

# CÔTE D'IVOIRE POPULATION-BASED HIV IMPACT ASSESSMENT CIPHIA 2017-2018



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The Côte d'Ivoire Population-based HIV Impact Assessment (CIPHIA), a household-based national survey, was conducted between August 2017 and March 2018 to measure the status of Côte d'Ivoire's national HIV response. CIPHIA offered HIV counseling and testing with return of results, and collected

information about uptake of HIV care and treatment services. This survey was the first in Cote d'Ivoire to measure national HIV incidence and viral load suppression among adults (defined as those aged 15-64 years), and to estimate the size of specific populations that are key to the epidemic and response at the national level. The results provide information on national and subnational progress toward control of the HIV epidemic.

CIPHIA was led by the Government of Côte d'Ivoire through the Ministry of Health and Public Hygiene (MSHP), 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 National Institute of Statistics (INS).

## KEY FINDINGS

HIV Indicator	Female	95% CI	Male	95% CI	Total	95% CI
<b>Annual Incidence (%) *</b>						
Ages 15-49 years	0.03	0.00-0.10	0.03	0.00-0.10	0.03	0.00-0.08
Ages 15-64 years	0.03	0.00-0.09	0.03	0.00-0.09	0.03	0.00-0.07
<b>Prevalence (%)</b>						
Ages 15-49 years	3.6	3.0-4.1	1.4	1.0-1.8	2.5	2.1-2.8
Ages 15-64 years	4.1	3.6-4.6	1.7	1.3-2.1	2.9	2.5-3.2
<b>Viral Load Suppression (%)</b>						
Ages 15-49 years	38.4	29.2-47.7	20.1	11.9-28.3	33.0	25.6-40.3
Ages 15-64 years	45.9	37.2-54.5	27.7	19.0-36.5	40.2	33.2-47.2

\* Incidence estimates are based on a small number of recent infections. The survey was powered to estimate national incidence and not for sex-disaggregated estimates; therefore, these estimates and confidence intervals (CIs) should be interpreted with caution. 95% CIs 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. Viral load suppression (VLS) is defined as HIV RNA <1,000 copies per milliliter (mL) of plasma. HIV prevalence refers to prevalence of HIV-1 and HIV-2. VLS is among only those people living with HIV-1.

Annual incidence of HIV among adults (defined as those aged 15-64 years) in Côte d'Ivoire was 0.03% (among both men and women). That corresponded to approximately 4,000 new cases of HIV per year among adults.

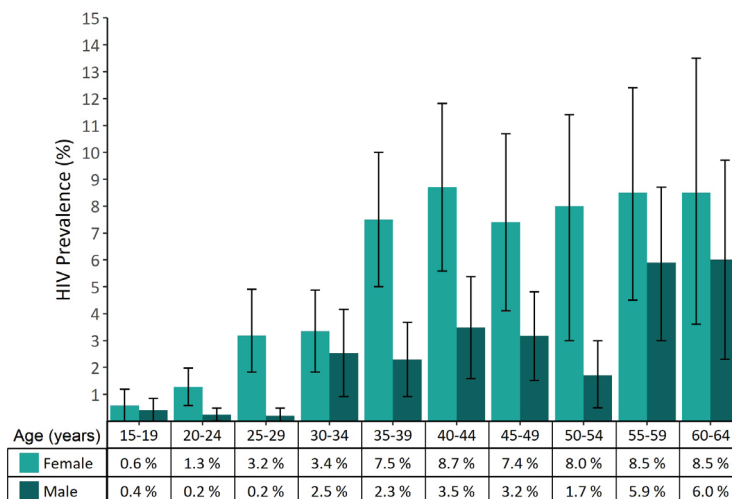
Prevalence of HIV among adults in Côte d'Ivoire was 2.9%: 4.1% among women and 1.7% among men. This corresponded to approximately 382,000 adults living with HIV in Côte d'Ivoire.

