

ZAMBIA POPULATION-BASED HIV IMPACT ASSESSMENT ZAMPHIA 2015-2016



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The Zambia Population-Based HIV Impact Assessment (ZAMPHIA), a household-based national survey, was conducted between March and August 2016 in order to measure the status

of Zambia's national HIV response. ZAMPHIA offered HIV counseling and testing with return of results, and collected information about uptake of care and treatment services. This survey is the first in Zambia to measure national HIV incidence, pediatric HIV prevalence, and viral load suppression. The results provide information on national and subnational progress toward control of the HIV epidemic.

ZAMPHIA was led by the Government of Zambia through the Ministry of Health (MOH), conducted with funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and technical assistance through the U.S. Centers for Disease Control and Prevention (CDC). The survey was implemented by ICAP at Columbia University in collaboration with local partners, including the Central Statistical Office (CSO), the Tropical Disease Research Center (TDRC), the University Teaching Hospital (UTH), and the University of Zambia.

KEY FINDINGS

HIV Indicator	Female	95% CI	Male	95% CI	Total	95% CI
Annual incidence (%)						
15-49 years	1.08	0.70-1.46	0.33	0.10-0.56	0.70	0.47-0.93
15-59 years	1.00	0.65-1.36	0.33	0.11-0.56	0.66	0.45-0.88
Prevalence (%)						
15-49 years	14.5	13.6-15.4	8.6	7.9-9.3	11.6	10.9-12.3
15-59 years	14.9	14.0-15.8	9.5	8.8-10.3	12.3	11.6-13.0
0-14 years	---	---	---	---	1.3	1.0-1.6
Viral load suppression (%)						
15-59 years	61.3	58.7-63.8	57.5	53.5-61.5	59.8	57.4-62.2

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 adults.

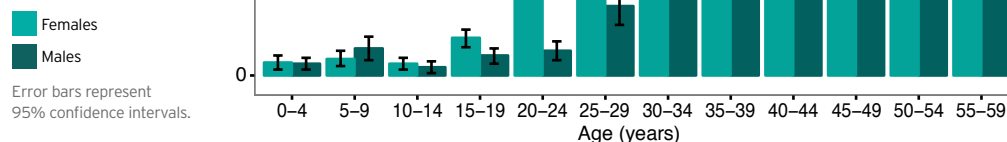
Annual incidence of HIV among adults ages 15 to 59 years in Zambia is 0.66 percent: 1.0 percent among females and 0.33 percent among males. This corresponds to approximately 46,000 new cases of HIV annually among adults ages 15 to 59 years in Zambia.

Prevalence of HIV among adults ages 15 to 59 years in Zambia is 12.3 percent: 14.9 percent among females and 9.5 percent among males. This corresponds to approximately 980,000 people living with HIV (PLHIV) ages 15 to 59 years in Zambia.

Prevalence of viral load suppression (VLS) among HIV-positive adults ages 15 to 59 years in Zambia is 59.8 percent: 61.3 percent among females and 57.5 percent among males.

HIV PREVALENCE, BY AGE AND SEX

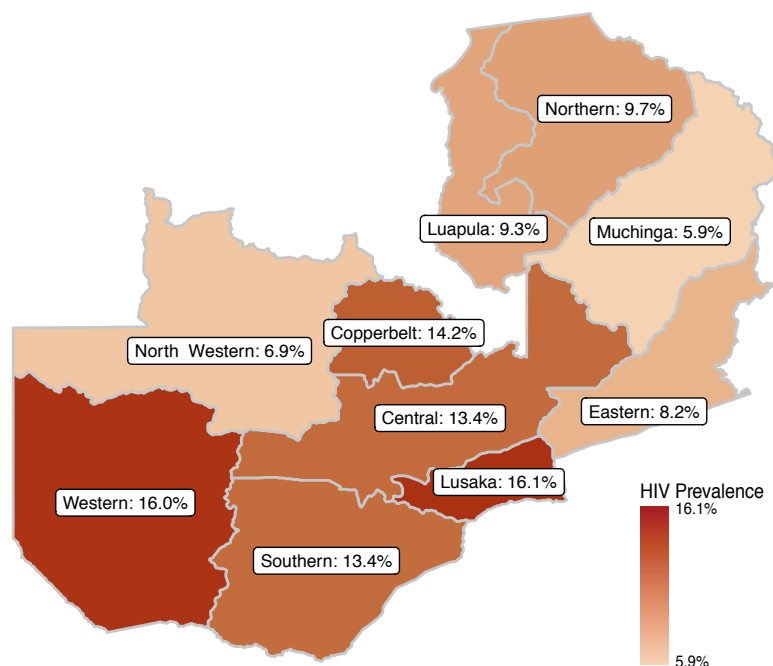
HIV prevalence peaks at 30.5 percent among females ages 40 to 44 years, as compared to 24.3 percent among males ages 45 to 49 years. The disparity in HIV prevalence by sex is most pronounced among young adults: HIV prevalence among 20- to 24-year-olds is four times as high among females (8.6 percent) than males (2.1 percent).



