

# PHIA SURVEYS: A NEW APPROACH TO HELP COUNTRIES CONTROL THEIR HIV EPIDEMICS

## OVERVIEW

Global targets for HIV epidemic control call for finding and diagnosing more people living with HIV, and ensuring that these individuals receive sustained treatment to become virally suppressed – which reduces HIV transmission and saves lives. Modeled estimates show that new HIV infections would dramatically decline if 73 percent of all people living with HIV are virally suppressed by 2020.

Since 2000, population-based household surveys have been an important surveillance tool to measure HIV prevalence – the total number of people living with HIV. However, household surveys typically do not provide direct estimates of either HIV viral load – the amount of the virus in a person’s body – which is necessary to measure progress toward the global targets, or HIV incidence – the number of new HIV infections – which helps assess the impact of HIV prevention and treatment programs.

The U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) is prioritizing population-based, HIV-focused household surveys as a means of directly measuring progress toward HIV epidemic control. The goal of the Population-based HIV Impact Assessments (PHIA) is to provide a better understanding of HIV trends at the national and regional level, as well as population-wide program achievements. PHIA surveys will be used to collect data on the uptake of care and treatment services for HIV and other infectious diseases, provide real-time home-based HIV counseling and testing, and estimate HIV incidence, CD4 T-cell counts (a measure of immune health), and viral load. For this reason, PHIA surveys will serve as the most comprehensive evaluation of HIV outcomes and impact that can be used by all stakeholders, including national HIV programs, PEPFAR, the Global Fund, and other donors and multilateral organizations, such as the World Health Organization (WHO) and UNAIDS. Preliminary PHIA survey results from Zimbabwe, Malawi, Zambia, Swaziland, Uganda and Lesotho have already been released. PHIA results are expected to be reported from Tanzania in the coming months. Other PHIA surveys are slated to be conducted in several additional countries.

## PHIA Objectives

1. Measure progress in achieving epidemic control by assessing the impact of national HIV programs, including confidential HIV testing and counseling, prevention of mother-to-child transmission, and care and treatment; measure the impact of programs addressing sexually transmitted infections, tuberculosis, and other opportunistic infections
2. Help evaluate public health programs to improve and better target interventions related to the prevention, care, and treatment of HIV and AIDS, along with TB and other opportunistic infections
3. Strengthen the capacity of countries to collect and use surveillance data for the management of national HIV programs and provide laboratory support for surveillance, diagnosis, treatment, and disease monitoring

Workers conducting PHIA surveys will gather electronic data and transmit it to a central server location; collect blood for CD4 counts and viral load testing; conduct point-of-care HIV and CD4 tests; return the results; and refer newly diagnosed people to care.

The survey will assess key PEPFAR program indicators at a national (and regional for some indicators) level, focusing on the HIV care continuum.

- **HIV prevalence** – The proportion and number of adults and children infected with HIV at the national and regional level
- **HIV incidence** – The proportion and number of new HIV infections among adults nationally, using dried blood spots
- **Knowledge of HIV status** – The percentage of HIV-infected people who know their HIV status. Self-reported HIV status is measured through survey questions, and actual HIV status is confirmed by diagnostic HIV testing at the time of the survey.
- **Continuum of care** – Uptake of HIV services among people with HIV. Includes people who have reported testing positive for HIV, receiving pre-treatment care, and continuing treatment.

## CDC'S ROLE

Working with Ministries of Health, other U.S. government agencies and ICAP at Columbia University, CDC is lending expertise in epidemiology, laboratory science and data analysis to help partners design and implement Population-based HIV Impact Assessments and rapidly harness the results for program improvement in countries supported by PEPFAR.

- **Population-level viral load** – Viral load among people living with HIV at the national and regional levels, including proportion of people with HIV – overall and specifically those on treatment – who have a suppressed viral load (e.g., <1,000 copies/ml).
- **Prevention of mother-to-child HIV transmission** – Percentage of pregnant women who have been tested for HIV and the percentage of HIV-positive pregnant women who received antiretroviral treatment to prevent passing the virus on to their child
- **Male circumcision program coverage** – Percentage of men and boys who underwent voluntary medical circumcision to prevent HIV

## ACCOMPLISHMENTS / RESULTS

In August 2016, PHIA surveys were completed in Zimbabwe (ZIMPHIA), Malawi (MPHIA), and Zambia (ZAMPHIA). Over 70,000 adults were surveyed, and nearly 81,000 blood samples were collected from adults and children. Key findings on HIV incidence, prevalence, and viral load suppression were released on World AIDS Day (December 1, 2016). Final reports for ZIMPHIA, MPHIA, and ZAMPHIA will be available in late 2017. Preliminary survey results from Swaziland (SHIMS2) were released at the 9<sup>th</sup> International AIDS Society Conference on HIV Science in July 2017. Final results for the SHIMS2 are anticipated in early 2018. Uganda (UPHIA) and Lesotho (LePHIA) released their preliminary survey results during the 72<sup>nd</sup> session of the United Nations General Assembly in September 2017. A total of six countries have released their PHIA results, each highlighting strong progress towards HIV epidemic control. The data collected will be owned and used primarily by the respective national governments. Final anonymous household, individual, and biomarker datasets will be made available to the public on a secure website. Seven additional countries will complete PHIA surveys on a rolling basis between 2017-2019, providing an ability to chart and validate their respective progress toward reaching epidemic control.

## FUTURE EFFORTS

PHIA surveys are national surveys that are implemented under the leadership of each country's Ministry of Health, and by PEPFAR, CDC, and ICAP at Columbia University. PHIA surveys are generally conducted on a 3-5 year cycle. Strengthening HIV surveillance systems, including case-based surveillance, will provide routine data to monitor program coverage and viral load suppression among people diagnosed with HIV. PHIA surveys are limited in their ability to monitor progress toward global targets among some key populations (e.g., female sex workers, men who have sex with men, prisoners, young women and girls), and people living outside of a household (e.g., military populations and university students). Alternative surveillance strategies are needed for these populations.

## BENEFITS OF OUR WORK

The PHIA surveys show that global efforts are helping to curb the HIV epidemic and save lives. The information shines a light on specific populations and geographic areas that remain unreached and require urgent attention and services. PHIA results also help inform future programs to confront the global epidemic, and focus country efforts and resources for maximum impact and efficiency. The methods developed for the PHIA surveys can be used in other countries as they conduct HIV-focused household surveys. PHIA survey findings have already helped Malawi, Zambia, and Zimbabwe focus resources on urgent program priorities. These results show that CDC, through PEPFAR, and global partners are helping to change the course of the epidemic, and are contributing to the long-term stability of other nations, which makes the world a safer place for us all.