

**Supporting HIV-Related Laboratory Networks and Partnerships to Facilitate
Laboratory Strengthening and Management Activities for Countries
Supported under PEPFAR**



Acronyms

AFENET	African Field Epidemiology Network
ART	Anti-retroviral therapy
CD4	Cluster of Differentiation 4
CDC	United States Centers for Disease Control and Prevention



CQI	Continuous Quality Improvement
CONABIOS	Consejos Nacional de Bioética en Salud
DATIM	Data for Accountability, Transparency and Impact Monitoring (PEPFAR)
DBS	Dry Blood Spot
DH	District Hospital
DNA	Deoxyribose Nucleic Acid
DTS	Dried Tube Specimen
ECHO	Extension of Community Health Outcomes
EID	Early Infant Diagnosis
EQA	External Quality Assessment
EQAS	External Quality Assessment Scheme
HEID	Health Center IV
HIV	Human Immunodeficiency Virus
HIV-RT	HIV Rapid testing for HIV
MoH	Ministry of Health
NHRL	National HIV Reference Laboratory
PEPFAR	US President's Emergency Plan for AIDS Relief
PEEC	Programa de Evaluación Externo de la Calidad
PMTCT	Prevention of Mother To Child Transmission
PT	Proficiency Testing
QMS	Quality Management System
RTCQI	HIV Rapid Test Continuous Quality Improvement
SLMTA	Strengthening Laboratory Management Toward Accreditation
SLIPTA	Stepwise Laboratory (Quality) Improvement Process Towards Accreditation
VL	HIV Viral Load
VLSM	Viral Load Sample Management System

The African Field Epidemiology Network (AFENET) as part her laboratory capacity development strategic objectives, with funding support from the United States Centers for Disease Control and Prevention (US CDC), supported HIV-Related Laboratory Networks and Partnerships in selected PEPFAR supported countries. The laboratory strengthening initiative was initiated to build up laboratory capacity and management capability for countries supported under PEPFAR cooperative agreement which included some African countries, Dominican Republic and other multi-country scopes of work in collaboration with the respective National Ministries of Health.

ANGOLA

AFENET implemented laboratory strengthening activities in 22 health facilities distributed across four Provinces (Benguela, Lunda-Sul, Huambo and Cunene). The main goal of these activities was to scale up HIV viral load testing. The activities included training on the viral load testing, creating a sample transport system and maximizing the use of the national HIV laboratory testing platforms. Mentorship support was provided to all the 22 health facilities to strengthen healthcare workforce capacity. Some of the areas of focus included



1. HIV Rapid testing (HIV RT) quality certification training curriculum

AFENET supported the implementation and rollout of Quality packages for Point of Care (POC) mPIMA and Xpert HIV MVL/EID testing in collaboration with the National Institute of the Fight Against AIDS (INLS). AFENET mentors also facilitated the training of 20 participants on HIV counseling and testing in Benguela who are now serving as trainers of trainers (ToTs).

2. Implementation of point of care (POC) HIV viral load testing and early infant diagnosis

Working with several partners, AFENET provided technical assistance in implementing POC GeneXpert for viral load testing, early infant diagnosis as well as TB testing at military sites. Prior to this, there were laboratory assessments and POC training for laboratory technicians from Luanda and Huambo. Similar support was also provided for Point of Care (POC) GeneXpert TB implementation in Benguela and Kwanza Sul, which included promoting several multi-partner meetings for activity discussion and review terms of reference for TB network organization

3. External Quality Assurance for Point of Care testing

In order to ensure the quality of HIV testing, and to comply with LAB_PTCQI indicator reporting on DATIM, AFENET implemented Proficiency Testing Schemes for POC testing for HIV-RT; VL/EID, and MTB/RIF tests in all 4 provinces. Under the HIV-RT EQA scheme, AFENET developed a Proficiency Testing (PT) program, which includes producing, distributing, and analyzing an annual panel of HIV-DTS samples. This program was developed in partnership with INIS and has now been fully transitioned to INLS for sustainability.

The HIV RT EQA program was implemented in 114 HIV RT testing sites including public, Military, and community sites supported by PEPFAR. The Proficiency results show that 109 sites responded, and 95 sites scored higher than 80%. Under HIV VL/EID-POC EQA in Q2, the new POC sites were enrolled for the 2022 SmartSpot program with an expected 1st cycle in April 2022. As for MTB/RIF in Q1, we conducted the 3rd cycle of the SmartSpot 2021 program 2021 at the PEPFAR-supported sites with Xpert machines. From 5 sites enrolled, 1 participated and 1 passed. The lack of participation was due to equipment breakdown and lack of maintenance. In Q2, the sites were enrolled for the 2022 EQA program provided by CDC Atlanta. AFENET technical assistance included procurement of EQA panels, distribution, training, and corrective actions to participating sites.

