coming down with TB? This is sometimes known as TB Preventative Therapy or TPT. An example of TPT is Isoniazid, IPT or INH, which is medication that prevents TB. It is given to people with HIV or people who are in contact with someone with TB. It is not treatment for TB.	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	IF NO, DON'T KNOW, REFUSED → 801
725	Are you currently taking TPT? By currently, I mean that you may have missed some doses but you are still taking TPT.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 801
726	How many months have you taken TPT?	MONTHS_____ DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE EIGHT: TUBERCULOSIS AND OTHER HEALTH ISSUES			
Interviewer says: "Now we will ask you about tuberculosis or TB."			
801	In the last 12 months, did you visit a clinic for TB diagnosis or treatment?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED AND MALE → 812 IF NO, DON'T KNOW, REFUSED AND FEMALE → 807
802	When you visited a TB clinic in the last 12 months, were you tested for HIV?	YES=1 NO, WAS NOT TESTED FOR HIV=2 NO, ALREADY KNOW I AM HIV POSITIVE=3 DON'T KNOW=-8 REFUSED=-9	
803	In the last 12 months, were you told by a doctor, clinical officer or nurse that you had TB?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED AND MALE → 812 IF NO, DON'T KNOW, REFUSED AND FEMALE → 807
804	In the last 12 months, were you treated for TB?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED AND MALE → 812 IF NO, DON'T KNOW, REFUSED AND FEMALE → 807
805	Are you currently on treatment for TB?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF YES AND MALE → 812 IF YES AND FEMALE → 807
806	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	IF MALE → 812
Interviewer says: "Now I am going to ask you about tests a health care provider can do to check for cervical cancer. The cervix connects the uterus to the vagina. The tests a health care provider can do to check for cervical cancer are called a Pap smear, HPV test and VIA test. **For a Pap smear and HPV test, a health care provider puts a small stick inside the vagina to wipe the cervix and sends the sample to the laboratory. For a VIA test, a healthcare worker puts vinegar on the cervix and looks to see if the cervix changes color. "**			
807	Have you ever been tested for cervical cancer?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF NO, DON'T KNOW, REFUSED → 812
808	What month and year was your last test for cervical cancer?	MONTH_____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR_____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE EIGHT: TUBERCULOSIS AND OTHER HEALTH ISSUES (continued)			
809	What was the result of your last test for cervical cancer?	NORMAL/NEGATIVE=1 ABNORMAL/POSITIVE=2 SUSPECT CANCER=3 UNCLEAR/INCONCLUSIVE=4 DID NOT RECEIVE RESULTS=5 DON'T KNOW=-8 REFUSED=-9	IF NORMAL/NEGATIVE, DON'T KNOW, REFUSED → 811
810	Did you receive treatment after your last test for cervical cancer? Did you receive treatment on the same day or on a different day?	YES, I WAS TREATED ON THE SAME DAY=1 YES, I RECEIVED TREATMENT ON A DIFFERENT DAY=2 NO=3 DON'T KNOW=-8 REFUSED=-9	
811	Have you ever been vaccinated to prevent cervical cancer? This would be the HPV vaccine.	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
Interviewer says: "I am now going to ask you about other aspects of health."			
812	Over the past two weeks, how often have you been bothered by having little interest in doing things? Would you say: Not at all, several days, more than half the days, or nearly every day?	NOT AT ALL=1 SEVERAL DAYS=2 MORE THAN HALF THE DAYS=3 NEARLY EVERY DAY=4 DON'T KNOW=-8 REFUSED=-9	
813	Over the past two weeks, how often have you felt down, depressed or hopeless? Would you say: Not at all, several days, more than half the days, or nearly every day?	NOT AT ALL=1 SEVERAL DAYS=2 MORE THAN HALF THE DAYS=3 NEARLY EVERY DAY=4 DON'T KNOW=-8 REFUSED=-9	
814	Over the past two weeks, how often have you felt nervous, anxious or on edge? Would you say: Not at all, several days, more than half the days, or nearly every day?	NOT AT ALL=1 SEVERAL DAYS=2 MORE THAN HALF THE DAYS=3 NEARLY EVERY DAY=4 DON'T KNOW=-8 REFUSED=-9	
815	Over the past two weeks, how often have you not been able to stop or control worrying? Would you say: Not at all, several days, more than half the days, or nearly every day?	NOT AT ALL=1 SEVERAL DAYS=2 MORE THAN HALF THE DAYS=3 NEARLY EVERY DAY=4 DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE EIGHT: TUBERCULOSIS AND OTHER HEALTH ISSUES (continued)			
816	Have you ever been told by a doctor or health worker that you have any of the following chronic health conditions? (Interviewer: Read responses aloud. Select all that apply.)	HIGH BLOOD SUGAR OR DIABETES=A HIGH BLOOD PRESSURE OR HYPERTENSION=B HEART DISEASE OR CHRONIC HEART CONDITION=C KIDNEY DISEASE=D CANCER OR TUMOR=E LUNG DISEASE OR CHRONIC LUNG DISEASE=F DEPRESSION OR MENTAL HEALTH CONDITION=G ALCOHOLISM=H NONE OF THE ABOVE=I OTHER (SPECIFY) =96 _____ DON'T KNOW=Y REFUSED=Z	IF NONE OF THE ABOVE, DON'T KNOW, REFUSED → C1
817	Are you currently taking medication for any of the following chronic health conditions? (Interviewer: If any of the conditions in the previous question are selected, respondent should be asked about treatment for that condition.)	HIGH BLOOD SUGAR OR DIABETES=A HIGH BLOOD PRESSURE OR HYPERTENSION=B HEART DISEASE OR CHRONIC HEART CONDITION=C KIDNEY DISEASE=D CANCER OR TUMOR=E LUNG DISEASE OR CHRONIC LUNG DISEASE=F DEPRESSION OR MENTAL HEALTH CONDITION=G ALCOHOLISM=H NONE OF THE ABOVE=I OTHER (SPECIFY) =96 _____ DON'T KNOW=Y REFUSED=Z	
MODULE C: HEPATITIS DIAGNOSIS, TREATMENT, AND RISK			
Interviewer says: "Hepatitis is a liver infection that may damage the live and affects how well the liver functions, and it may be caused by hepatitis virus. The most common types of viral hepatitis in Tanzania are caused by the infections of hepatitis B and hepatitis C viruses."			
C1	Have you previously been diagnosed with a chronic liver disease?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C2	Have you previously been diagnosed with hepatitis B?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C3	Have you previously been diagnosed with hepatitis C?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C4	Have you ever lived with someone who has been diagnosed with hepatitis B and hepatitis C?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE C: HEPATITIS DIAGNOSIS, TREATMENT, AND RISK (continued)			
C5	Have you ever been prescribed treatment for hepatitis B virus infection?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C6	Have you ever been prescribed treatment for hepatitis C virus infection?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C7	Have you been vaccinated against hepatitis B?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C8	Have you ever heard about hepatitis from media or other community campaigns?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C9	Have you ever received a blood or blood product transfusion or organ transplant?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C10	In the last 12 months, how many injections did you receive, for any reason? (Interviewer: If participant gives a non-numeric answer such as "I've had many", probe to get an answer. If greater than 100, then record 100. Code '0' if none.)	NUMBER OF INJECTIONS____ DON'T KNOW=-8 REFUSED=-9	
C11	Have you received an injection from any of these persons in the last 12 months? (Interviewer: Read response options. Select all that apply.)	HEALTH CARE WORKER=A TRADITIONAL PRACTITIONER OR HEALER=B SELF, PRESCRIBED BY HEALTH CARE WORKER=C SELF, NOT PRESCRIBED BY HEALTH CARE WORKER=D OTHER (SPECIFY) =X _____ DON'T KNOW=-8 REFUSED=-9	DISPLAY IF C10 > 0
C12	Have you ever received dialysis for kidney disease?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C13	Do you have an ear or body piercing?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C14	Do you have a tattoo, cosmetic marking, or cuts/scarification?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
C15	Have you ever had a surgery or dental procedure?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE NINE: ALCOHOL USE			
Interviewer says: "The next few questions will be on your use of alcohol. Remember, all of the answers you provide will be kept confidential."			
901	In the last 30 days, have you had any drinks containing alcohol?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	IF YES → 903
902	In the last 12 months, have you had any drinks containing alcohol?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
903	How often do you have a drink containing alcohol?	NEVER=0 LESS THAN MONTHLY=1 MONTHLY=2 WEEKLY=3 DAILY OR ALMOST DAILY=4 DON'T KNOW=-8 REFUSED=-9	IF NEVER, DON'T KNOW, REFUSED → 907
904	How many standard drinks containing alcohol do you have on a typical day when you are drinking? (Interviewer: Show and explain job aid.)	1 OR 2=0 3 OR 4=1 5 OR 6=2 7 TO 9=3 10 OR MORE=4 DON'T KNOW=-8 REFUSED=-9	
905	How often do you have five or more drinks on one occasion?	NEVER=0 LESS THAN MONTHLY=1 MONTHLY=2 WEEKLY=3 DAILY OR ALMOST DAILY=4 DON'T KNOW=-8 REFUSED=-9	
906	Where do you normally consume alcohol? (Interviewer: do not read response options. Select all that apply.)	MY HOME = A FRIENDS HOME= B BAR/ RESTAURANT = C NIGHT CLUB= D INFORMAL BAR (KILABUNI)= E GROCERY / KIOSK / SMALL SHOP= F PARTY / SPECIAL EVENT= G OTHER (SPECIFY) =X _____ DON'T KNOW= Y REFUSED= Z	
907	Do you currently smoke any form of tobacco on a daily basis, less than daily, or not at all?	DAILY= 1 LESS THAN DAILY= 2 NOT AT ALL= 3 DON'T KNOW = -8 REFUSED= -9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE TEN: EXPOSURE TO PREVENTION INTERVENTION AMONG 15-24 YEARS			
Interviewer says: "We will now ask you about your experience with HIV prevention program."			
1001	Where can you get condoms? (Interviewer: Select all that apply.)	CLINIC/HOSPITAL=A KIOSK/SHOP=B PHARMACY=C LOCAL FREE DISPENSER=D FRIENDS/PEER=E SEXUAL PARTNER(S)=F OTHER (SPECIFY) =X _____ DON'T KNOW=-8 REFUSED=-9	
1002	If you wanted a condom, would it be easy for you to get one?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	IF YES, DON'T KNOW, REFUSED → 1004
1003	Why is it not easy for you to get a condom?	CONDOMS NOT AVAILABLE/TOO FAR=A NOT CONVENIENT=B COSTS TOO MUCH=C EMBARRASED TO GET CONDOMS=D DO NOT WANT OTHERS TO KNOW=E DO NOT KNOW WHERE TO GET CONDOMS=F OTHER (SPECIFY) =X _____ DON'T KNOW=Y REFUSED=Z	
1004	Have you ever talked with a parent or guardian about sex?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
1005	Have you ever discussed HIV with your parents or guardians?	YES = 1 NO = 2 DON'T KNOW = -8 REFUSED = -9	
1006	Have you taken part in any of the following prevention or treatment programs?	DREAMS=A TIMIZA MALENGO=B CASH PLUS=C PREP=D NONE= W OTHER (SPECIFY) =X _____ DON'T KNOW=Y REFUSED=Z	
1007	In the past 12 months, how many times have you participated in a school meeting or class period where they talked about HIV/AIDS? If you are not certain, give your best guess.	NONE=0 1-4 TIMES=1 5-9 TIMES=2 10 OR MORE TIMES=3 DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE D: COVID-19 VACCINATION			
Interviewer says: "COVID-19 is the name given to the disease caused by a coronavirus. COVID-19 most often causes respiratory symptoms that can feel like a cold, flu or pneumonia, and other parts of your body may also be affected by the disease. We will now ask you some questions about your experiences with COVID-19 vaccination. If you have been vaccinated for COVID-19 and have your vaccination record with you right now, please take it out. If you do not have it with you, you can answer the questions from memory."			
D1	Have you received a COVID-19 vaccine?	YES (VACCINATION RECORD SEEN=1 YES (VACCINATION RECORD NOT SEEN)=2 NO=3 DON'T KNOW=-8 REFUSED=-9	IF NO, DON'T KNOW, OR REFUSED → D6
D2	How many doses of COVID-19 vaccine have you received?	1=1 2=2 3 OR MORE=3 DON'T KNOW=-8 REFUSED=-9	
D3	Which COVID-19 vaccine did you FIRST receive? (If participant can't remember name, read responses aloud.)	J&J JANSSEN=1 PFIZER=2 SINOPHARM=3 MODERNA=4 SINOVAC=5 OTHER (SPECIFY) =96 _____ DON'T KNOW=-8 REFUSED=-9	
D4	During what month/year did you receive the first dose of COVID-19 vaccine?	MONTH_____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR_____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	IF D2= 1, DON'T KNOW, OR REFUSED → D9 IF D2= 2 OR 3 OR MORE → D5
D5	During what month/year did you receive the second dose of COVID-19 vaccine?	MONTH_____ DON'T KNOW MONTH=-8 REFUSED MONTH=-9 YEAR_____ DON'T KNOW YEAR=-8 REFUSED YEAR=-9	ALL → D9
D6	Do you think it will be easy or difficult to get a COVID-19 vaccination for yourself?	EASY=1 DIFFICULT=2 DON'T KNOW=-8 REFUSED=-9	IF YES, DON'T KNOW, OR REFUSED → D9

