THE GLOBAL FUND

Thematic Snapshot

Project STELLAR

The peer-to-peer initiative to facilitate knowledge sharing

Introduction to Project STELLAR

Project STELLAR was launched in November 2021 to provide emergency assistance to African countries to increase diagnostics capacity during the COVID-19 pandemic.

Participating African countries were selected based on identified bottlenecks in reaching WHO testing targets for the new pandemic, with C19RM investments providing support to address these bottlenecks.

As the COVID-19 pandemic shifted in 2022, Project STELLAR reoriented its resources away from COVID-19 specific interventions, to address broader needs for integrated laboratory systems strengthening.

Mentor from Uganda National Health Laboratory and Diagnostics Services (UNHLDS) (first on the left) with mentees from Guinea and Togo in a practical session during the EQA framework peer-learning cohort.

Focus of investments

Technical assistance (TA) from Project STELLAR focused on four key domains to drive capacity building efforts that reflected the specific country context, and ensure synergies across Global Fund funding streams (C19RM and GC7)[1], to drive improvements in:

- Labs policy and governance.
- Integration, cost-efficiencies and value for money of diagnostic services delivery for infectious diseases.
- Strengthening data management systems for clinical diagnostics and surveillance.
- Pilot projects to explore the feasibility of Wastewater Environmental Surveillance (WES) for respiratory pathogens.

Achievements

Enhanced the engagement between Global Fund Country Teams, advisors, and leaders of the laboratory sector in the supported countries.

Developed workplans and maintain ongoing discussions during monitoring and evaluation to improve the visibility of decision-making processes related to laboratory system investments.

Deepened the understanding of how Laboratory Directorates interact with other entities within Ministries of Health that influence the governance of diagnostic networks.

Establishing capacity for multi-pathogen wastewater environmental surveillance (WES) and bioinformatics enabling robust response to health threats.

1 COVID-19 Response Mechanism and Grant Cycle 7

Peer-to-peer Learning

In 2024, STELLAR expanded its scope to include peer-to-peer learning, a model of sustainable knowledge transfer that institutionalizes proven best practices and innovative solutions among countries in the region.

The initiative helps participating countries learn from the experiences of peers who have successfully implemented innovative diagnostic and laboratory systems. The hosting countries—Uganda, Zimbabwe, Rwanda and South Africa—led these learning cohorts, each focusing on specific areas of expertise.

The initiative is designed to institutionalize best practices, allowing participating countries to adapt successful models to their own contexts. It also emphasizes sustainability by fostering long-term collaboration and networking among participating countries.

The peer-to-peer initiative represents a critical step in enhancing diagnostic capacity and resilience in Africa. By enabling cross-country learning, Project STELLAR ensures that the benefits of innovation and expertise are shared widely, contributing to stronger health systems across the region.

Each host country offers specialized training and exchange opportunities for the 'mentee' countries, on specialized thematic topics, according to their area of expertise, including:

- **Integrated Specimen Transport Systems**
- **Laboratory Information Systems**
- **Production of Proficiency Testing (PT) panels and equipment management systems**
- **Wastewater Environmental Surveillance**

Case Studies of Host Countries

Zimbabwe

Zimbabwe introduced a comprehensive Integrated Specimen Transport (IST) network to overcome delays in specimen transport from health facilities to testing laboratories. Implementation of the IST network is led by the Ministry of Health, through the Biomedical Research and Training Institute (BRTI) and financed by the Global Fund, with UNDP as Principal Recipient.

The network, developed with a multistakeholder approach, includes training for safe handling, packaging and transportation of specimens by riders and drivers. The IST network accounts:

- 340 transportation clusters for local and regional sample collection points.
- 280 motorbikes and eight provincial vehicles dedicated to transporting specimens.
- Defined optimal routes for all riders and drivers to ensure efficient, safe and timely delivery of samples.

The system was initially tested with TB samples and later expanded to include diagnostics for other programs such as HIV, malaria, clinical labs and surveillance. It has significantly reduced delays, sample rejection and improving turnaround times for laboratory results.

Zimbabwe hosted two cohorts in 2024: the first for Ghana, Kenya, Nigeria and Sierra Leone, and the second for Angola, Madagascar and Togo.

Highlights from a cohort hosted by Zimbabwe, where mentee countries were introduced to the Integrated Specimen Transport (IST) framework and given a tour at one of its collection points.

Rwanda

Rwanda has made significant strides in integrating laboratory information systems, focusing on data interoperability across health care institutions. Key achievements include:

- Development of communication protocols enabling real-time data sharing between laboratories and healthcare providers.
- Introduction of emerging technologies such as drones for transporting medical samples, especially in remote and rural areas, reducing transport times by up to 50%.
- Analysis of data tools and interoperability standards, addressing the limitations of existing systems and identifying areas for improvement.

