

TANZANIA HIV IMPACT SURVEY (THIS)

A POPULATION-BASED HIV IMPACT ASSESSMENT

2016-2017



The Tanzania HIV Impact Survey (THIS), a household-based national survey, was conducted between October 2016 and August 2017 to measure the status of Tanzania's national HIV response. THIS offered

HIV counseling and testing with return of results, and collected information about household and individual characteristics, and uptake of HIV care and treatment services. The THIS was the first survey in Tanzania to measure national HIV incidence and viral load suppression. The results provide information on national and regional progress toward control of the HIV epidemic.

THIS was led by the Government of Tanzania through the Tanzania Commission for AIDS (TACAIDS) and Zanzibar AIDS Commission (ZAC), and the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC), the Ministry of Health Zanzibar (MoH), National Bureau of Statistics (NBS) and the Office of Chief Government Statistician (OCGS). THIS was conducted with funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and technical assistance through the U.S. Centers for Disease Control and Prevention (CDC) and ICAP at Columbia University.

The survey was implemented by NBS, OCGS, and ICAP in collaboration with local partners, including the National Health Laboratory - Quality Assurance and Training Center (NHL-QATC), the National AIDS Control Programme (NACP), and the Zanzibar Integrated HIV, Tuberculosis and Leprosy Program (ZIHTLP).

KEY FINDINGS

HIV Indicator	Female	95% CI	Male	95% CI	Total	95% CI
Annual incidence (%)						
15-49 years	0.34	0.18-0.50	0.14	0.02-0.26	0.24	0.14-0.35
15-64 years	0.34	0.19-0.50	0.17	0.05-0.29	0.25	0.15-0.36
Prevalence Total (%)						
15-49 years	6.2	5.7-6.7	3.1	2.7-3.5	4.7	4.3-5.0
15-64 years	6.5	6.0-7.0	3.5	3.1-3.9	5.0	4.7-5.4
0-14 years	0.5	0.2-0.8	0.3	0.1-0.5	0.4	0.2-0.6
Prevalence, Mainland (%)						
15-49 years	6.4	5.8-6.9	3.1	2.7-3.6	4.8	4.4-5.1
15-64 years	6.7	6.1-7.2	3.6	3.2-4.0	5.1	4.8-5.5
0-14 years	0.5	0.2-0.8	0.3	0.1-0.5	0.4	0.2-0.6
Prevalence, Zanzibar (%)						
15-49 years	0.8	0.2-1.5	0.0	0.0-1.0	0.4	0.1-0.8
15-64 years	0.9	0.2-1.5	0.0	0.0-0.8	0.4	0.1-0.8
0-14 years	0.0	0.0-2.3	0.0	0.0-1.9	0.0	0.0-1.9
Viral Load Suppression (%)						
15-64 years	57.5	54.0-61.0	41.2	35.7-46.7	52.0	48.6-55.4
0-14 years	11.7	0.0-23.8	*	*	18.4	4.6-32.3

95% CI (confidence interval) indicates the interval within which the true population parameter is expected to fall 95% of the time.

Viral load suppression is defined as HIV RNA <1,000 copies per ml of plasma among HIV-positive individuals; incidence measurement based on mean duration of recent infection (MDRI) of 130 days;

* Male 0-14 year old VLS not shown due to insufficient sample size to obtain a meaningful estimate for subcategory

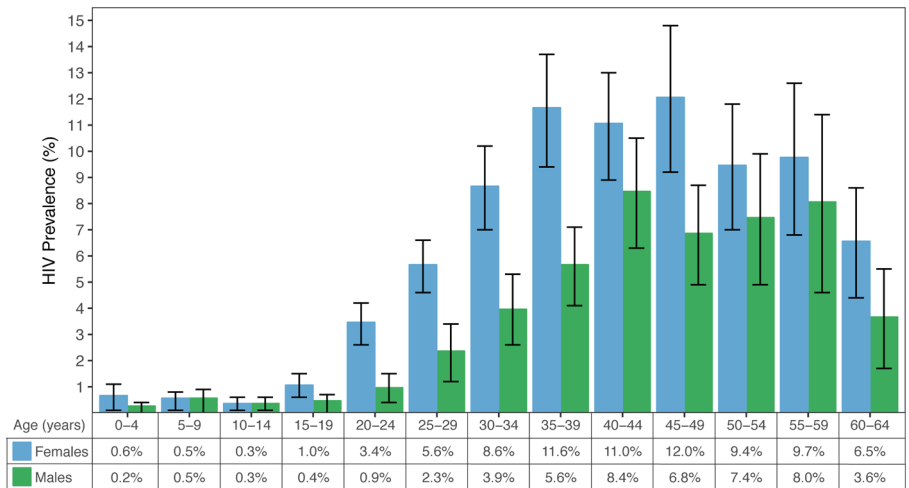
Annual incidence of HIV among adults ages 15 to 64 years in Tanzania is 0.25% (0.34% among females and 0.17% among males). This corresponds to approximately 72,000 new cases of HIV annually among adults ages 15 to 64 years in Tanzania.