4. Laboratory Information System (LIS) implementation at VL/EID referral laboratories:

AFENET supported the implementation of the Apolo Laboratory Information system at the VL/EID referral laboratories: Molecular Biology Laboratory (LBM) in Luanda and Laboratório Regional de Virologia Molecular (LRVM) in Benguela. AFENET mainly provided technical assistance to MoH IT teams, installed internet links and IT equipment, and worked with the labs to develop the LIS map of indicators.

a) VL/EID dashboard development:

AFENET finalized the development of the HIV VL dashboard and plans are currently underway to have the dashboard integrated into the Apolo LIS systems at the reference laboratories.

b) Facility-level M&E tools for VL/EID

AFENET technical mentors also supported health facilities with the implementation of standardized laboratory logbooks and forms such as VL Laboratory logbook; EID Laboratory logbook; Sample transmittal forms; General QMS records.



AFENET supported the expansion of HIV VL/EID testing through the procurement of reagents, 10 mPIMA POC machines, reagents, and diagnostic network optimization.

TB Diagnostic Test Continuous Quality Improvement (CQI)

1. TB CLICQ!

AFENET in collaboration with CDC Atlanta, CDC Uganda and Uganda Ministry of Health launched the TB Clinic-Lab Interface Continuous Quality Improvement (CLICQ!) ECHO program in October 2021. This program guided healthcare workers and laboratory staff through review of their clinic-laboratory data and identified gaps within their patient cascade. A total of 12 TB testing sites were enrolled into the project and these were selected from Lango and Bunyoro regions. Technical support was provided through weekly ECHO virtual training sessions and technical mentors also supported facilities in implementation of site specific improvement projects through peer to peer mentorships.

2. LF LAM Quality Assurance Package development

AFENET has supported development of a Quality Assurance (QA) Package for the Lateral flow urine lipoarabinomannan (LF-LAM) testing that can be customized as needed and implemented by PEPFAR supported countries and other implementers. The QA package will support efforts to improve the utilization of LF-LAM testing for the diagnosis of active tuberculosis in people living with HIV by guiding the implementation of QA programs in PEPFAR-supported countries. This QA package is currently undergoing review and approval after which it will be published for adoption.

DOMINICAN REPUBLIC

AFENET with funding from CDC-Dominican Republic office supported several laboratory-strengthening initiatives in the Dominican Republic. These include assisting 74 accredited comprehensive HIV care centers in improving their service and quality indicators. Capacity build activities were also conducted for the laboratory staffs and the field auditors.

- 68,285 patients were initiated on HIV treatment with 83% of these patients having updated HIV Viral load test results.
- Out of the 68,285 patients enrolled, 43,019 patients were able to achieve HIV viral load suppression
- The Dr. Defilló National Public Health Laboratory (LNSPDD) and Gurabo Processing Center in Santiago received feedback from CDC regarding EQA panels provided in 2021 during this reporting period, LNSPDD scored 80% and Gurabo Processing Center scored 100% for all the five-panel samples that were tested
- 23 laboratory personnel from priority SAIs at the Dr. Defilló National Public Health Laboratory were trained on RTCQII and VIV VL checklist training was conducted for six field auditors from National Health Service (SNS)

AFENET provided technical assistance and support for the implementation of the HIV Recency Testing in 23 PEPFAR-supported sites, to enhance and guide HIV index testing activities.

- AFENET finalized, submitted, and received approval from National Council for Bioethics in Health (CONABIOS) for the HIV Recency testing protocol.
- 1,400 HIV Recency test kits were procured and distributed to priority sites for monitoring HIV recency testing at Municipal of Villa Altagracia, Juan Pablo Pina, San Lorenzo de Los Mina Maternal and Child Hospital, Antonio Musa and Our Lady of Altagracia Maternity



- Supported the development of data entry tools for HIV Recency testing using the Epi-Info platform, the tool is currently being implemented first in all PEPFAR-supported sites before it can be rolled out to all HIV testing sites that provide comprehensive care for people with HIV

Continuous Quality Improvement and eLearning initiatives

1. Strengthening Laboratory Management Towards Accreditation

Due to COVID-19 restrictions, SLMTA 3 (Illuminating the Path to ISO 15189) and Quality Control and Method Validation training curriculums were repurposed for online delivery. The SLMTA 3 curriculum was composed of four modules – QMS 1, QMS 2, QMS 3, and QMS4. Each module was further divided into sections and activities. The *on-line version* included an off-line/self-study component (lecture recordings and homework assignments) and an on-line/live component, as well as optional office hours and peer support discussion forum. The total time for completing the mandatory components of the on-line curriculum was 64 hours, as opposed to 86 hours of delivery time in the classroom-based version.