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE D: COVID-19 VACCINATION (continued)			
D7	What makes it difficult for you to get a COVID-19 vaccine? (Do not read response options. Select all that apply.)	I CAN'T GO ON MY OWN (I HAVE A PHYSICAL LIMITATION)=A IT'S TOO FAR AWAY/I DON'T HAVE TRANSPORTATION=B I DON'T KNOW WHERE TO GO TO GET VACCINATED=C I'M NOT ELIGIBLE TO GET A COVID-19 VACCINE/I HAVE A MEDICAL REASON THAT MAKES ME INELIGIBLE TO GET VACCINATED=D THE HOURS OF OPERATION ARE INCONVENIENT=E TIME CONSTRAINTS: THE WAITING TIME IS TOO LONG IT IS DIFFICULT TO FIND OR MAKE AN APPOINTMENT/I AM TOO BUSY TO GET VACCINATED/IT IS DIFFICULT TO FIND ARRANGE FOR CHILDCARE/I DON'T HAVE TIME OFF WORK=F I DON'T BELIEVE IN VACCINATION/MY RELIGION PROHIBITS VACCINATION=G OTHER (SPECIFY) =X _____ DON'T KNOW=Y REFUSED=Z	
D8	What would motivate you to get vaccinated for COVID-19? (Do not read response options. Select all that apply.)	PROTECT MY HEALTH=A PROTECT HEALTH OF FAMILY/FRIENDS/CO-WORKERS/COMMUNITY=B TO GET BACK TO WORK OR SCHOOL/ RESUME SOCIAL ACTIVITIES/RESUME TRAVEL=C BECAUSE OTHERS ENOURAGED ME TO GET VACCINATED=D IT IS RECOMMENDED BY THE GOVERNMENT=E OTHER (SPECIFY) =X _____ DON'T KNOW=Y NOTHING=W REFUSED=Z	
D9	How safe do you think a COVID-19 vaccine is for you? Would you say: Not at all safe, a little safe, moderately safe, or very safe?	NOT AT ALL SAFE=1 A LITTLE SAFE=2 MODERATELY SAFE=3 VERY SAFE=4 DON'T KNOW=-8 REFUSED=-9	
D10	Do you think most of your friends and family will get a COVID-19 vaccine, if it is recommended for them?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	
D11	Do you know where to get accurate, timely information about COVID-19 vaccines?	YES=1 NO=2 DON'T KNOW=-8 REFUSED=-9	

NO.	QUESTIONS	CODING CATEGORIES	SKIP PATTERNS
MODULE D: COVID-19 VACCINATION (continued)			
D12	What are your top 3 most trusted sources of information about COVID-19 vaccines? (Interviewer: Do not read response options. Select up to 3 options.)	FAMILY AND FRIENDS=A EMPLOYER=B TANZANIA MINISTRY OF HEALTH/LOCAL HEALTH AUTHORITIES (E.G. RHMT/CHMT)=C HEALTHCARE WORKERS (E.G. DOCTORS, NURSES, PHARMACISTS, COMMUNITY HEALTH WORKERS)=D RELIGIOUS LEADERS/TRADITIONAL LEADERS/OTHER INFLUENTIAL COMMUNITY LEADERS=E TRADITIONAL HEALERS=F TELEVISION/RADIO=G SOCIAL MEDIA (E.G. FACEBOOK, TWITTER, INSTAGRAM, WHATSAPP, LINKEDIN, TIKTOK)/WEBSITES=H OTHER (SPECIFY) =X _____ DON'T KNOW=Y NO ONE (I.E. NO TRUSTED SOURCES OF INFORMATION)=W REFUSED=Z	

Interviewer says: "Thank you for taking the time to participate in this survey. Your responses will be very helpful to the Government of Tanzania to better understand how to improve health programs in the country."