Prevalence of viral load suppression (VLS) among HIV-positive adults in Côte d'Ivoire was 40.2%: 45.9% among women and 27.7% among men living with HIV.

## HIV PREVALENCE, BY AGE AND SEX

Among adults (defined as those aged 15-64 years), HIV prevalence peaked at 8.7% for women aged 40-44 years and at 5.9% and 6.0% for men aged 55-59 and 60-64 years, respectively. HIV prevalence was significantly higher among women than men in several age groups, including ages 20-24, 25-29, 35-39, 40-44 and 50-54 years. This difference was most pronounced among those aged 25-29 years for whom HIV prevalence was approximately sixteen times higher for women (3.2%) than for men (0.2%).

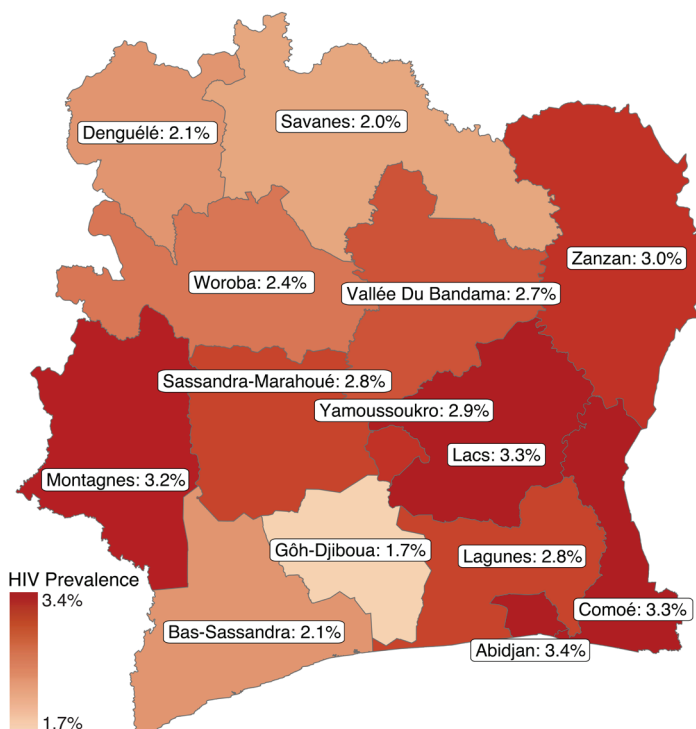
Error bars represent 95% confidence intervals, which indicate the interval within which the true population parameter is expected to fall 95% of the time. HIV prevalence refers to prevalence of HIV-1 and HIV-2.



## HIV PREVALENCE AMONG ADULTS, BY REGION

Among adults, HIV prevalence varied geographically across Côte d'Ivoire, ranging from 1.7% in Gôh-Djiboua to 3.4% in Abidjan.

Region	HIV Prevalence (%)	95% CI
Abidjan	3.4	2.7-4.1
Yamoussoukro	2.9	2.0-3.7
Bas-Sassandra	2.1	1.3-2.9
Comoé	3.3	1.4-5.1
Denguélé	2.1	0.3-3.9
Gôh-Djiboua	1.7	0.6-2.8
Lacs	3.3	1.3-5.3
Lagunes	2.8	0.7-4.8
Montagnes	3.2	1.8-4.6
Sassandra-Marahoué	2.8	1.7-3.9
Savanes	2.0	0.9-3.2
Vallée Du Bandama	2.7	1.8-3.5
Woroban	2.4	0.8-4.0
Zanzan	3.0	2.0-4.1



HIV prevalence refers to prevalence of HIV-1 and HIV-2.