Prevalence of HIV among adults ages 15 to 64 years in Tanzania is 5.0% (6.5% among females and 3.5% among males). This corresponds to approximately 1.4 million people living with HIV (PLHIV) ages 15 to 64 years in Tanzania.

Prevalence of viral load suppression (VLS) among HIV-positive adults ages 15 to 64 years in Tanzania is 52.0% (57.5% among females and 41.2% among males).

HIV PREVALENCE, BY AGE AND SEX

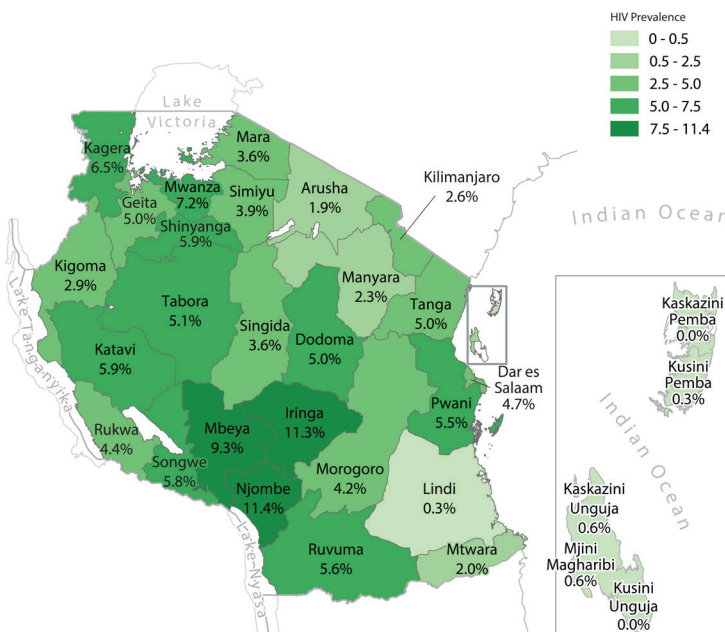
HIV prevalence peaks at 12% among females aged 45 to 49, as compared to a peak of 8.4% among males aged 40 to 44. HIV prevalence among 15 to 24 year olds is 1.4% (2.1% among females and 0.6% among males). The disparity in HIV prevalence between males and females is most pronounced among younger adults, with prevalence among women in age groups 15 to 19, 20 to 24, 25 to 29, 30 to 34, and 35 to 39 more than double that of males in the same age groups.



Error bars represent 95% confidence intervals.

HIV PREVALENCE AMONG ADULTS 15+, BY REGION

Among adults 15 years and older, HIV prevalence varies geographically across Tanzania, ranging from 11.4% in Njombe and 11.3% in Iringa to less than 1% in Lindi and Zanzibar.