INTERVIEWER: PROVIDE PARTICIPANT WITH LIST OF ORGANIZATIONS, IF NOT ALREADY GIVEN.

APPENDIX G CONSENTS

CONSENT FOR HH INTERVIEW (ADULTS 18 + AND EMANCIPATED MINORS AGED 15-17 YEARS OLD)

TITLE OF SURVEY: THIS STUDY IS CALLED THE TANZANIA HIV IMPACT SURVEY (THIS) 2022-2023.

[INTERVIEWER READS]

What language do you prefer for our discussion today?

☐ KISWAHILI ☐ ENGLISH

Hello. My name is_____. I would like to invite you to take part in this study about HIV in the United Republic of Tanzania. The Government of Tanzania through the Tanzania and Zanzibar AIDS Commissions, Ministries of Health of Tanzania and Zanzibar, the National Bureau of Statistics in Tanzania and the Office of the Chief Government Statistician in Zanzibar are leading this study and are conducting it with technical support from the United States Centers for Disease Control and Prevention (CDC), ICAP at Columbia University, and Westat.

Purpose of the study

HIV is a virus that causes an illness called AIDS. HIV and AIDS can be treated by taking medicines regularly. This study will help us know how many people in Mainland Tanzania and Zanzibar have HIV or AIDS and need health services. We expect about 40,000 men, women, and young people who are 15 years and older from around 20,000 households throughout Tanzania to take part in the study. If you take part, you can help the Government of Tanzania make HIV services better in the country. The study will also help us to estimate the number of people in Tanzania that have hepatitis B and hepatitis C. Hepatitis B and hepatitis C are liver infections that affect how well the liver functions.

This form might have some words in it that are not familiar to you. Please ask me to explain anything that you do not understand.

Study procedures

- If you join this study, we will ask you questions, and your answers will be kept between us. In the household interview, we would like to ask you some questions about the people who live here. We will also ask you about support you receive and some of the things you have or own. After the household interview, we will invite you and others living in your household to take part in individual interviews. The questions will be about your age, the work you do, your health and experience with health services, and social and sexual behavior. The interview may take about 20 to 30 minutes.
- The information is collected on this tablet. The information is stored securely and can only be accessed by selected study staff. The interview will take place in private, here in your house, or a nearby private area of your choosing.
- We will ask each person to give permission to take part before joining the study. Study procedures also include blood draw, HIV and related testing, hepatitis B testing, hepatitis C testing, and storage of that blood for future testing if you agree to this. The HIV testing and counseling will take about 45 minutes. Participants will be asked to consent for all study procedures, including blood draw and testing. If a household member does not take part in the study, he/she will not be tested for HIV, hepatitis B, or hepatitis C. However, we can refer him/her to a health facility to learn more about his/her health.

Alternatives to taking part

You can decide not to take part in this study. If you choose to take part in the study, you may change your mind at any time and stop taking part. If you decide not to take part, it will not affect your healthcare in any way. If you decide to leave the study, no more information will be collected from you. However, you will not be able to take back the information that has already been collected and shared.

Costs for participation in the study

There is no cost to you for participating in the study, apart from your time.

Benefits

The main benefit for you to be in the study is the chance to learn more about your health today. Also, the information you provide to us will be used to improve healthcare services in Tanzania.

Risks

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 specific question. We will do everything we can to keep your information private. As with all studies, there is a chance that someone could find out you took part in the study. We are doing everything possible to minimize this risk.

Confidentiality and access to your health information

We will do everything we can to keep your answers private. The information we collect from you will be identified by a number and not by your name. Your name will not appear when we share study findings. The information we collect during the study will not be released outside of the study 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 study:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT- DO NOT READ ALOUD]

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this study to ensure that we are protecting your rights as a person taking part in a study, including:
  - The National Institute for Medical Research (NIMR) and the Zanzibar Health Research Institute (ZAHRI) in Tanzania
  - The Centers for Disease Control and Prevention (CDC; Atlanta, GA, USA)
  - Columbia University Medical Center (New York, NY, USA)
  - Westat (a statistical study research organization) (Rockville, MD, USA)
- The United States 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 study
- Selected study staff and study monitors.

[INTERVIEWER: READ FROM HERE]

This study has received approval from the National Institute for Medical Research (NIMR), the Zanzibar Health Research Institute (ZAHRI) in Tanzania, and the Institutional Review Boards of the Centers for Disease Control and Prevention, Columbia University Medical Center, and Westat.

Whom should you contact if you have questions?

If you would like more information about the study, you may contact the following people:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT - DO NOT READ ALOUD]

Dr. Albina Chuwa

National Bureau of Statistics (NBS)

Takwimu House, Jakaya Kikwete Road, P.O. Box 2683,
Dodoma, Tanzania

Tel No: +255 26 2963822

Email: sg@nbs.go.tz

Dr. Salum Kassim Ali

Office of the Chief Government Statistician (OCGS)

Takwimu House, Mazizini, P.O. Box 2321,
Zanzibar Tanzania

Tel No: +255 77 6470170

Email: zanstat@ocgs.go.tz

[INTERVIEWER: READ FROM HERE]

For questions about the process of agreeing to take part in this study or for more information about your rights as someone taking part in this study, you may contact the following people:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT - DO NOT READ ALOUD]

Prof. Yunus Mgaya

Chairperson of the Medical Research Coordinating Committee (MRCC), National Institute for Medical

Research, 3 Barack Obama Drive, P.O. Box 9653, 11101
Dar es Salaam, Tanzania

Tel No: +255 22 2121400

Email: hq@nimr.or.tz | info@nimr.or.tz

Dr. Mayassa S. Ally

Director General, Zanzibar Health Research Institute

Binguni, P.O. Box 236,
Zanzibar, Tanzania

Tel No: +255 77 6264880

Email: doctormayassa@gmail.com

[INTERVIEWER: READ FROM HERE]

Do you want to ask me anything about the study?

CONSENT STATEMENT

By answering the question below, you confirm that any questions you had or wished to ask have been answered satisfactorily and you have been offered a copy of this consent form.

1. Do you agree to do the household interview?

☐ Yes, go to 1a

☐ No, go to 1b

1a. Then please state the following statement:

"I agree to take part in the household interview."

☐ Check this box if participant agrees to participate in the household interview

1b. Then please state the following statement:

"I do not wish to take part in the household interview."

☐ Check this box if participant refuses to participate in the household interview

[Tablet summary statement]

To confirm, you have agreed to [INSERT ALL OPTIONS MARKED YES: HOUSEHOLD INTERVIEW].

Is this correct? ☐ Yes ☐ No

Printed name of Household Head_____

HH ID number _____

Signature of person obtaining consent_____ Date: __/__/__

Printed name of person obtaining consent_____

Survey staff THIS ID number_____

CONSENT FOR INTERVIEW, BLOOD TESTING, BLOOD STORAGE, NAME AND AGE IN TEST RESULTS AND CONTACT FOR FUTURE RESEARCH FOR ADULTS 18+, AND EMANCIPATED MINORS 15-17 YEARS OLD

(SKIP IF PARTICIPANT ALREADY COMPLETED HOUSEHOLD CONSENT)

What language do you prefer for our discussion today?

☐ KISWAHILI ☐ ENGLISH

TITLE OF STUDY: THIS STUDY IS CALLED THE TANZANIA HIV IMPACT SURVEY (THIS) 2022-2023.

Interviewer reads:

Hello. My name is_____. I would like to invite you to take part in this study about HIV in the United Republic of Tanzania. The Government of Tanzania (GOT) through the Tanzania and Zanzibar AIDS Commissions, Ministries of Health of Tanzania and Zanzibar, the National Bureau of Statistics in Tanzania and the Office of the Chief Government Statistician in Zanzibar are leading this study and are conducting it with technical support from the United States Centers for Disease Control and Prevention (CDC), ICAP at Columbia University, and Westat.

Purpose of study

HIV is a virus that causes an illness called AIDS. HIV and AIDS can be treated by taking medicines regularly. This study will help us know how many people in Mainland Tanzania and Zanzibar have HIV and AIDS and need health services. This study involves an interview, blood draw, HIV testing, hepatitis B testing, and hepatitis C testing. We expect about 40,000 men, women, and young people who are 15 years and older from around 20,000 households throughout Tanzania to take part in the study. If you take part, you can help the Government of Tanzania make HIV services better in the country. The study will also help us to estimate the number of people in Tanzania that have hepatitis B and hepatitis C. Hepatitis B and hepatitis C are liver infections that affect how well the liver functions.