Rwanda hosted two cohorts in 2024 with the first session hosting Ghana, Guinea and Togo and the second session Benin, Chad, Niger and Madagascar.

These sessions highlighted Rwanda's strategies for using data integration to enhance diagnostic capacity and streamline laboratory operations.

Second cohort of peer-to-peer learning between Rwanda, Tchad, Benin, Madagascar and Niger on the Rwanda Health Information Exchange System's (RHIES) architecture, its achievements and how it supports data exchange between laboratory information systems and electronic medical record (EMR) from health facilities.

Uganda

Uganda has prioritized (i) laboratory equipment maintenance and calibration and (ii) production of proficiency testing (PT) panels. Key achievements include:

- The ISO 17043 certification covering more than 16 PT schemes. The Uganda National Health Laboratory and Diagnostics services is providing PT panels for more than 21 countries.
- Developing capacity for malaria RDT PT panel production.
- The establishment of the National Equipment Calibration Center (NEC), which streamlines equipment procurement, operation, and maintenance, significantly reducing reliance on outsourced services and cutting costs by approximately 30%. The NEC supports both national and regional needs by offering comprehensive laboratory equipment maintenance, repair, calibration, and certification services for a broad range of instruments. Additionally, the center has set equipment management guidelines and actively contributes to capacity building through training, mentorship, and collaborative partnerships with higher education institutions.

In 2024, Uganda hosted:

Three peer-to-peer learning on the malaria RDT PT panel production each accommodating four to five countries including Democratic Republic of Congo, Ethiopia, Guinea, Kenya, Sierra Leone, South Sudan, Tanzania, Togo, Zambia and Zimbabwe.

Two cohorts focusing on equipment maintenance and calibration including participation from Cameroon, Liberia, Mali, Mozambique, Nigeria, South Sudan, Tanzania and Zambia.

Mentees from Guinea and Togo participating in a practical session during the external quality assessment (EQA) framework peer-learning cohort hosted by Uganda.

Field visit to Kayunga Regional Referral Hospital with mentees from Guinea and Togo during the EQA framework peer-learning cohort hosted by Uganda.

South Africa

South Africa has been a pioneer in Wastewater Environmental Surveillance, using its expertise from polio surveillance to develop systems for monitoring SARS-CoV-2 and other pathogens. Key features of its program include:

- Surveillance coverage across 95 wastewater treatment plants.
- Collaboration with seven laboratories equipped to handle pathogen detection and analysis.
- Expansion plans to include surveillance for vaccine-preventable diseases and antimicrobial resistance (AMR).

South Africa will host a cohort in 2025 to mentee countries including Nigeria, The Gambia and Ghana.

The focus will be on building wastewater environmental surveillance networks and bioinformatics with an emphasis on expanding infrastructure, equipment and training to scale up the model across the region.

Looking ahead

Through their training sessions, hosting countries have shared proven methodologies, best practices, and lessons learned, empowering other nations to adapt and implement similar models in their contexts.

Feedback from participants highlighted their appreciation and strong desire to sustain the collaboration between African countries. Mentees also praised the commitment of hosting countries and the opportunity for practical trainings and end-to-end experience on specific processes.

Participants explained how the peer-to-peer learning sessions demonstrated the great potential of existing systems and tools in their countries, and how to optimize them.

These efforts ensure that Project STELLAR's impact grows to be both influential and sustainable across Africa.

Project STELLAR is set to contribute significantly to the health security and diagnostic capacity of African nations, leaving a legacy of strengthened health systems and enhanced regional cooperation.

Mentees from Chad, Benin, Madagascar and Niger looking at the systems in real-time and completing practical examples of laboratory information systems and interoperability during the peer-to-peer learning cohort hosted by Rwanda.

Malaria RDT panel production by staff from the Churches Health Association of Zambia (CHAZ) and the National Malaria Elimination Centre (NMEC, Zambia's Ministry of Health), implementing best practices learned from peer-to-peer sessions.

About the Global Fund

The Global Fund is a worldwide partnership to defeat HIV, TB and malaria and ensure a healthier, safer, more equitable future for all. We raise and invest more than US$5 billion a year to fight the deadliest infectious diseases, challenge the injustice that fuels them, and strengthen health systems and pandemic preparedness in more than 100 of the hardest hit countries. We unite world leaders, communities, civil society, health workers and the private sector to find solutions that have the most impact, and we take them to scale worldwide. Since 2002, the Global Fund partnership has saved 65 million lives.