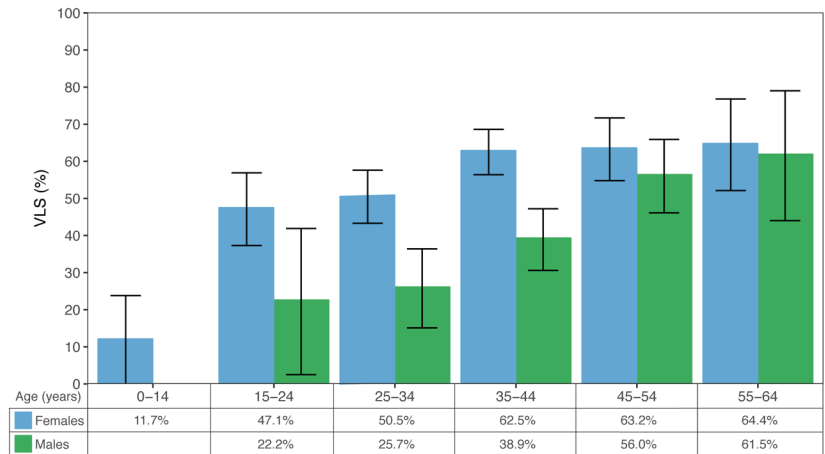


Region	HIV Prevalence	95% CI
Dodoma	5.0	2.6-7.5
Arusha	1.9	0.6-3.3
Kilimanjaro	2.6	1.7-3.4
Tanga	5.0	3.2-6.7
Morogoro	4.2	3.0-5.3
Pwani	5.5	4.3-6.8
Dar es Salaam	4.7	3.7-5.6
Lindi	0.3	0.0-0.8
Mtwara	2.0	0.0-4.2
Ruvuma	5.6	4.4-6.7
Iringa	11.3	9.0-13.6
Mbeya	9.3	7.4-11.2
Singida	3.6	0.6-6.5
Tabora	5.1	4.2-6.0
Rukwa	4.4	3.4-5.4
Kigoma	2.9	1.6-4.3
Shinyanga	5.9	5.3-6.5
Kagera	6.5	4.1-8.8
Mwanga	7.2	4.9-9.4
Mara	3.6	2.5-4.7
Manyara	2.3	1.1-3.5
Njombe	11.4	7.5-15.3
Katavi	5.9	4.3-7.5
Simiyu	3.9	2.3-5.6
Geita	5.0	3.0-7.0
Songwe	5.8	3.5-8.1
Kaskazini Unguja	0.6	0.0-1.8
Kusini Unguja	0.0	0.0-2.8
Mjini Magharibi	0.6	0.1-1.1
Kaskazini Pemba	0.0	0.0-3.2
Kusini Pemba	0.3	0.0-0.9

VIRAL LOAD SUPPRESSION AMONG PEOPLE LIVING WITH HIV, BY AGE AND SEX

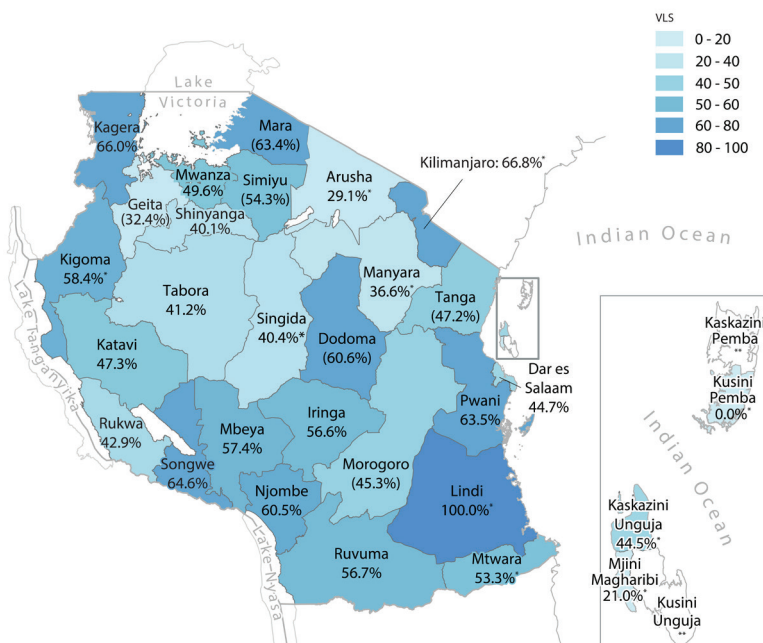
VLS among HIV-positive individuals in Tanzania is highest among older adults, with 64.4% of females ages 55 to 64 virally suppressed, and 61.5% of males ages 55 to 64 virally suppressed. Gender disparity in VLS is greater among younger adults, with 47.1% and 50.5% of females ages 15 to 24 and 25 to 34 virally suppressed, respectively and 22.2% and 25.7% of men in the corresponding age groups virally suppressed.

Error bars represent 95% confidence intervals. Estimate for males 0-14 is omitted due to a sample size below 25 observations.