This form might have some words in it that are not familiar to you. Please ask me to explain anything that you do not understand.

Study procedures

- The information is collected on this tablet. The information is stored securely and can only be accessed by selected study staff. The interview will take place in private, here in your house, or an acceptable nearby private area of your choosing.

[READ FROM HERE IF PARTICIPANT ALREADY COMPLETED THE HOUSEHOLD CONSENT]

- If you join this study, we will ask you questions, and your answers will be kept between us. The questions will be about your age, the work you do, your health and experience with health services, and your social and sexual behavior. The interview will take about 20 to 30 minutes. The interview will take place in a private area in or around your home.
- Study procedures also include blood draw, HIV testing, hepatitis B testing, hepatitis C testing, and storage of that blood for future testing if you agree to this storage.
- If you agree to the HIV testing, hepatitis B testing, and hepatitis C testing, a study staff member who has been trained to draw blood will take about 14 milliliters (which is equivalent to about one tablespoonful) of blood from your arm into two tubes. If it is not possible to take blood from your arm, then we will try to take a few drops of blood from your fingertip. The HIV blood test will take place here in or around your household. We will give you the results of your HIV test and provide counseling on the same day. The HIV testing and counseling will take about 45 minutes.
- If you have a positive HIV test result and you are not on HIV treatment (ART), we will give you a referral form and information so you can consult with a doctor or nurse so you can get the care you need.
- If you test positive for HIV, we will send your blood to a laboratory to measure your viral load and CD4 count. Viral load is the amount of HIV in your blood. CD4 cells are the part of the immune system that fights HIV infection and other diseases. These results will be sent to a health facility of your choosing in about 8 to 12 weeks. You will be able to talk to a nurse or doctor at that facility about your results. Some of your blood will be sent to a laboratory out of the country for additional tests related to HIV. If we have test results that might help guide your treatment, we will return them to that health facility of your choosing. If you provide your contact information, we will contact you to tell you how you and your doctor or nurse may get these results.
- Hepatitis B testing and hepatitis C testing will be done at the laboratory. If you test positive for hepatitis B or hepatitis C, the test results will be sent to the health facility of your choice in about 8 to 16 weeks. If you provide us your contact information, we will let you know if there is a positive hepatitis B or hepatitis C result to pick up from the health facility of your choice. If you

prefer not to provide your contact information and you have a positive hepatitis B or hepatitis C result, we will deliver the results to the health facility of your choice but will not be able to contact you.

- Returning results of tests done in laboratory to the health facility with your name and age will make it easier for the health facility to return the results to you. However, if you prefer not to have your name and age on your test results, your results will be returned by your participant number, a random study number linking you to your results.
- We would also like to ask you to allow us to store your leftover blood for future research tests. These tests may be related to HIV or other health issues important to people living in Tanzania and might be conducted without an additional consent from you. Longer term storage of the blood sample will be done at a designated biorepository within Tanzania. This sample will be stored for an indefinite amount of time, but your study identification number will be on the sample for only three years. We will share with you any test results during the three-year period that are important to your health. After the three-year period, the sample will not have your name on it, so we will not be able to tell you the results of these future research tests. Your leftover blood will not be sold or used for commercial purposes. If you do not agree to storage of your blood samples, you can still take part in the study, and we will destroy your blood samples after this study-related testing is complete. If you agree today to store your blood but change your mind later in the next three years, you can call the number provided at the end of this consent form and have your stored specimen destroyed. If you change your mind after three years, once your name is removed from the sample, we will not be able to destroy your sample.
- Additionally, you may be eligible to take part in future studies related to health in Tanzania. We are asking for your permission to contact you in the next three years if this occurs. To do this, approved researchers will be able to request access to your contact information. If they contact you, they will give you details about the new study and invite you to join the study. You may decide at that time that you do not want to take part in that study. If you do not wish to be contacted about future studies, it does not affect your taking part in this study.

[SKIP IF PARTICIPANT ALREADY WENT THROUGH THE HOUSEHOLD CONSENT]

Alternatives to taking part

You can decide not to take part in this study. If you choose to take part in the study, you may change your mind at any time and stop taking part. If you decide not to take part, it will not affect your healthcare in any way. If you decide to leave the study, no more information will be collected from you. However, you will not be able to take back the information that has already been collected and shared.

Costs for participation in the study

There is no cost to you for participating in the study, apart from your time.

[READ FROM HERE IF PARTICIPANT ALREADY COMPLETED THE HOUSEHOLD CONSENT]

Benefits

The main benefit for you to be in the study is the chance to learn more about your health today. Some people who take part will test HIV positive. If you test HIV positive for the first time, you will learn your HIV-positive status and where to go for HIV services. HIV care and treatment provided by the GOT is free and you will be offered help in getting the services you need. If you already know you have HIV and are not on treatment, you will get information to help your doctor or nurse to start or restart treatment. If you are HIV positive and on HIV treatment, the viral load and CD4 tests can help your nurse or doctor judge how well your treatment is working. If you test HIV negative, you will learn about what you can do to stay HIV negative. If you test positive for hepatitis B or hepatitis C, you will learn where to go for care.

Additionally, the information you provide to us will be used to improve health services in Tanzania. Your taking part in this study could help us learn more about HIV, hepatitis B, and hepatitis C in Tanzania. It can help us learn about how HIV prevention and treatment programs are working in the country.

Risks

The risks involved with taking part in the study are small. You may feel uncomfortable about some of the questions we will ask. You can refuse to answer any question. The risks to you from having your blood drawn are also minor. They include brief pain from the needle stick, bruising, lightheadedness, bleeding and, rarely, infection where the needle enters the skin. The study staff member who will perform the blood draw has received training on how to draw blood. If you experience any discomfort or any of the symptoms mentioned above, please let us know, especially if there is any bleeding or swelling.

Learning you have HIV, hepatitis B, or hepatitis C may cause some emotional distress. If you test HIV positive today, you will receive counseling on how to cope with learning that you have HIV. We will explain options for care and help you identify where to go for treatment. Care and treatment are available at government facilities free of charge. If you test positive for hepatitis B or hepatitis C, the health facility where your results are returned will help you get care.

As with all studies, there is a chance that someone could find out you took part in the study. We are doing everything possible to minimize this risk.

[SKIP IF PARTICIPANT ALREADY WENT THROUGH HOUSEHOLD CONSENT]

Confidentiality and access to your health information

We will do everything we can to keep your answers private. The information we collect from you will be identified by a number and not by your name. Your name will not appear when we share study findings. The information we collect during the study will not be released outside of the study 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 study:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT - DO NOT READ ALOUD]

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this study to ensure that we are protecting your rights as a person taking part in a study, including:
  - The National Institute for Medical Research (NIMR) and the Zanzibar Health Research Institute (ZAHRI) in Tanzania
  - The Centers for Disease Control and Prevention (CDC; Atlanta, GA, USA)
  - Columbia University Medical Center (New York, NY, USA)
  - Westat (a statistical study research organization) (Rockville, MD, USA)
- The United States 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 in a study.
- Selected study staff and study monitors.

[INTERVIEWER: READ FROM HERE]

This study has received approval from the National Institute for Medical Research (NIMR) and the Zanzibar Health Research Institute (ZAHRI) in Tanzania and the Institutional Review Boards of the Centers for Disease Control and Prevention, Columbia University Medical Center, and Westat.

Whom should you contact if you have questions?

If you would like to have more information about the study, you may contact the following people:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT - DO NOT READ ALOUD]

Dr. Albina Chuwa

National Bureau of Statistics (NBS)

Takwimu House, Jakaya Kikwete Road, P.O. Box 2683,
Dodoma, Tanzania

Tel No: +255 26 2963822

Email: sg@nbs.go.tz

Dr. Salum Kassim Ali

Office of the Chief Government Statistician (OCGS)

Takwimu House, Mazizini, P.O. Box 2321,
Zanzibar Tanzania

Tel No: +255 77 6470170

Email: zanstat@ocgs.go.tz

[INTERVIEWER: READ FROM HERE]

For questions about the process of agreeing to take part in this study or for more information about your rights as someone taking part in this study, you may contact the following people:

Prof. Yunus Mgaya

Chairperson of the Medical Research Coordinating Committee (MRCC), National Institute for Medical Research, 3 Barack Obama Drive, P.O. Box 9653, 11101 Dar es Salaam, Tanzania

Tel No: +255 22 2121400

Email: hq@nimr.or.tz | info@nimr.or.tz

Dr. Mayassa S. Ally

Director General, Zanzibar Health Research Institute

Binguni, P.O. Box 236, Zanzibar, Tanzania

Tel No: +255 77 6264880

Email: doctormayassa@gmail.com

[READ FROM HERE IF PARTICIPANT ALREADY COMPLETED HOUSEHOLD CONSENT]

Do you want to ask me anything about the study?

