

UNAIDS Reference Group on Estimates, Modelling, and Projections Meeting on HIV incidence in sub-Saharan Africa

Friday, 10th May 2024

14.00-17.00 South African Standard Time

Virtual on Microsoft Teams: [Join the meeting](#)

Background

The UNAIDS HIV epidemiological estimates describe the scale and historic trends of HIV epidemics in countries around the world at sub-national, national, regional, and global levels. The estimates are produced using mathematical models developed with guidance from the UNAIDS Reference Group on Estimates, Modelling, and Projections (Reference Group; <https://www.epidem.org/>).

Accurately understanding HIV incidence and ensuring that model estimates and projections are consistent with data and evidence is critical for planning national and global HIV response, including understanding the impact of programmes, the programmes' need to be sustained and expanded, and where and among whom new strategies are needed to achieve and sustain long-term HIV epidemic control.

HIV incidence is empirically measured in a variety of surveys and research studies, including recent national household surveys, population observational cohort studies, HIV prevention intervention studies and trials. While these studies (except national household surveys) are not directly incorporated into national modelled estimates because they are measured in specific subnational locations and groups with selected characteristics, they provide critical information about incidence patterns to triangulate, validate, and guide assumptions of modelled estimates.

The UNAIDS Reference Group convened this meeting to review data on empirical incidence estimates in sub-Saharan Africa and to compare empirical observations to modelled estimates at the level of geographic and demographics stratification at which they were measured. The aims of the meeting are to assess confidence in model-estimated incidence levels and trends, and to identify priority areas for further research and methodological development.

The **objectives** of the meeting are:

- 1) Are recent HIV incidence estimates derived through mathematical models consistent with empirical HIV incidence measurements, in **levels** and **trends**?
- 2) Are there systematic differences in incidence level and age distribution by study type and population among empirical incidence measurements (e.g. population survey, cohort study, prevention trial)?
- 3) Do empirical incidence data indicate systematic differences or changes over time in the **age distribution of new infections** compared to modelled estimates?

- 4) Identify any priority research, revisions to assumptions, or methodological development for models used to estimate national HIV incidence trends.

The recommendations from this meeting will be summarized in a brief meeting report published on the UNAIDS Reference Group [website](#) and inform further model development in the UNAIDS Reference Group work plan.

The **meeting agenda** is:

Time (SAST)	Title	Presenters
Chair: Prof Lloyd Mulenga		
14.00-14.15	Introduction and meeting objectives	Cari van Schalkwyk Mary Mahy Mike Reid
14.15-14.35	Description of data and methods to quantify incidence trends in national HIV estimates	John Stover Jessica Justman Drew Voetsch
14.35-14.55	HIV incidence data from clinical trials	Jirair Ratevosian
14.55-15.15	HIV incidence from population cohort studies	Elphas Okango Victor Ssempijja Daniel Kwaro
15.15-15.35	Updated systematic review of HIV incidence trends in sub-Saharan Africa	Kate Grabowski
15.35-15.40	Stretch break	
15.40-16.00	Triangulation of empirical HIV incidence with modelled estimates	Oliver Stevens
Chair: Dr Wilford Kirungi		
16.00-17.00	Discussion	

Short biographies for the session chairs and presenters follow:

- **Prof Lloyd Mulenga** is the Director of Infectious Diseases in the Zambian Ministry of Health and ID Division Chief of the University Teaching Hospital where he practices. He has several years of experience managing the national HIV program and sits on several HIV/ID related international and local technical bodies.
- **Dr Wilford Kirungi** is a Principal Medical Epidemiologist in Uganda's Ministry where he heads HIV strategic information. He has worked for over 20 years in HIV programme planning, surveillance, monitoring and evaluation, population surveys, mathematical modelling and other strategic information. He has been involved in ground-breaking studies and analyses that have informed strategic planning for HIV programmes in Uganda.

- **Dr Mike Reid** currently serves as the Chief Science Officer for PEPFAR in the Bureau of Global Health Security and Diplomacy in the US State Department. He also serves as Associate Director of the Center for Global Health Diplomacy, Delivery and Economics. He is an HIV clinician and sees patients at San Francisco General Hospital.
- **Dr Mary Mahy** is the UNAIDS Director for the Data for Impact Practice, leading the collection and analysis of the world's most comprehensive collection of data on HIV. Among her contributions to the field of HIV has been advancing the methods, accessibility, and use of HIV related modeling to build global and country knowledge. **John Stover** is Vice President and founder of Avenir Health and has over 30 years of experience in assessing population and health issues in developing countries and in providing technical assistance in policy analysis and awareness-raising through computer modeling. He has developed several important population and health policy tools including Spectrum, a modular software package that is used to examine the consequences of current trends and future interventions in reproductive health and HIV.
- **Prof Jessica Justman** is an infectious disease specialist and epidemiologist and has worked for over two decades to advance HIV prevention, care, and treatment and, more recently, to pioneer a precision approach to understanding the global HIV epidemic. She spearheaded the CDC-funded Population-based HIV Impact Assessment (PHIA) Project.
- **Dr Drew Voetsch** is an epidemiologist and Team Lead for the General Population Surveillance Team in the Division of Global HIV & TB at the U.S. Centers for Disease Control and Prevention (CDC). The team is responsible for the Population-based HIV Impact Assessments (PHIA), which are large HIV-focused household surveys designed to measure HIV incidence, prevalence, and treatment outcomes in 19 PEPFAR countries.
- **Dr Jirair Ratevosian** is a public health advocate and policy analyst. He is currently Associate Research Scientist at Yale University and Hock Fellow at Duke Global Health Institute. He was formerly at US PEPFAR and worked for US Congresswoman Barbara Lee.
- **Elphas Okango** is a Research fellow at AHRI and a visiting faculty at Stellenbosch University. His background is in Statistics, Machine Learning and Artificial Intelligence. He is currently working on the novel Mobility data and the Changing face of HIV grants, to decipher the changing dynamics of HIV.
- **Victor Ssempijja** is a Biostatistician and methods epidemiologist with 20 years of experience in conducting clinical trials for efficacy, population-based cohort, and surveillance studies of HIV/infectious disease prevention and transmission dynamics. Currently, he is researching the acceleration of HIV epidemic control through optimizing the use of antiretroviral therapies (ART) for HIV prevention and treatment.
- **Dr Daniel Kwaro** is a medical epidemiologist at the Kenya Medical Research Institute. For 15 years, he has devoted his career to advancing HIV implementation science. With a keen eye on global health challenges, he's broadening his research horizons into the emerging field of planetary health, aiming to address interconnected human and environmental health issues.
- **Dr Kate Grabowski** is an Associate Professor in the Departments of Pathology and Epidemiology at the Johns Hopkins University. She is also a senior epidemiologist

with the Rakai Health Sciences Program in Uganda. Her research is focused on population surveillance for HIV and other sexually transmitted infections in African contexts.

- **Oliver Stevens** is a Technical Analyst at the MRC Centre for Global Infectious Disease Analysis, Imperial College London. His primary research interests are key populations in sub-Saharan Africa and the HIV epidemic in Mozambique.