

# ETHIOPIA POPULATION-BASED HIV IMPACT ASSESSMENT EPHIA 2017-2018



The Ethiopia Population-based HIV Impact Assessment (EPHIA), a household-based national survey in urban Ethiopia, was conducted between October 2017 and April 2018 in order to measure the status of Ethiopia's national response to their

urban HIV epidemic. EPHIA offered household-based HIV counseling and testing, with the return of results and referral to clinics for those who tested HIV-positive, and collected information about the uptake of HIV prevention, care, and treatment services. This is the first survey to estimate HIV incidence, viral load suppression (VLS), and pediatric prevalence in urban Ethiopia. This survey focused only on the urban population since previous studies showed a less than one percent HIV prevalence in rural areas.

The survey estimated HIV prevalence and VLS at a population level among people ages 0-64 years, and HIV incidence at ages 15-64 years, living in urban areas. The seroprevalence of syphilis and hepatitis B surface antigen among people ages 15-64 years living with HIV was also estimated. The survey also collected information on socio-demographic determinants of the epidemic and uptake of prevention, care and treatment services. The results provide information on national and regional progress towards control of the HIV epidemic in urban Ethiopia.

EPHIA was led by the Government of Ethiopia through the Federal Ministry of Health (FMOH)/ the Ethiopia Public Health Institute (EPHI) with funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and technical assistance from the U.S. Centers for Disease Control and Prevention (CDC). The survey was implemented by ICAP at Columbia University in collaboration with EPHI and other local partners, including the Central Statistical Agency of Ethiopia (CSA).

## KEY FINDINGS

HIV Indicator	Female	95% CI	Male	95% CI	Total	95% CI
Incidence (%)						
15-49 years	*	*	*	*	0.05	0.00-0.11
15-64 years	*	*	*	*	0.06	0.00-0.12
Prevalence (%)						
0-14 years	0.3	0.1-0.6	0.3	0.1-0.5	0.3	0.1-0.5
15-49 years	4.0	3.5-4.6	1.7	1.3-2.1	2.9	2.5-3.3
50-64 years	4.7	3.3-6.0	4.2	2.8-5.6	4.4	3.4-5.4
15-64 years	4.1	3.6-4.7	1.9	1.5-2.4	3.0	2.6-3.4
Viral load suppression (%)						
15-49 years	71.4	66.3-76.4	60.6	49.1-72.2	68.2	62.8-73.5
15-64 years	71.7	67.2-76.3	66.8	57.1-76.4	70.1	65.4-74.8

95% confidence intervals are ranges calculated such that if the survey were repeated multiple times, the resulting range would include the true population value 95% of the time. The point estimates have been suppressed due to a small sample size. Viral load suppression is defined as HIV RNA <1,000 copies per ml of plasma.

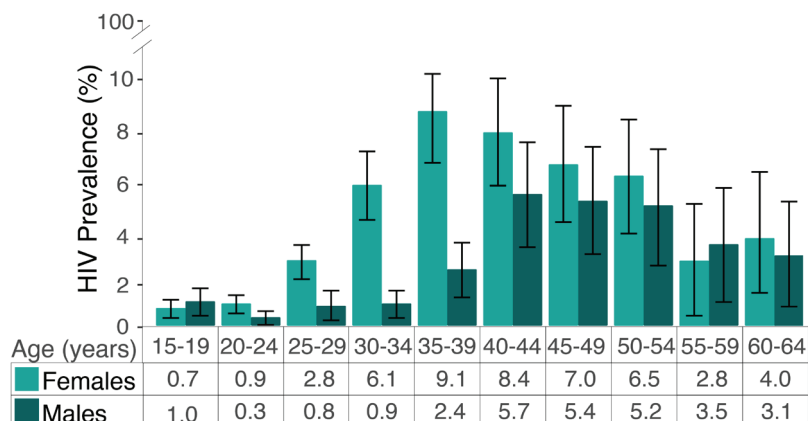
The annual incidence of HIV among adults ages 15-64 years in urban Ethiopia is 0.06%, which corresponded to approximately 7,000 new cases of HIV annually among adults ages 15-64 years living in urban Ethiopia.

Prevalence of HIV among adults ages 15-64 years in urban Ethiopia is 3.0%: 4.1% among females and 1.9% among males. This corresponds to approximately 380,000 people living with HIV (PLHIV) ages 15-64 years in urban Ethiopia as of April 2018. Prevalence of HIV among children ages 0-14 years in urban Ethiopia is 0.3%, the same among both females and males. This corresponds to approximately 19,000 children ages 0-14 years living with HIV in urban Ethiopia.