CONSENT STATEMENT

By answering the questions below, you confirm that any questions you had or wished to ask have been answered satisfactorily and you have been offered a copy of this consent form.

1. Do you agree to take part in the individual interview?

☐ Yes, go to 1a

☐ No, go to 1b

1a. Then please state the following statement:

"I agree to take part in the individual interview."

☐ Check this box if participant agrees to participate in the individual interview.

1b. Then please state the following statement:

"I do not wish to take part in the individual interview."

☐ Check this box if participant refuses to participate in the individual interview.

(IF PARTICIPANT DOES **NOT** AGREE, THEN **STOP)**

2. Do you agree to give blood for HIV and related testing, hepatitis B testing, and hepatitis C testing and receive the result of your HIV test?

☐ Yes, go to 2a

☐ No, go to 2b

2a. Then please state the following statement:

"I agree to give blood for HIV and related testing, hepatitis B testing, and hepatitis C testing and receive the result of my HIV test."

☐ Check this box if participant agrees to give blood for HIV and related testing, hepatitis B testing, and hepatitis C testing.

2b. Then please state the following statement:

"I do not wish to take part in blood testing today."

☐ Check this box if participant refuses blood testing.

(IF PARTICIPANT DOES **NOT** AGREE, THEN SKIP TO STATEMENT 5)

3. If you test positive for HIV, additional test results will be returned to a health facility of your choice. If you test positive for hepatitis B or hepatitis C, the positive test result will be returned to a health facility of your choice. Returning these results with your name and age will make it easier for the health facility to return the results to you. If you do not agree the results will be returned to the health facility with your participant number, a random unique study number linking you to your results.

Do you agree for the results of these tests to be returned to the health facility accompanied by your name and age?

☐ Yes, go to 3a

☐ No, go to 3b

3a. Then please state the following statement:

"I give permission for the study team to include my name and age when returning my test results to my preferred health facility."

☐ Check this box if participant agrees to have his or her test results returned with his or her name and age.

3b. Then please state the following statement:

"I do not wish for the study team to include my name and age when returning my test results to my preferred health facility."

☐ Check this box if participant refuses to have his or her test results returned with his or her name.

4. Do you agree to have your leftover blood stored for future research?

☐ Yes, go to 4a

☐ No, go to 4b

4a. Then please state the following statement:

"I agree to have my leftover blood stored for future research."

☐ Check this box if participant agrees to have his/her leftover blood stored for future research.

4b. Then please state the following statement:

"I do not wish to have my leftover blood stored for future research."

☐ Check this box if participant refuses to have his/her leftover blood stored for future research.

5. Do you agree to be contacted for future research?

☐ Yes, go to 5a

☐ No, go to 5b

5a. Then please state the following statement:

"I agree to be contacted for future research."

☐ Check this box if participant agrees to be contacted for future research.

5b. Then please state the following statement:

"I do not wish to be contacted for future research."

☐ Check this box if participant refuses be contacted for future research.

[Tablet summary statement]

To confirm, you have agreed to <INSERT ALL OPTIONS MARKED YES: INTERVIEW, BLOOD TESTING, BLOOD STORAGE, RETURN RESULTS WITH NAME AND AGE, FUTURE RESEARCH>. Is this correct?

☐ Yes ☐ No

Printed name of Participant_____

Signature of person obtaining consent _____ Date: __/__/__

Printed name of person obtaining consent_____

Survey staff THIS ID number _____

PARENTAL OR GUARDIAN PERMISSION FOR PARTICIPANTS 15-17 YEARS OLD FOR INTERVIEW, BLOOD TESTING, BLOOD STORAGE AND CONTACT FOR FUTURE RESEARCH

What language do you prefer for our discussion today?

☐ KISWAHILI ☐ ENGLISH

TITLE OF STUDY: THIS STUDY IS CALLED THE TANZANIA HIV IMPACT SURVEY (THIS) 2022-2023.

Interviewer reads:

Hello. My name is_____. I would like to invite your child to take part in this study about HIV in the United Republic of Tanzania. The Government of Tanzania (GOT) through the Tanzania and Zanzibar AIDS Commissions, Ministries of Health of Tanzania and Zanzibar, the National Bureau of Statistics in Tanzania and the Office of the Chief Government Statistician in Zanzibar are leading this study and are conducting it with technical support from the United States Centers for Disease Control and Prevention (CDC), ICAP at Columbia University, and Westat.

[SKIP IF PARTICIPANT ALREADY COMPLETED THE HOUSEHOLD OR INTERVIEW CONSENT]

Purpose of study

HIV is a virus that causes an illness called AIDS. HIV and AIDS can be treated by taking medicines regularly. This study will help us know how many people in Mainland Tanzania and Zanzibar have HIV or AIDS and need health services. This study involves an interview, blood draw, HIV testing, hepatitis B testing and hepatitis C testing. We expect about 40,000 men, women, and young people who are 15 years and older from around 20,000 households throughout Tanzania to take part in the study. If your child takes part, he or she can help the Government of Tanzania improve HIV services in the country. The study will also help us to estimate the number of people in Tanzania that have hepatitis B and hepatitis C. Hepatitis B and hepatitis C are liver infections that can affect how well the liver functions.

This form might have some words in it that are not familiar to you. Please ask me to explain anything that you do not understand.

Study procedures

- The information is collected on this tablet. The information is stored securely and can only be accessed by selected study staff. The interview will take place in private, here in your house, or an acceptable nearby private area of your child's choosing.

[READ FROM HERE IF PARTICIPANT ALREADY COMPLETED THE HOUSEHOLD OR INTERVIEW CONSENT]

- If both you and your child agree, we will ask your child some questions. The interview questions will be the same as the ones that we ask adults who agree to take part in the study. The questions will be about what kind of work he or she does and experience with health services. We will also ask about his or her social and sexual behaviors. Your child's answers will not be shared with you. The interview will take about 20 to 30 minutes. The interview will be conducted in private with only the child and a study staff member.
- Study procedures also include blood draw, HIV testing, hepatitis B testing, hepatitis C testing, and storage of that blood for future testing.
    - A study staff member who is trained to draw blood will take about 14 milliliters (which is equivalent to about one tablespoonful) of blood from your child's arm into two tubes. 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 fingertip. We will test the blood for HIV in your home. We will give your child the results of these tests and provide counseling about the results on the same day as the test. The HIV testing and counseling will take about 45 minutes.
    - For a child who tests positive for HIV, we will also send his or her blood to a laboratory to measure the viral load and CD4 count. Viral load is the amount of HIV in the blood. CD4 cells are the part of the immune system that fights HIV infection and other diseases. If your child provides us with the name of a health facility, we can send his or her viral load and CD4 results there about 8 to 12 weeks from now. Some of your child's blood will be sent to a laboratory out of the country for some additional tests related to HIV. If we have test results that might guide your child's care or treatment, we will return them to that health facility. If he or she provides us with contact information, we will contact him or her about how he or she and a doctor or nurse at the preferred health facility may get these results.

