

Uganda's Journey to Laboratory Leadership Excellence

Building a Sustainable Laboratory Future

The Uganda Public Health Fellowship Program—Laboratory Leadership Program (PHFP-LLP) is driving transformative change in Uganda's health system through the efforts of fellows like Leah Naluwagga Baliruno. She spearheaded a project to improve sample receipt turnaround time (TAT), achieving measurable efficiency gains. Reflecting on her journey, Naluwagga Baliruno shared, "I struggled a lot at the beginning of the program and didn't know the continuous quality improvement (CQI) principles." With support from her mentor and instructors, Naluwagga Baliruno evaluated specimen TAT in one region at the Uganda National Laboratory, uncovering bottlenecks such as delays in handing off samples to motorcycle couriers. Realizing the broader implications, she extended her analysis countrywide, uncovering additional bottlenecks in the system. Armed with CQI principles and data-driven insights, Naluwagga Baliruno implemented solutions that improved TAT efficiency and the metrics she used are now embedded into national processes—an enduring impact of her fellowship.

Building on this success, Naluwagga Baliruno tackled another critical issue: staffing shortages in district-level laboratories. Utilizing the [Workload Indicators for Staffing Needs tool](#), complemented by key informant interviews, she assessed staffing gaps in the Lango region, identifying significant discrepancies between workloads and personnel availability. Her findings have sparked immediate interest among district-level partners. Naluwagga Baliruno is now preparing to present her findings at the national level, where they are expected to influence policy discussions and drive systemic improvements in laboratory staffing across the country.



LLP Cohort 1 fellows during a tour at the National Public Health Emergency Operations Centre, May 2023.

Collaboration Driving Laboratory Leadership and Public Health Impact

Launched under the Ministry of Health (MoH)'s Uganda National Institute of Public Health (UNIPH) in 2023, PHFP-LLP is a two-year program—part of a multi-year initiative to strengthen laboratory leadership to address human and animal health emergencies. Operating in tandem with the Public Health Field Epidemiology Training Program (PHFP-Epi) and supported by the [US Centers for Disease Control and Prevention \(CDC\)](#), the [Association of Public Health Laboratories \(APHL\)](#) and other partners, the LLP emphasizes sustainability by embedding the program within national training structures. The program's collaborative approach has fostered stronger ties between laboratory and epidemiology professionals through joint training sessions and coordinated outbreak responses, reducing testing turnaround times and enhancing public health preparedness.

APHL, a key partner since 2022, has fostered partnerships to build a sustainable program framework, adapted the [Global Laboratory Leadership Program](#) curriculum to Uganda's context and supported the training of instructors, mentors and fellows, while also refining fellows' capstone projects and facilitating the sharing



Representatives from APHL, Uganda MoH, Makerere University School of Public Health and other LLP partners attend the launch of the Uganda LLP, July 2023.

of lessons learned globally through workshops and publications. “APHL and CDC provided crucial technical assistance, including best practices and lessons learned from other countries, which enriched our planning and implementation processes and ensured alignment with international laboratory standards and quality management systems,” said Dr. Alex Riolexus Ario, UNIPH director and PHFP-LLP program director. “APHL has been pivotal in nurturing the program to maturity by providing strategic guidance and facilitating knowledge transfer,” added Thomas Nsibambi, US CDC laboratory team lead.

Expanding Impact and Global Leadership

The LLP’s first cohort completed a transformative journey, honing leadership skills and developing capstone projects to address critical public health challenges. “One fellow I mentored led a team investigating an outbreak, demonstrating remarkable growth in team building and collaboration by coordinating efforts across district teams, political leaders and scientists,” shared Charles Munafu, an LLP mentor. The program’s impact extended beyond the fellows, with instructors and mentors also benefiting significantly. “As an instructor, I’ve experienced considerable professional growth, particularly in leadership development and technical expertise in biosafety and biosecurity,” noted Joseph Nkodyo. “The cross-disciplinary engagements have deepened my understanding of the broader public health landscape, enriching my ability to guide fellows effectively.”

With the inaugural cohort’s projects completed in 2024, the program is expanding its reach. The second cohort has begun working on their capstone projects, and the training for the third cohort is already underway—further building on the solid foundation established by the program’s successes. As the LLP grows, its achievements are gaining international recognition. To share its successes and inspire similar initiatives globally, Dr. Riolexus Ario and Samuel Gidudu, the PHFP-LLP program coordinator, supported a well-received workshop at the 2024 Global Health Security Conference.

Sustainability at the Core

Uganda’s LLP stands as a model of sustainability in public health by prioritizing local ownership, aligning with national priorities, building a strong technical foundation and mobilizing resources effectively. Through mentorship and career development, LLP fellows are addressing immediate challenges while laying the groundwork for lasting systemic improvements.

As the program continues to grow, the MoH and its partners are working to secure long-term, system-backed funding to strengthen laboratory systems—making them more resilient and better equipped to address evolving public health challenges. “This financial year, the MoH recognized the UNIPH as a priority area and, since LLP is part of the UNIPH, it gives us hope and opportunity for sustainability,” shared Gidudu. Supporting this vision, CDC Laboratory Liaison Officer, Gloria Bahizi, noted that, “APHL and CDC have established relationships with global health partners, positioning the program for sustained funding and collaboration opportunities.”

With its emphasis on collaboration, sustainability and capacity building, Uganda’s LLP is transforming laboratory systems today while laying the groundwork for a healthier and more resilient future, ensuring the country is prepared to meet both current and emerging public health challenges with confidence and capability.



LLP staff (on either end) and Cohort 1 fellows (from left: fourth and sixth) pose for a group photo with the Ugandan Commissioner—Laboratory Services (second from right) and her staff after conducting a host site visit at the Uganda National Health Laboratory and Diagnostic Service, December 2024.