HIV PREVALENCE AMONG ADULTS, BY PROVINCE

Among adults ages 15 to 59 years, prevalence of HIV varies geographically across Zambia, ranging from 5.9 percent in Muchinga Province to 16.0 percent in Western Province and 16.1 percent in Lusaka.

Province	HIV Prevalence	95% CI
Central	13.4	11.1-15.8
Copperbelt	14.2	12.7-15.8
Eastern	8.2	6.1-10.4
Luapula	9.3	6.8-11.8
Lusaka	16.1	14.5-17.8
Muchinga	5.9	4.2-7.7
Northern	9.7	7.5-11.9
North Western	6.9	5.6-8.2
Southern	13.4	11.7-15.1
Western	16.0	11.7-20.4



VIRAL LOAD SUPPRESSION AMONG HIV-POSITIVE PEOPLE, BY AGE AND SEX

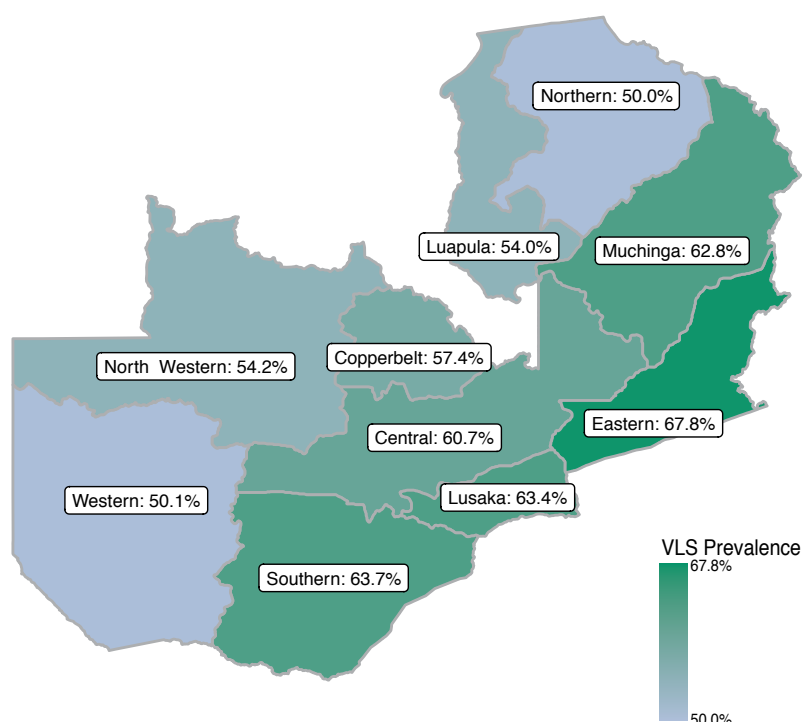
Prevalence of VLS among HIV-positive people in Zambia is highest among older adults: 73.5 percent among HIV-positive females and 73.0 percent among HIV-positive males ages 45 to 59 years. In contrast, prevalence of VLS is distinctly lower among younger adults: 34.0 percent among HIV-positive females and 35.7 percent among HIV-positive males ages 15 to 24 years.



VIRAL LOAD SUPPRESSION AMONG HIV-POSITIVE ADULTS, BY PROVINCE

Among HIV-positive adults ages 15 to 59 years, prevalence of VLS varies geographically across Zambia, ranging from 50.0 percent in Northern Province to 67.8 percent in the Eastern Province.

Province	VLS Prevalence	95% CI
Central	60.7	53.5-67.9
Copperbelt	57.4	52.2-62.7
Eastern	67.8	60.1-75.4
Luapula	54.0	38.7-69.3
Lusaka	63.4	58.9-67.9
Muchinga	62.8	53.2-72.5
Northern	50.0	35.1-64.9
North Western	54.2	46.3-62.0
Southern	63.7	56.7-70.6
Western	50.1	37.7-62.6