  - We would like to help your child access the health services he or she needs. If your child tests HIV positive and is not on HIV treatment (ART), we will offer your child support to access HIV care and treatment. If your child agrees to receive this support, we will provide your child's contact information and HIV results to healthcare workers or counselors from a trained social service organization. Specifically, we will provide the healthcare workers and counselors your child's name, phone number and address. The healthcare workers and counselors will contact your child and help him or her go for HIV care. Anyone who is provided with your child's details will be experienced in providing support to people living with HIV and trained in maintaining confidentiality.
  - Hepatitis B and hepatitis C testing will be done at the laboratory. If your child tests positive for hepatitis B or hepatitis C, the test results will be sent to the health facility of his/her choice in about 8 to 16 weeks. If your child provides us with his/her contact information, we will let him/her know if there is a positive hepatitis B or hepatitis C result to pick up from the health facility of his/her choice. If your child prefers not to provide his/her contact information and he/she has a positive hepatitis B or hepatitis C result, we will deliver the results to the health facility of his/her choice but will not be able to contact him/her.
- We would also 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 people living in Tanzania and might be conducted without an additional consent from you or your child. Longer term storage of the blood sample will be done at a designated biorepository within Tanzania. This sample will be stored for an indefinite amount of time, but the study identification number of your child will be on the sample for only three years. We will share with your child any test results during the three-year period that are important to his or her health. After the three-year period, the sample will not have your child's name on it and so we will not be able to tell your child the results of the future research tests. Your child's leftover blood samples will not be sold or used for commercial purposes. If you do not agree to store your child's blood for future research tests, your child can still take part in the study, and we will destroy his or her blood samples after this study-related testing is complete. If you agree today to storage of your child's blood but change your mind later in the next three years, you can call the number provided at the end of this consent form and have your child's stored specimen destroyed. If you change your mind after three years, once your child's name is removed from the sample, we will not be able to destroy his or her sample.
- Finally, your child may be eligible to take part in future studies related to health in Tanzania. We are asking for your permission to contact your child in the next three years if this occurs. To do this, approved researchers will be able to request access to his or her contact information. If they contact him or her, they will give your child details about the new study and invite him or her to join the study. Your child may decide at that time that he or she does not want to take part in that study. If he or she does not wish to be contacted about future studies, it does not affect him or her taking part in this study.

Alternatives to taking part

Your child can decide not to take part in this study. If your child decides not to take part, it will not affect his or her healthcare in any way. If your child chooses to take part in the study, he or she may change his or her mind at any time and stop taking part. If he or she decides to leave the study, no more information will be collected from him or her. However, your child will not be able to take back the information that has already been collected and shared.

Costs for participation in the study

There is no cost to you or your child for participating in the study, apart from his or her time.

Benefits

The main benefit for your child to be in the study is the chance to learn more about his or her health today. If your child tests HIV positive, the benefit is that your child will learn where to go for HIV services. HIV care and treatment provided by the GOT is free. If your child already knows he or she has HIV and is not on treatment, your child will get information to help his or her doctor or nurse to start or restart treatment. If your child already knows he or she is HIV positive and is on HIV treatment, the viral load and CD4 tests can help your child's nurse or doctor judge how well the treatment is working. If your child tests HIV negative, your child will learn about how he or she can stay HIV negative. If your child tests positive for hepatitis B or hepatitis C, your child will learn where to go for care.

Additionally, your child's taking part in this study could help us learn more about HIV, hepatitis B, and hepatitis C in Tanzania. It can help us learn about how HIV prevention and treatment programs are working in the country.

Risks

The risks involved with taking part in the study are small. Your child may feel uncomfortable answering some of the questions. He or she does not have to answer questions he or she feels are too personal or that make him or her feel uncomfortable.

The risks to your child from having his or her blood drawn are also minimal. They include brief pain from the needle stick, bruising, lightheadedness, bleeding, and rarely, infection where the needle enters the skin. The study staff member who will perform the blood draw has received training on how to draw blood. If your child experiences any discomfort or any of the symptoms mentioned above, please let us know, especially if there is any bleeding or swelling.

Your child may learn that he or she has HIV, hepatitis B, or hepatitis C, and this may cause some emotional distress. If he or she tests positive for HIV, he or she will receive counseling on how to cope with learning that he or she has HIV. We will help your child learn where to go and explain the options available for care and treatment. Care and treatment are available at government facilities free of charge. If your child tests positive for hepatitis B or hepatitis C, the health facility where his/her results are returned will help him/her get care.

As with all studies, there is a chance that someone could find out your child took part in the study. We are doing everything possible to minimize this risk.

Confidentiality and access to your health information

We will do everything we can to keep your child's taking part in the study and his or her answers private. The information we collect from your child will be identified by a number and not by his or her name. His or her name will not appear when we share study results. The information we collect during the study will not be released outside of the study groups listed unless there is an issue of safety.

[SKIP IF PARTICIPANT ALREADY COMPLETED THE HOUSEHOLD OR INTERVIEW CONSENT]

The following individuals and/or agencies will be able to look at your child's interview records to help oversee the conduct of this study:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT- DO NOT READ ALOUD]

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this study to ensure that we are protecting your child's rights as a person taking part in a study, including:
  - The National Institute for Medical Research (NIMR) and the Zanzibar Health Research Institute (ZAHRI) in Tanzania
  - The Centers for Disease Control and Prevention (CDC; Atlanta, GA, USA)
  - Columbia University Medical Center (New York, NY, USA)
  - Westat (a statistical study research organization) (Rockville, MD, USA)
- The United States 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 study.
- Selected study staff and study monitors.

[INTERVIEWER: READ FROM HERE]

This study has received approval from the National Institute for Medical Research (NIMR) and the Zanzibar Health Research Institute (ZAHRI) in Tanzania and the Institutional Review Boards of the Centers for Disease Control and Prevention, Columbia University Medical Center, and Westat.

Whom should you contact if you have questions?

If you would like to have more information about the study, you may contact:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT - DO NOT READ ALOUD]

Dr. Albina Chuwa

National Bureau of Statistics (NBS)

Takwimu House, Jakaya Kikwete Road, P.O. Box 2683,
Dodoma, Tanzania

Tel No: +255 26 2963822

Email: sg@nbs.go.tz

Dr. Salum Kassim Ali

Office of the Chief Government Statistician (OCGS)

Takwimu House, Mazizini, P.O. Box 2321,
Zanzibar Tanzania

Tel No: +255 77 6470170

Email: zanstat@ocgs.go.tz

[INTERVIEWER: READ FROM HERE]

For questions about the process of agreeing to take part in this study or for more information about your child's rights as someone taking part in this study, you may contact:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT - DO NOT READ ALOUD]

Prof. Yunus Mgaya

Chairperson of the Medical Research Coordinating Committee (MRCC), National Institute for Medical

Research, 3 Barack Obama Drive, P.O. Box 9653, 11101
Dar es Salaam, Tanzania

Tel No: +255 22 2121400

Email: hq@nimr.or.tz | info@nimr.or.tz

Dr. Mayassa S. Ally

Director General, Zanzibar Health Research Institute

Binguni, P.O. Box 236,
Zanzibar, Tanzania

Tel No: +255 77 6264880

Email: doctormayassa@gmail.com

[READ FROM HERE IF PARTICIPANT ALREADY COMPLETED THE HOUSEHOLD OR INTERVIEW CONSENT]

Do you want to ask me anything about the study?

PERMISSION STATEMENT

By answering the questions below, you confirm that any questions you had or wished to ask have been answered satisfactorily and you have been offered a copy of this permission form.

1. Do you agree that we can ask this child to do the interview?

☐ Yes, go to 1a

☐ No, go to 1b

1a. Then please state the following statement:

"I give permission to the study team to ask this child to take part in the interview."

☐ Check this box if parent/guardian agrees to allow us to ask this child to take part in the interview.

1b. Then please state the following statement:

"I do not wish for the study team to ask this child to take part in the interview."

☐ Check this box if parent/guardian refuses to allow the study team to ask this child to take part in the interview.

(IF PARTICIPANT DOES **NOT** AGREE, THEN **STOP**)

2. Do you agree for us to ask this child to give blood for HIV and related testing, hepatitis B testing, and hepatitis C testing and receive the result of the HIV test?

☐ Yes, go to 2a

☐ No, go to 2b

2a. Then please state the following statement:

"I give permission for the study team to ask this child to give blood for HIV and related testing, hepatitis B testing, and hepatitis C testing and receive the result of the HIV test."

☐ Check this box if parent/guardian agrees for study team to ask this child to take part in the blood draw.

2b. Then please state the following statement:

"I do not wish for the study team to ask this child to take part in blood testing today."

☐ Check this box if parent/guardian refuses to allow the study team to ask this child to take part in the blood draw.

(IF PARTICIPANT DOES NOT AGREE, THEN SKIP TO STATEMENT 4)

3. Do you agree to allow us to ask this child to have his or her leftover blood stored for future research?

☐ Yes, go to 3a

☐ No, go to 3b

3a. Then please state the following statement:

"I give permission for the study team to ask this child to have his or her leftover blood stored for future research."

☐ Check this box if parent/guardian agrees for study team to ask this child to have his or her leftover blood stored for future research.

3b. Then please state the following statement:

"I do not wish for the study team to ask this child to have his or her leftover blood stored for future research."

☐ Check this box if parent/guardian refuses to have study team ask this child to have his or her leftover blood stored for future research.