A total of 2 two cohorts (48 participants) from across the world have so far been trained during this e-learning initiative.

2. SLMTA Symposium

The SLMTA symposium was carried out virtually. The conference had a total of 668 participants in attendance from over 40 countries. The welcome address was by Mr. Nqobile Ndlovu, CEO African Society of Laboratory Medicine and the key note speech was Dr. Talkmore Maruta. The keynote speech reflected on the SMTA's contribution to the fight against the COVID pandemic. The conference was graced by the ministry of health officials from Angola, Zimbabwe, and Uganda who gave testimonies about the role that SLMTA played during the COVID-19 pandemic



3. HIV Rapid Testing Continuous Quality Improvement initiative

During this reporting period, AFENET supported the development of the RTCQII website and enhancement of SP-RTI tools, the addition of COVID 19 module, Recency module on the ePT page. The following achievements were realized

Type ofActivity	Description
Log book application Development	<ul style="list-style-type: none"> ● Developed new web-based application to help in collecting and aggregating HTS Logbook data ● Developed web form to allow users to enter data ● Added Excel upload functionality to help users add data in bulk ● Added support for Data to be received from ODK Central API ● User Management, Facilities Management etc. added to give more control to the administrator ● Added reports
SPI RT/SPI RRT Dashboard development and enhancement	<ul style="list-style-type: none"> ● Fixed map centering. Now admin can specify the center longitude/latitude in the configuration ● Few other minor issues were fixed across the application ● Menu changed to handle multiple versions of the form active at the same time. ● Added functionality to pull data from the ODK Central servers, which will soon replace ODK Aggregate servers ● Minor textual and visual changes done as per feedback

Strengthening capacity for COVID 19 response

Strengthening field epidemiology and laboratory capacity in the Dominican Republic

In the Dominican Republic, AFENET supervised COVID-19 epidemiological and laboratory surveillance activities in collaboration with the Dominican Republic, Ministry of Public Health, (DIGEPI). Priority was on strengthening the National Epidemiological Surveillance System and the Field Epidemiology Training Program (FETP).

- On 22 February 2022, AFENET supported the training of 20 public health professionals under the frontline FETP cohort 33. Of them were: 85% (17/20) female and 15% (3/20) male.
- 19 other public health staff were enrolled on February 28, 2022 in the nine months FETP Intermediate cohort: 58.8% (11/19) female and 42.2% (8/19) male, with a median age of 32 years (range: 30-56).

7 mini-grants for COVID-19 research awarded to the Dominican Republic

In February 2022, an announcement was made for mini-grants for COVID-19 research, 7 out of 21 applications from the Dominican Republic were awarded. The awardees were drawn from current FETP trainees and graduates, staff of the MoH or National Public Health Service and the university.

Projects selected to receive the mini-grants for COVID-19, Dominican Republic, 2022.

MINI-GRANT PROJECTS	
1.	Characterization of patients admitted with a diagnosis of COVID-19 to the Hospital Metropolitano de Santiago during the period of increased circulation of the Omicron variant
2.	Intention of the fathers to vaccinate their children against Covid-19
3.	Community-based communication strategy designed to favor the change in attitude and behavior with the vaccines of COVID-19
4.	Evaluation of neurological-neuropsychological alterations in patients diagnosed with COVID-19 in the short and medium term
5.	Evaluation of the Treatment Result of Patients with Tuberculosis and Covid-19 Coinfection in the Dominican Republic, 2020
6.	Maternal and neonatal consequences of the infection by COVID-19 acquired during the pregnancy, in the period May 2020-March 2022, in the province of Santiago
7.	Incidence of COVID-19 vaccine reaction in the teaching and administrative population of the educational district 18-02, Tamayo, Bahoruco province, 2021-2022

Building capacity in the Dominican Republic

AFENET recruited laboratory technicians for the cabral and bález laboratories in the province of santiago and hospital nuestra señora de la altagracia in the city of salvaleón de higüey.

More capacity was established with the setting up of 2 regional epidemiological surveillance units in the provinces of santiago and la altagracia, including 1 epidemiologist for each unit and the necessary supplies.