Prevalence of VLS among HIV-positive adults ages 15-64 years in urban Ethiopia is 70.1%: 71.7% among females and 66.8% among males.

## HIV PREVALENCE, BY AGE AND SEX, IN URBAN AREAS

Among adults ages 15-64 years in urban Ethiopia, there are gender differences in HIV prevalence by age. This is most pronounced among 30-34 year-olds where the prevalence is almost seven times higher among women (6.1%) than among men (0.9%). Among females, HIV prevalence peaks at 9.1% among 35-39 year-olds. Among males, HIV prevalence peaks at 5.7% among 40-44 year-olds.

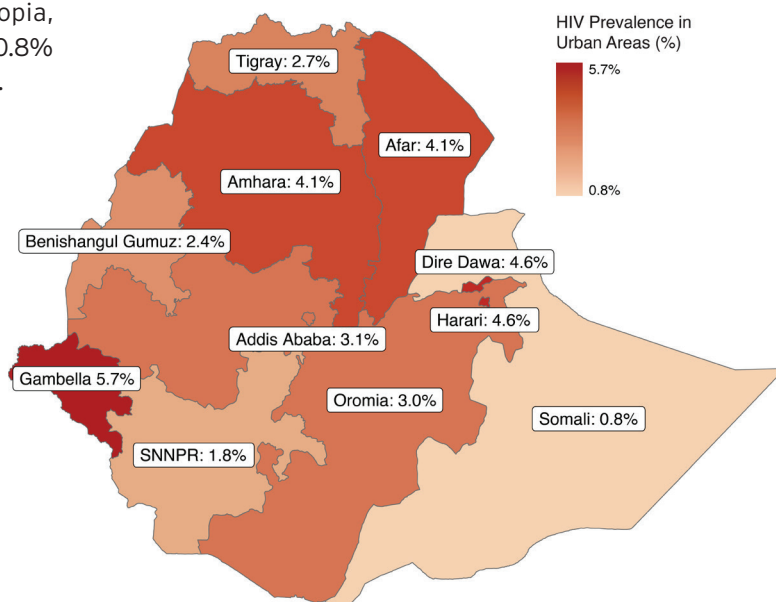


Error bars represent 95% confidence intervals.

## HIV PREVALENCE AMONG ADULTS IN URBAN AREAS, BY REGION

Among adults ages 15-64 years in urban Ethiopia, prevalence of HIV varies geographically, ranging from 0.8% in Ethiopian Somali region to 5.7% in Gambella region.

Region	HIV Prevalence in Urban Areas (%)	95% CI
Tigray	2.7	1.3-4.0
Afar	4.1	2.1-6.1
Amhara	4.1	3.0-5.2
Oromia	3.0	2.2-3.8
Somali	0.8	0.0-1.6
Benishangul Gumuz	2.4	1.5-3.4
SNNPR	1.8	1.0-2.5
Gambella	5.7	2.2-9.2
Harari	4.6	3.2-6.0
Addis Ababa	3.1	2.1-4.0
Dire Dawa	4.6	2.2-7.1
<b>Total</b>	<b>3.0</b>	<b>2.6-3.4</b>



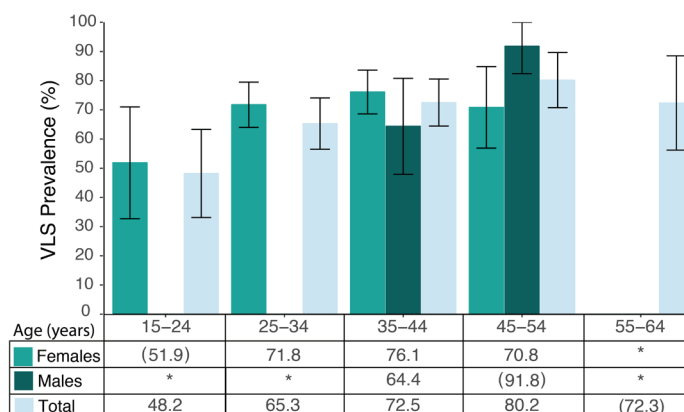
## VIRAL LOAD SUPPRESSION AMONG HIV-POSITIVE PEOPLE, BY AGE AND SEX, IN URBAN AREAS

Prevalence of VLS among HIV-positive adults in urban Ethiopia peaks at 80.2% among adults ages 45-54 years. In contrast, VLS is distinctly lower at 48.2% in adolescents and young adults ages 15-24 years. Among females, VLS peaks at 76.1% among 35-44 year-olds. Among males VLS peaks at 91.8% among 45-54 year-olds.