VIRAL LOAD SUPPRESSION AMONG PEOPLE LIVING WITH HIV, AGED 15+, BY REGION

Among HIV-positive adults 15 years and older, VLS varies geographically across Tanzania, ranging from 66.0% in Kagera and 66.8% in Kilimanjaro to 40.1% in Shinyanga and 29.1% in Arusha.



* Indicates that estimate is based on <25 observations and should be interpreted with caution

() Estimates in parentheses are based on 25-49 observations and should also be interpreted with caution

** Indicates that the region had no HIV-positive samples with which to estimate VLS

Region	VLS Prevalence	95% CI
Dodoma	(60.6)	35.7-85.5
Arusha	29.1*	4.1-54.0
Kilimanjaro	66.8*	46.8-86.8
Tanga	(47.2)	37.4-57.0
Morogoro	(45.3)	23.9-66.6
Pwani	63.5	53.9-73.0
Dar es Salaam	44.7	36.7-52.7
Lindi	100.0*	0.1-100.0
Mtwara	53.3*	43.8-62.8
Ruvuma	56.7	45.8-67.5
Iringa	56.6	49.0-64.2
Mbeya	57.4	47.6-67.1
Singida	40.4*	0.0-83.1
Tabora	41.2	30.6-51.7
Rukwa	42.9	31.5-54.2
Kigoma	58.4*	36.1-80.6
Shinyanga	40.1	30.1-50.1
Kagera	66.0	53.4-78.5
Mwanza	49.6	39.2-60.0
Mara	(63.4)	51.4-75.4
Manyara	36.6*	9.7-63.5
Njombe	60.5	46.6-74.4
Katavi	47.3	38.3-56.4
Simiyu	(54.3)	28.2-80.4
Geita	(32.4)	21.3-43.6
Songwe	64.6	52.6-76.7
Kaskazini Unguja	44.5*	42.3-46.7
Kusini Unguja	**	**
Mjini Magharibi	21.0*	0.0-65.9
Kaskazini Pemba	**	**
Kusini Pemba	0*	0.0-99.9

90-90-90: an ambitious treatment target to help end the AIDS epidemic

By 2020, 90% of all PLHIV will know their HIV status; 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy (ART); and 90% of all people receiving ART will have viral suppression.

Diagnosed

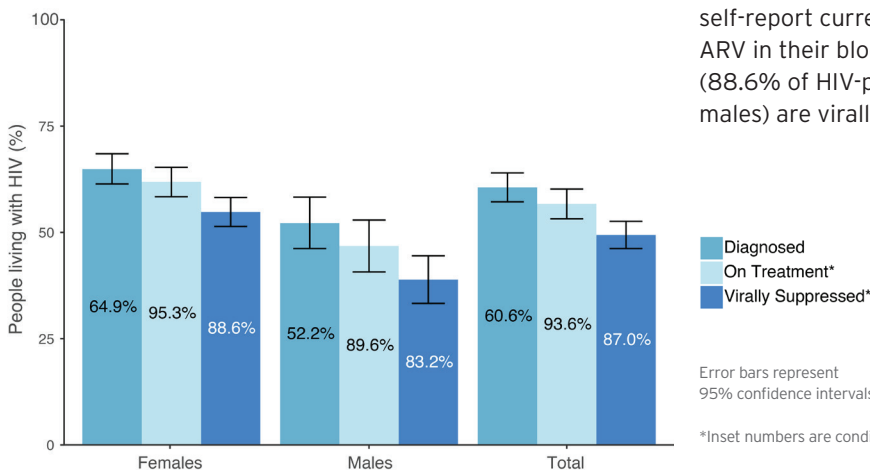
In Tanzania, 60.6 % of PLHIV ages 15 years and older are aware of their HIV status: 64.9% of HIV-positive females and 52.2% of HIV-positive males. Awareness was defined as self-reporting HIV-positive status and/or having a detectable antiretroviral (ARV) in the blood following laboratory testing.

On Treatment

Among PLHIV ages 15 years and older who know their HIV status, 93.6% are on ART: 95.3% of HIV-positive females and 89.6% of HIV-positive males. Being on ART was defined as self-reporting current use of ART and/or having a detectable ARV in the blood following laboratory testing.