4. Do you agree for us to ask this child to be contacted for future research?

☐ Yes, go to 4a

☐ No, go to 4b

4a. Then please state the following statement:

"I give permission to the study team to ask this child to be contacted for future research."

☐ Check this box if parent/guardian agrees to allow us to ask this child to be contacted for future research.

4b. Then please state the following statement:

"I do not wish the study team to ask this child if he or she wants to be contacted for future research."

☐ Check this box if parent/guardian refuses to allow the study team to ask this child if he or she wants to be contacted for future research.

[Tablet summary statement]

To confirm, you have agreed to <INSERT ALL OPTIONS MARKED YES: APPROACH CHILD FOR INTERVIEW, APPROACH CHILD FOR BLOOD TESTING, APPROACH CHILD FOR BLOOD STORAGE, APPROACH CHILD FOR FUTURE RESEARCH,>.

Is this correct?

☐ Yes ☐ No

Printed name of child _____

Printed name of parent/guardian _____

Signature of person obtaining assent_____ Date: __/__/__

Printed name of person obtaining assent_____

Study staff THIS ID number _____

INDIVIDUAL ASSENT FOR INTERVIEW, BLOOD TESTING, BLOOD STORAGE, NAME AND AGE IN TEST RESULTS AND CONTACT FOR FUTURE RESEARCH FOR MINORS 15-17 YEARS OLD

What language do you prefer for our discussion today?

☐ KISWAHILI ☐ ENGLISH

TITLE OF STUDY: THIS STUDY IS CALLED THE TANZANIA HIV IMPACT SURVEY (THIS) 2022-2023.

Interviewer reads:

Hello. My name is_____. I would like to invite you to take part in a study. As a part of this study, we are asking people questions about themselves and giving people a chance to learn if they have HIV or some types of hepatitis. We are also asking people if we can keep some of their blood for future testing.

This form talks about our study and the choice you have to take part in it. You can ask questions any time.

Why are we doing this study?

HIV is a virus. Being infected with HIV can lead to an illness often called AIDS. HIV and AIDS can be treated by taking medicines regularly. This study will help us know how many people in Tanzania have HIV and need health services. This study involves an interview, a blood draw, and testing. The study will also help us to know how many people in Tanzania that have some types of hepatitis (hepatitis B and hepatitis C). Hepatitis is a condition that affects the liver.

Your parent/guardian said it was okay for us to ask you to join. This form might have some words that you may not have heard before. Please ask me to explain anything that you do not understand.

What would happen if you joined this study?

If you decide to join the study, here is what would happen:

- The information is collected on this tablet. The information is kept safe and can only be seen by a few study staff. The interview will take place in a private location, here in your house, or a nearby private area of your choosing.
- We will ask you questions, and your answers will be kept between us. We will ask you questions about your age, the work you do, your health and experience with health services, and your social and sexual behavior.
- The interview will take about 20 to 30 minutes.
- After we ask you the questions, if you agree, we will take some of your blood to test for HIV, hepatitis B, and hepatitis C.
- We will use a needle to take about 14 milliliters (about a tablespoonful) of blood from your arm into two tubes. 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.
- It will take about 45 minutes to do the HIV test and to talk to you about the results. These results will be kept between us.
- If you test positive for HIV, we will send your blood to a laboratory to measure your viral load and CD4 count. Viral load is the amount of HIV in your blood. CD4 cells are the part of the immune system that fights HIV infection and other diseases. These results will be sent to a health facility of your choosing in about 8 to 12 weeks. You will be able to talk to a nurse or doctor at that facility about your results. Some of your blood will be sent to a laboratory out of the country for additional tests related to HIV. If we have test results that might help guide your treatment, we will return them to that health facility. If you give us your contact information, we will contact you to tell you how you and your doctor or nurse may get these results.
- Hepatitis B testing and hepatitis C testing will be done at a laboratory. If you test positive for hepatitis B or hepatitis C, we will send the results to the health facility you selected in 8 to 16 weeks. We will contact you and let you know when the results are available if you give us your contact information. If you do not provide your contact information and you have a positive hepatitis B or hepatitis C result, we will deliver the results to the health facility of your choice but will not be able to contact you.
- Returning results of tests done in laboratory to the health facility with your name and age will make it easier for the health facility to return the results to you. However, if you do not want to have your name and age on your test results, your test results will be returned by your participant number, a random unique study number linking you to your results.

- We will ask you if we can store some of your blood for future testing at a laboratory in Tanzania. These tests might be conducted without additional assent from you. These tests will help us learn about the health of people in Tanzania. This sample will be stored forever but your study identification number will be on the sample only for three years. We will tell you about any test results during the next three years that are important for your health. After the three years, the sample will not have your name on it, and we will not be able to tell you the results of any future tests. Your leftover blood will only be used for future scientific tests. Your blood will not be sold. If you do not agree to future storage of your blood, we will destroy your blood after this study-related testing has finished. You can still receive your test results and conduct the study interview. If you agree today to store your blood but change your mind later in the next three years, you can call the number provided at the end of this assent form to have your stored blood destroyed. If you change your mind after three years, once your name is removed from the sample, we will not be able to destroy your sample.
- You may be able to take part in future studies related to health in Tanzania. We are asking for your permission to contact you in the next three years if this occurs. To do this, approved researchers will be able to ask for your contact information. If they contact you, they will give you details about the new study and invite you to join the study. You may decide at that time that you do not want to take part in that study. If you do not wish to be contacted about future studies, it does not affect your taking part in this study.

Alternatives to taking part

If you do not want to be in the study, you do not have to be. Nobody will get upset with you if you do not want to join the study.

It is also OK to say 'Yes' and change your mind later. You can stop being in the study at any time. If you want to stop, please tell us. You can leave the study at any time for any reason. If you decide to leave the study, no more information will be collected from you. However, you will not be able to take back the information that you have already shared.

Costs for participation in the study

There is no cost to you for participating in the study, apart from your time.

Could the study help me?

Being in the study may help you learn more about your health. We will give you the results of your HIV test and provide counseling to you. If you decide to share these results with your parent/guardian, we will discuss with you how to do so. If you test positive for HIV, you will learn about it and where to go for care and treatment of HIV. Care and treatment provided by the Government of Tanzania is free. If your test positive for hepatitis B or hepatitis C, you will learn where to go for care. Your taking part in this study will help us learn more about HIV and some types of hepatitis in Tanzania.

Could bad things happen if you join this study?

You may feel uncomfortable answering some of the questions we will ask. You can refuse to answer any question at any time, and you can stop the interview at any time.

The needle may hurt when it is put into your arm. This pain will go away quickly. Sometimes the needle can leave a bruise on the skin. You might bleed a little or feel a little dizzy. Rarely, an infection might occur where the needle enters the skin. We will do our best to make it as painless as possible.

You may learn that you have HIV, hepatitis B, or hepatitis C. This may cause you to feel worried. We will help you find a health facility where you can receive care.

We will not tell anyone else what we talk about, but there is a very small chance other people might find out. We will do everything we can to minimize this risk.

Confidentiality and access to your health information

We will do everything we can to keep your test results confidential. The blood we collect from you will be identified by a number, not by your name. Besides you, no one else will know your test results except the people working on the study and people you may decide to tell.

The information we collect during the study will not be released outside of the study 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 study:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT- DO NOT READ ALOUD]

- Staff members from the Institutional Review Boards or Ethics Committees overseeing the conduct of this study to ensure that we are protecting your rights as a person taking part in a study, including:
  - The National Institute for Medical Research (NIMR) and the Zanzibar Health Research Institute (ZAHRI) in Tanzania

  - The Centers for Disease Control and Prevention (CDC; Atlanta, GA, USA)
  - Columbia University Medical Center (New York, NY, USA)
  - Westat (a statistical study research organization) (Rockville, MD, USA)
- The United States 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 study.
- Selected study staff and study monitors.

[INTERVIEWER: READ FROM HERE]

This study has received approval from the National Institute for Medical Research (NIMR) and the Zanzibar Health Research Institute (ZAHRI) in Tanzania and the Institutional Review Boards of the Centers for Disease Control and Prevention, Columbia University Medical Center, and Westat.

Whom should you contact if you have questions?