Estimates based on less than 25 observations have been suppressed with an asterisk due to inadequate sample size.

Estimates based on 25-49 observations are included in parentheses and should be interpreted with caution.

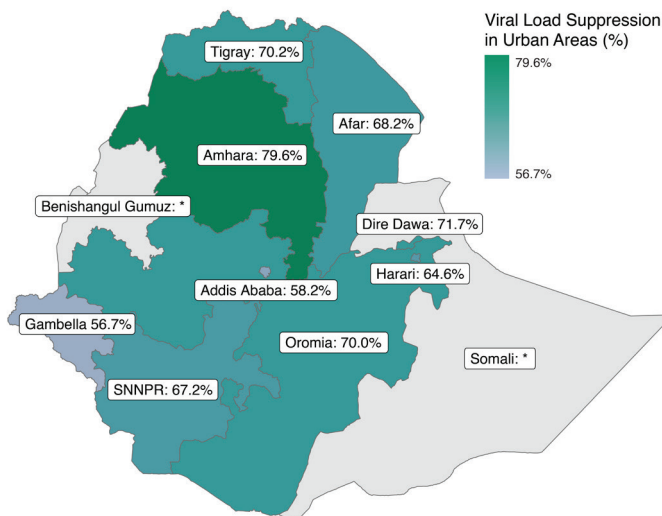
Error bars represent 95% confidence intervals.



## VIRAL LOAD SUPPRESSION AMONG HIV-POSITIVE ADULTS IN URBAN AREAS, BY REGION

Among HIV-positive adults ages 15-64 years, VLS varies geographically in urban areas across regions from 56.7% in Gambella region to 79.6% in Amhara region.

Region	VLS Prevalence in Urban Areas (%)	95% CI
Tigray	(70.2)	56.2- 84.1
Afar	(68.2)	53.1- 83.2
Amhara	79.6	69.2- 89.9
Oromia	70.0	61.2- 78.8
Somali	*	*
Benishangul Gumuz	*	*
SNNPR	(67.2)	52.4- 81.9
Gambella	(56.7)	38.3- 75.1
Harari	(64.6)	50.3- 78.9
Addis Ababa	58.2	46.4- 70.1
Dire Dawa	(71.7)	49.3- 94.1
<b>Total</b>	<b>70.1</b>	<b>65.4-74.8</b>



Estimates based on less than 25 observations have been suppressed with an asterisk due to inadequate sample size.

Estimates based on 25-49 observations are included in parentheses and should be interpreted with caution.

## ACHIEVEMENT OF THE 90-90-90 GOALS AMONG HIV-POSITIVE ADULTS, BY SEX, IN URBAN AREAS

### 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

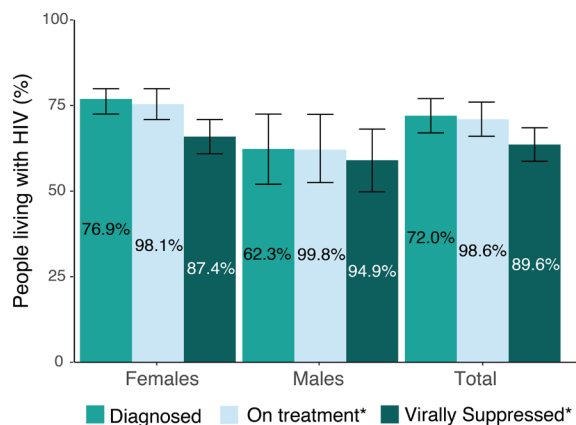
In urban Ethiopia, 72.0% of PLHIV ages 15-64 years self-reported knowing their HIV status: 76.9% of HIV-positive females and 62.3% of HIV-positive males know their HIV status.

#### On Treatment

Among PLHIV ages 15-64 years who know their HIV status, 98.6% self-report current use of ART: 98.1% of HIV-positive females and 99.8% of HIV-positive males who know their HIV status self-report current use of ART.

#### Virally Suppressed

Among PLHIV ages 15-64 years who self-report current use of ART, 89.6% are virally suppressed: 87.4% of HIV-positive females and 94.9% of HIV-positive males who self-report current use of ART are virally suppressed.



Percentages shown in the graph refer to the conditional 90-90-90 targets described in the text at left.