Virally Suppressed

Among PLHIV ages 15 years and older years who self-report current use of ART and/or had a detectable ARV in their blood following laboratory testing, 87.0% (88.6% of HIV-positive females and 83.2% of HIV-positive males) are virally suppressed.



Error bars represent 95% confidence intervals.

*Inset numbers are conditional proportions. See text above.

PREVALENCE OF HEPATITIS B, BY SEX, AGE, AND HIV STATUS

THIS also tested a subset of participants for hepatitis B surface antigen to get a national estimate of acute or chronic hepatitis B prevalence. Among adults ages 15 and older, prevalence of hepatitis B infection is similar among HIV-positive and HIV-negative individuals. Although the estimate for HIV-positive individuals (5.2%) is slightly higher compared with HIV-negative individuals (3.4%), the estimates are not statistically different. These are the first national estimates of the prevalence of acute or chronic hepatitis B in Tanzania and will be foundational for developing the national hepatitis response.

HIV Status and Age	Females		Males		Total	
	Hepatitis B Prevalence	95% CI	Hepatitis B Prevalence	95% CI	Hepatitis B Prevalence	95% CI
HIV Positive						
15-49 years	0**	0.0-10.9**	*	*	4.3	0-11.3
15+ years	0**	0.0-7.1**	*	*	5.2	1.8-8.6
HIV Negative						
15-49 years	3.9	1.7-6.1	4.0	1.1-7.0	4.0	2.2-5.8
15+ years	3.5	1.7-5.3	3.4	0.9-5.8	3.4	1.9-4.9
Total						
15-49 years	3.7	1.6-5.8	4.3	1.4-7.2	4.0	2.3-5.8
15+ years	3.3	1.6-5.0	3.8	1.4-6.2	3.5	2.1-5.0

95% CI (confidence interval) indicates the interval within which the true population parameter is expected to fall 95% of the time.

* Suppressed due to denominator of fewer than 25 cases

** Warning, denominator of 25-49 cases

A representative subsample of 1,052 adults 15-49 years, and 1,310 adults 15 years and older were tested for hepatitis B surface antigen which indicates either acute or chronic hepatitis B.

CONCLUSIONS

- An estimated 60.6% of adults 15 years of age and older are aware of their HIV-positive status, well below the UNAIDS' goal of 90%. Concerted efforts and intense programmatic focus are needed in diagnosing PLHIV (1st 90).
- There are important variations in HIV burden by regions and sex that should be considered in targeted HIV prevention and treatment efforts.
- Women have higher prevalence compared to men. Among adults aged 15-49, there are approximately two infections in women for each infection in men.
- Men have lower awareness of their HIV status than women. Men also have lower linkage to treatment (2nd 90) and viral load suppression (3rd 90) compared to women. HIV prevention among women and rapid acceleration of HIV diagnosis, combined with improved linkage to treatment and viral load suppression among men is critical for epidemic control.
- Low viral load suppression in children indicates need for improvement in diagnosis and treatment of HIV infection in children.

RESPONSE RATES AND HIV TESTING METHODS

Of 15,504 eligible households, 14,811 (95%) completed a household interview. Of 19,852 eligible women and 16,235 eligible men ages 15 years and older, 90% of women and 85% of men were interviewed and tested for HIV. Of 10,452 eligible children ages 0 to 14 years, 92% were tested for HIV. A representative subsample of 1,310 adults ages 15 years and older were tested for hepatitis B surface antigen, which indicates either acute or chronic hepatitis B.

HIV prevalence 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 the BioRad Geenius HIV-1/HIV-2 supplemental assay. Viral load testing was conducted on all HIV-positive samples. A laboratory-based incidence testing algorithm (HIV-1 Limiting Antigen (LAG) avidity plus viral load and ARV results) was used to distinguish recent from long-term infection, and 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, with time cutoff (T)=1.0 year and residual proportion false recent (PFR)=0.00. Survey weights are utilized for all estimates.

Tanzania HIV Impact Survey (THIS) is part of the Population Based HIV Impact Assessment (PHIA) Project which is a multi-country project funded by PEPFAR to conduct national HIV-focused surveys that describe the status of the HIV epidemic. Results will measure important national and regional HIV-related parameters, including progress toward 90-90-90 goals, and will guide policy and funding priorities. ICAP at Columbia University is implementing the PHIA Project in close collaboration with CDC and other partners.

See phia.icap.columbia.edu for more details.



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