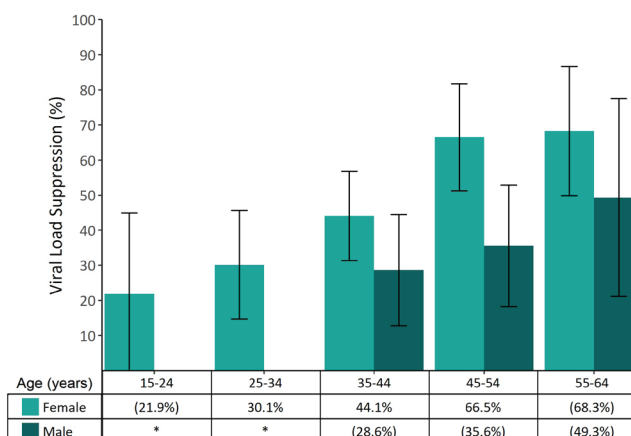
## VIRAL LOAD SUPPRESSION AMONG HIV-POSITIVE PEOPLE, BY AGE AND SEX

Prevalence of VLS among people living with HIV in Côte d'Ivoire peaked among older adults aged 55-64 years at 68.3% among women and 49.3% among men. In contrast, prevalence of VLS was 21.9% among women aged 15-24 years, though this estimate was based on a denominator between 25 and 49 and should be interpreted with caution.

\* Estimates based on a very small denominator (less than 25) have been suppressed with an asterisk.

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

Viral load suppression (VLS) is among only those people living with HIV-1.

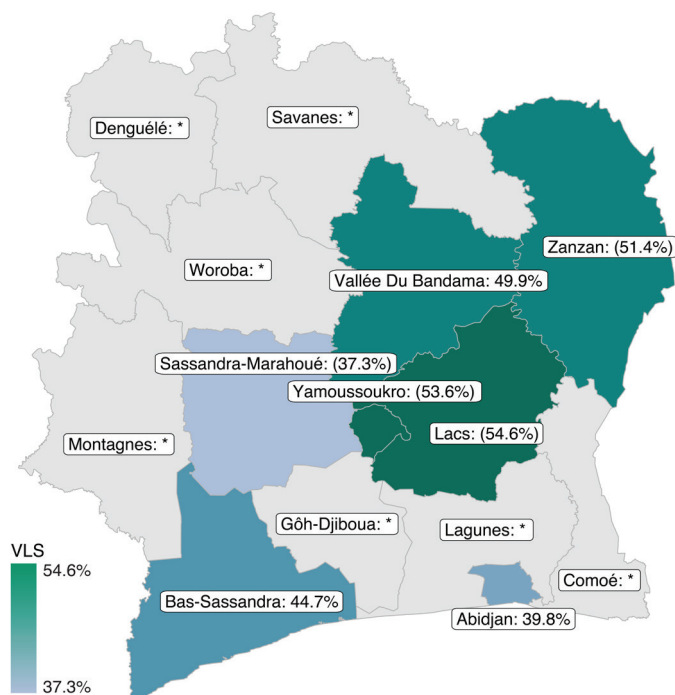


Error bars represent 95% confidence intervals, which indicate the interval within which the true population parameter is expected to fall 95% of the time.

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

Among HIV-positive adults (those aged 15-64 years), prevalence of VLS ranged from 37.3% in Sassandra-Marahoué to 54.6% in Lacs. Note: these estimates were based on a small number of observations (with a denominator between 25-49) and should be interpreted with caution. Also, note that VLS prevalence could not be estimated reliably in some regions where there were even fewer observations.

Region	VLS Prevalence (%)	95% CI
Abidjan	39.8	24.5-55.1
Yamoussoukro	(53.6)	36.6-70.5
Bas-Sassandra	44.7	26.9-62.5
Comoé	*	
Denguélé	*	
Gôh-Djiboua	*	
Lacs	(54.6)	36.3-73.0
Lagunes	*	
Montagnes	*	
Sassandra-Marahoué	(37.3)	10.3-64.3
Savanes	*	
Vallée Du Bandama	49.9	33.0-66.9
Woroban	*	
Zanzan	(51.4)	34.5-68.2



\* Estimates based on a very small denominator (less than 25) have been suppressed with an asterisk.  
 ( ) Estimates based on a denominator of 25-49 are included in parentheses and should be interpreted with caution.  
 Viral load suppression is among only those people living with HIV-1.