ACHIEVEMENT OF THE 90-90-90 GOALS AMONG HIV-POSITIVE ADULTS, BY SEX

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

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

Diagnosed

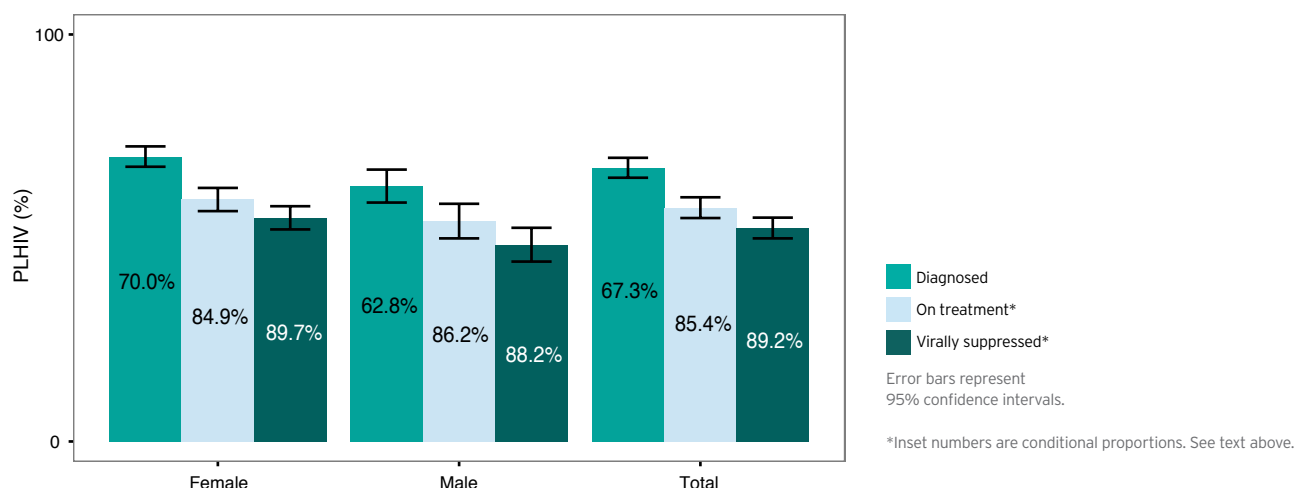
In Zambia, 67.3 percent of PLHIV ages 15 to 59 years report knowing their HIV status: 70.0 percent of HIV-positive females and 62.8 percent of HIV-positive males know their HIV status.

On Treatment

Among PLHIV ages 15 to 59 years who know their HIV status, 85.4 percent self-report current use of ART: 84.9 percent of HIV-positive females and 86.2 percent of HIV-positive males who know their HIV status self-report current use of ART.

Virally Suppressed

Among PLHIV ages 15 to 59 years who self-report current use of ART, 89.2 percent are virally suppressed: 89.7 percent of HIV-positive females and 88.2 percent of HIV-positive males who self-report current use of ART are virally suppressed.



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

Among adults ages 15 to 59 years, prevalence of infection with hepatitis B virus (HBV) is higher among HIV-positive (7.1%) than HIV-negative (5.4%) adults. Among children ages 0 to 14 years, HBV infection is more prevalent among HIV-positive (5.2%) than HIV-negative (1.3%) children. Prevalence of HBV is especially high among HIV-positive males ages 15 to 59 years (10.2%).

Hepatitis B virus testing was conducted in each household using a serological hepatitis B surface antigen (HBsAg) rapid diagnostic test, which helps to diagnose acute infection and confirm chronic infection.

HIV Status and Age	Female		Male		Total	
	HBV Prevalence	95% CI	HBV Prevalence	95% CI	HBV Prevalence	95% CI
HIV Positive						
0-14	8.1	2.9-13.3	2.8	0.0-6.9	5.2	1.9-8.5
15-59	5.1	4.0-6.3	10.2	7.9-12.6	7.1	5.9-8.3
0-59	5.3	4.2-6.4	9.3	7.1-11.5	6.9	5.8-8.0
HIV Negative						
0-14	1.2	0.9-1.5	1.3	0.9-1.8	1.3	1.0-1.6
15-59	3.9	3.5-4.3	6.9	6.2-7.6	5.4	5.0-5.8
0-59	2.5	2.3-2.8	4.1	3.7-4.5	3.3	3.0-3.6
Total						
0-14	1.3	1.0-1.6	1.4	1.0-1.8	1.3	1.1-1.6
15-59	4.1	3.7-4.5	7.2	6.5-7.9	5.6	5.2-6.0
0-59	2.8	2.5-3.0	4.4	3.9-4.8	3.6	3.3-3.8

CONCLUSIONS

- Since 2004, Zambia's HIV interventions have resulted in progress toward the UNAIDS' targets of 90-90-90 (67-85-89).
- The declining national HIV incidence depicts strides toward epidemic control. However, incidence among women remains unacceptably high.
- With the goal of an AIDS-free generation by 2030, continued expansion of HIV testing and treatment, especially for men and young women will play a central role.
- Beyond this summary sheet, further analysis will shed light on HIV behaviors, services and treatment outcomes.

RESPONSE RATES AND HIV TESTING METHODS

Of 12,310 eligible households, 89.0 percent completed a household interview. Of 13,326 eligible women and 11,349 eligible men ages 15 to 59 years, 82.0 percent of women and 71.4 percent of men were both interviewed and tested for HIV. Of 11,669 eligible children ages 0 to 14 years, 68.2 percent were tested for HIV.

HIV prevalence testing was conducted in each household using a serological rapid diagnostic testing algorithm based on Zambia's national guidelines, with laboratory confirmation of seropositive samples using a supplemental assay. A laboratory-based incidence testing algorithm (HIV-1 LAg avidity plus viral load) was used to distinguish recent from long-term infection, and incidence estimates were obtained using the CDC Incidence Calculator, which uses [the formula recommended](#) by the WHO 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.

The PHIA Project 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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This project is supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through CDC under the terms of cooperative agreement #U2GGH001226. The contents of this document do not necessarily reflect the views of the United States Government. The results presented should be considered preliminary and are subject to change.