If you would like to have more information about the study, you may contact the following people:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT - DO NOT READ ALOUD]

Dr. Albina Chuwa	Dr. Salum Kassim Ali
National Bureau of Statistics (NBS)	Office of the Chief Government Statistician (OCGS)
Takwimu House, Jakaya Kikwete Road, P.O. Box 2683, Dodoma, Tanzania	Takwimu House, Mazizini, P.O. Box 2321, Zanzibar Tanzania
Tel No: +255 26 2963822	Tel No: +255 77 6470170
Email: sg@nbs.go.tz	Email: zanstat@ocgs.go.tz

[INTERVIEWER: READ FROM HERE]

For questions about the process of agreeing to take part in this study or for more information about your rights as someone taking part in this study, you may contact the following people:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT- DO NOT READ ALOUD]

Prof. Yunus Mgaya	Dr. Mayassa S. Ally
Chairperson of the Medical Research Coordinating Committee (MRCC), National Institute for Medical	Director General, Zanzibar Health Research Institute
Research, 3 Barack Obama Drive, P.O. Box 9653, 11101 Dar es Salaam, Tanzania	Binguni, P.O. Box 236, Zanzibar, Tanzania
Tel No: +255 22 2121400	Tel No: +255 77 6264880
Email: hq@nimr.or.tz | info@nimr.or.tz	Email: doctormayassa@gmail.com

[INTERVIEWER: READ FROM HERE]

Do you want to ask me anything about the study?

ASSENT STATEMENT

By answering the questions below, you confirm that any questions you had or wished to ask have been answered satisfactorily and you have been offered a copy of this assent form.

1. Do you agree to take part in the individual interview?

☐ Yes, go to 1a

☐ No, go to 1b

1a. Then please state the following statement:

"I agree to take part in the individual interview."

☐ Check this box if participant agrees to participate in the individual interview.

1b. Then please state the following statement:

"I do not wish to take part in the individual interview."

☐ Check this box if participant refuses to participate in the individual interview.

(IF PARTICIPANT DOES **NOT** AGREE, THEN **STOP)**

2. Do you agree to give blood for HIV and related testing, hepatitis B testing, and hepatitis C testing and receive the result of your HIV test?

☐ Yes, go to 2a

☐ No, go to 2b

2a. Then please state the following statement:

"I agree to give blood for HIV and related testing, hepatitis B testing, and hepatitis C and receive the result of my HIV test."

☐ Check this box if participant agrees to HIV testing and related testing.

2b. Then please state the following statement:

"I do not wish to take part in blood testing today."

☐ Check this box if participant refuses blood testing.

(IF PARTICIPANT DOES **NOT** AGREE, THEN SKIP TO STATEMENT 5)

3. If you test positive for HIV, additional test results will be returned to the health facility. If you test positive for hepatitis B or hepatitis C, the positive test result will be returned to the health facility. Returning these results with your name and age will make it easier for the health facility to get the results to you. If you do not agree the results will be returned to the health facility with your participant number, your number in the study.

Do you agree for the results of additional tests to be returned to the health facility with your name and age?

☐ Yes, go to 3a

☐ No, go to 3b

3a. Then please state the following statement:

"I give permission for the study team to include my name and age when returning my results to the health facility."

☐ Check this box if participant agrees to have his or her testing results returned with his or her name and age

3b. Then please state the following statement:

"I do not wish for the study team to include my name and age when returning my results to the health facility."

☐ Check this box if participant refuses to have his or her testing results returned with his or her name.

4. Do you agree to have your leftover blood stored for future research?

☐ Yes, go to 4a

☐ No, go to 4b

4a. Then please state the following statement:

"I agree to have my leftover blood stored for future research."

☐ Check this box if participant agrees to have his/her leftover blood stored for future research.

4b. Then please state the following statement:

"I do not wish to have my leftover blood stored for future research."

☐ Check this box if participant refuses to have his/her leftover blood stored for future research.

5. Do you agree to be contacted for future research?

☐ Yes, go to 5a

☐ No, go to 5b

5a. Then please state the following statement:

"I agree to be contacted for future research."

☐ Check this box if participant agrees to be contacted for future research.

5b. Then please state the following statement:

"I do not wish to be contacted for future research."

☐ Check this box if participant refuses be contacted for future research.

[Tablet summary statement]

To confirm, you have agreed to < INSERT ALL OPTIONS MARKED YES: INTERVIEW, BLOOD TESTING, BLOOD STORAGE, RETURN RESULTS WITH NAME AND AGE, FUTURE RESEARCH >. Is this correct?

☐ Yes ☐ No

Printed name of child _____

Printed name of parent/guardian _____

Signature of person obtaining assent_____ Date: __/__/__

Printed name of person obtaining assent _____

Study staff THIS ID number _____

CONSENT/ASSENT TO SHARE CONTACT INFORMATION FOR ACTIVE LINKAGE TO CARE OF HIV POSITIVE PARTICIPANTS 15+ YEARS NOT ON TREATMENT (ART)

TITLE OF STUDY: THIS STUDY IS CALLED THE TANZANIA HIV IMPACT ASSESSMENT (THIS) 2022-2023.

[INTERVIEWER READS]

Purpose of consent

You had a positive HIV test today and you said you are not on treatment (ART). We have provided you with counseling regarding the results. We have also provided a referral form to bring to a health clinic and seek testing and HIV care and treatment. Your viral load and CD4 results will be returned to a clinic of your choice. We would also like to help you in accessing the healthcare that you need. If you agree, we may provide your contact information and HIV test results to healthcare workers or counselors from a relevant social service organization. This counselor(s) may 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 share your name, phone number (if you provide it to us), and your address to those providers and organizations to give you support. The provider of care may contact you by SMS, phone, WhatsApp, or in person.

What about confidentiality?

Your HIV test results and your contact information will not be shared with any other parties aside from those specified in this and 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 studies, 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 healthcare worker or counselor will assist you in accessing the healthcare that you need.

Whom should you contact if you have questions?

If you would like to have more information about the study, you may contact the following people:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT - DO NOT READ ALOUD]

Dr. Albina Chuwa	Dr. Salum Kassim Ali
National Bureau of Statistics (NBS)	Office of the Chief Government Statistician (OCGS)
Takwimu House, Jakaya Kikwete Road, P.O. Box 2683, Dodoma, Tanzania	Takwimu House, Mazizini, P.O. Box 2321, Zanzibar Tanzania
Tel No: +255 26 2963822	Tel No: +255 77 6470170
Email: sg@nbs.go.tz	Email: zanstat@ocgs.go.tz

[INTERVIEWER: READ FROM HERE]

For questions about the process of agreeing to take part in this study or for more information about your rights as someone taking part in this study, you may contact the following people:

[INTERVIEWER: INDICATE THE FOLLOWING INFORMATION TO THE PARTICIPANT - DO NOT READ ALOUD]

Prof. Yunus Mgaya

Chairperson of the Medical Research Coordinating Committee (MRCC), National Institute for Medical

Research, 3 Barack Obama Drive, P.O. Box 9653, 11101
Dar es Salaam, Tanzania

Tel No: +255 22 2121400

Email: hq@nimr.or.tz | info@nimr.or.tz

Dr. Mayassa S. Ally

Director General, Zanzibar Health Research Institute

Binguni, P.O. Box 236,
Zanzibar, Tanzania

Tel No: +255 77 6264880

Email: doctormayassa@gmail.com

[INTERVIEWER: READ FROM HERE]

Do you want to ask me anything?

1. Do you agree to allow the study team to share your contact information with trained healthcare workers or counselors?

☐ Yes, go to 1a

☐ No, go to 1b

1a. Then please state the following statement:

"I give permission for the study team to share my contact information."

☐ Check this box if participant agrees to share his or her contact information

1b. Then please state the following statement:

"I do not wish for the study team to share my contact information."

☐ Check this box if participant refuses to share his or her contact information

(IF PARTICIPANT DOES **NOT** AGREE, THEN STOP)

2. Do you agree to be contacted by:

SMS?	☐ Yes	☐ No
WhatsApp?	☐ Yes	☐ No
Phone call?	☐ Yes	☐ No
In person?	☐ Yes	☐ No

[Tablet summary statement]

To confirm, you have agreed to <INSERT ALL OPTIONS MARKED YES: SHARE, SMS, WHATSAPP, PHONE, IN-PERSON, >. Is this correct?

☐ Yes ☐ No

Printed name of participant: _____

Signature of person obtaining consent/assent: _____ Date: __/__/__

Printed name of person obtaining consent/assent: _____

Study staff THIS ID number: _____

TANZANIA HIV IMPACT SURVEY
(THIS 2022-2023)

This project is supported by the US President's Emergency Plan for AIDS Relief (PEPFAR) through CDC under the terms of cooperative agreement #U2GGH002173. The findings and conclusions are those of the authors and do not necessarily represent the official position of the funding agencies

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