## 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

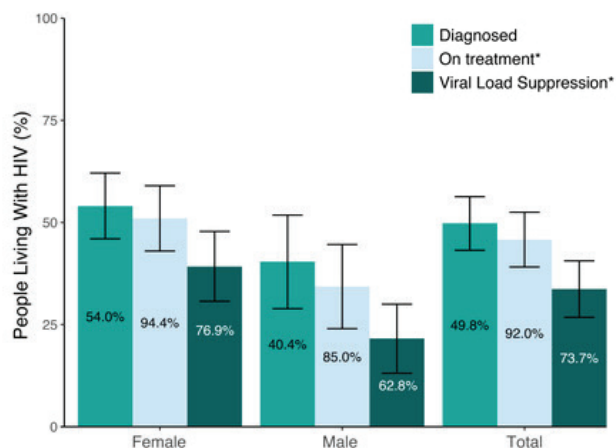
The Joint United Nations Programme on HIV/AIDS (UNAIDS) and HIV-affected countries have set the 90-90-90 targets with the aim that by 2020, 90% of all people living with HIV will know their HIV status; 90% of all people with diagnosed HIV infection will receive sustained ART; and 90% of all people receiving ART will have VLS.

#### Diagnosed

In Côte d'Ivoire, 49.8% of HIV-positive adults (those aged 15-64 years) were aware of their HIV-positive status (based upon self-report or the detection of ARVs): 54.0% of HIV-positive women and 40.4% of HIV-positive men.

#### On Treatment

Among adults living with HIV who were aware of their status (diagnosed), 92.0% were on ART (based upon self-report or the detection of ARVs): 94.4% of HIV-positive women and 85.0% of HIV-positive men.



#### Viral Load Suppression

Among adults who were currently on ART (based upon self-report or the detection of ARVs), 73.7% have achieved VLS: 76.9% of HIV-positive women and 62.8% of HIV-positive men.

Inset numbers are conditional proportions. The height of the bars represent population-level coverage of each indicator, among all people living with HIV-1. See text above. Error bars represent 95% confidence intervals, which indicate the interval within which the true population parameter is expected to fall 95% of the time. 90-90-90 estimates were only among those people living with HIV-1.

## CONCLUSIONS

- Côte d'Ivoire's progress towards the 90-90-90 targets for adults (those aged 15-64 years) was most pronounced among those who are aware of their status; exceeding the 90% target for those on treatment indicates progress in scaling up ART among known positives. However, there was substantial room for improvement in diagnosis. Half of adults living with HIV were unaware of their status, and only about 4 out of 10 men knew they were living with HIV.
- Men were less likely to know their HIV status, less likely to be on treatment, and less likely to have achieved viral load suppression than women.

## RESPONSE RATES AND HIV TESTING METHODS

Of 10,510 eligible households, 85.2% completed a household interview. Of 10,913 eligible women and 10,399 eligible adults, 81.8% of women and 85.5% of men were interviewed and tested for HIV.

HIV prevalence testing was conducted in each household using a serological rapid diagnostic testing algorithm based on Côte d'Ivoire's national guidelines, with laboratory confirmation of seropositive samples using a BioRad Geenius™ HIV 1/2 Supplemental Assay. A laboratory-based incidence testing algorithm (HIV-1 limiting antigen 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 WHO Incidence Working Group and Consortium for Evaluation and Performance of Incidence Assays, with a mean duration of recent infection=130 days (95% CI 118-142), time cutoff=1.0 year and residual proportion false recent=0.00. Survey weights are utilized for all estimates.

**The PHIA Project is a multicountry 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, 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.



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