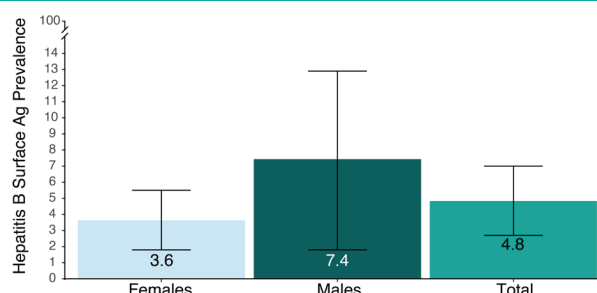
Error bars represent 95% confidence intervals.

## SEROPREVALENCE OF HEPATITIS B SURFACE ANTIGEN AMONG HIV-POSITIVE ADULTS, IN URBAN AREAS

The seroprevalence of hepatitis B surface antigen among adults ages 15-64 years in urban Ethiopia is 4.8%. The prevalence is 3.6% in women and 7.4% in men ages 15-64 years.

Hepatitis B testing was conducted using a serological rapid diagnostic test for hepatitis B surface antigen.

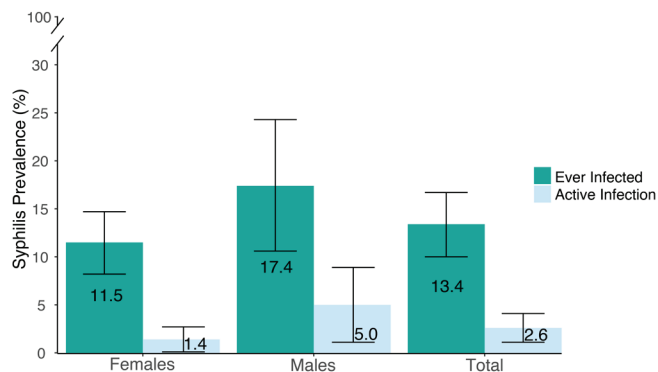
Error bars represent 95% confidence intervals.



## SYPHILIS PREVALENCE AMONG HIV-POSITIVE ADULTS, BY SEX, IN URBAN AREAS

Syphilis testing was conducted for HIV-positive adults, using a serological dual non-treponemal and treponemal rapid diagnostic test.

Among HIV-positive adults ages 15-64 years in urban Ethiopia, 11.5% of females and 17.4% of males have ever been infected with syphilis.<sup>1</sup> The prevalence of active syphilis infection differs among HIV-positive women and men, at 1.4% among women and 5.0% among men ages 15-64 years.



<sup>1</sup> The percentage of adults ever infected with syphilis includes people with active infection. Participants whose test was reactive only to treponemal antibodies were considered ever infected. Error bars represents 95% confidence intervals.

## CONCLUSIONS

- Ethiopia has made considerable progress toward the UNAIDS targets of 90-90-90 in urban areas for adults ages 15-64 years. There is room for improvement in achieving the first 90, particularly for men. Case finding through expansion of targeted HIV testing will be essential to achieving epidemic control in urban Ethiopia by 2020.
- VLS among HIV-positive people in urban areas (70.1%) is close to the UNAIDS target (90%\*90%\*90%=73%), but varies by age, gender, and geographic region. Interventions to improve VLS particularly among younger age groups are needed.
- HIV prevalence in urban Ethiopia varies by age, gender, and geographic region.

## RESPONSE RATES AND HIV TESTING METHODS

Of 11,581 eligible households, 90.9% completed a household interview. Of 12,618 eligible women and 8,920 eligible men ages 15-64 years, 91.9% of eligible women and 84.5% of eligible men were interviewed and tested for HIV. Of 5,536 eligible children ages 0-14 years, 85.4% were tested for HIV. The overall response rates for adults ages 15-64 years was 80.8%; 83.6% for women, 76.8% for men ages 15-64 years. The overall response rate for children ages 0-14 years was 77.6%.

HIV prevalence testing was conducted in each household using a serological rapid diagnostic testing algorithm based on Ethiopia's national guidelines, with laboratory confirmation of seropositive samples using a supplemental assay. Survey weights were 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 measure important national and regional HIV-related parameters in urban areas, 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](http://phia.icap.columbia.edu) for more details.



The mark "CDC" is owned by the US Dept. of Health and Human Services and is used with permission. Use of this logo is not an endorsement by HHS or CDC of any particular product, service, or enterprise.

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 findings and conclusion are those of the authors and do not necessarily represent the official position of the funding agencies. The results presented here should be considered preliminary and are subject to change.