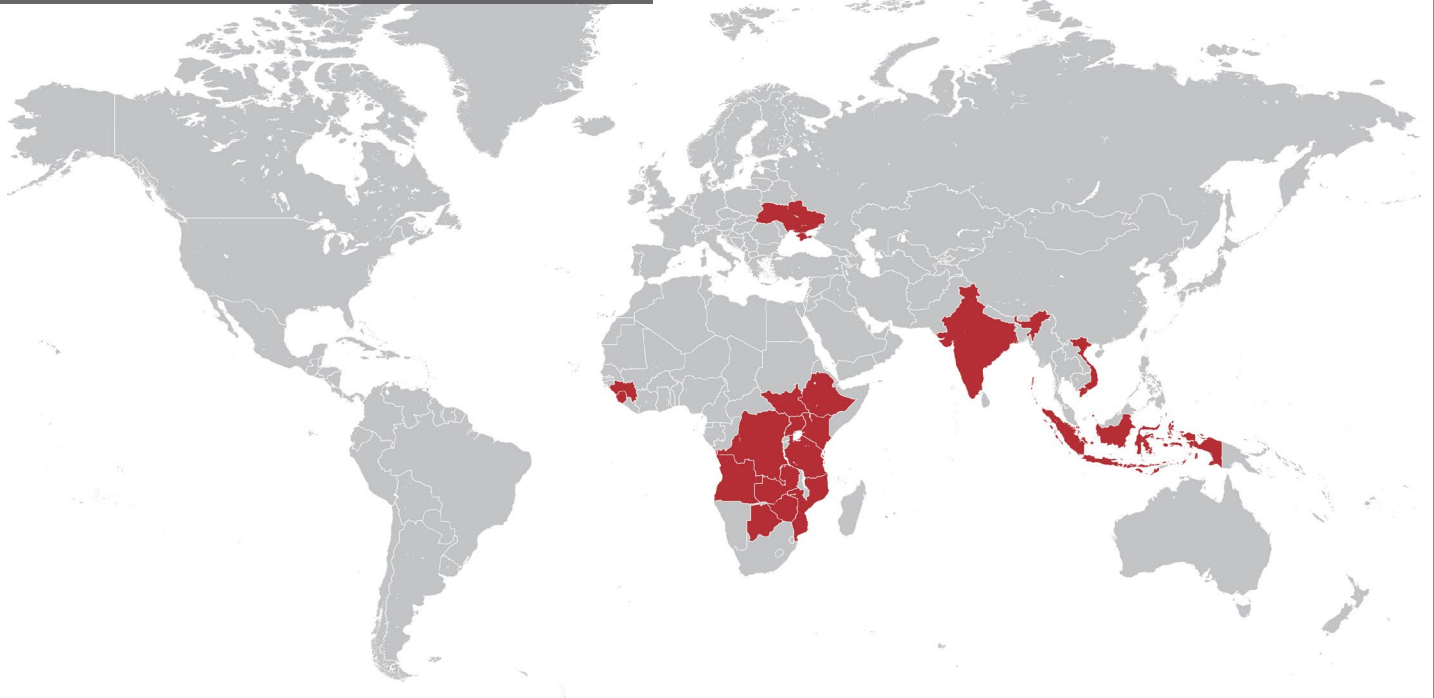




GLOBAL HEALTH COUNTRY UPDATE

ACTIVITIES THROUGH DECEMBER 2016

COUNTRIES INCLUDED IN THIS REPORT



The Association of Public Health Laboratories (APHL) is a nonprofit, nongovernmental organization with more than 800 members representing US state and local public health, agricultural and environmental labs, US federal agencies, health partners and interested individuals. For more than 20 years, APHL has also worked outside the US, collaborating with over 30 countries on five continents to increase global health security. Through close partnerships, strategic planning facilitation, training for laboratory leaders and bench staff, guidance documents and technical assistance, APHL works to strengthen laboratory-based disease surveillance, early outbreak detection and disease prevention.

Much of this critical work has been possible through funding from the US President's Emergency Plan for AIDS Relief (PEPFAR), which strives to control and reduce the spread of HIV, and the Global Health Security Agenda (GHSA), which aims to strengthen countries' capacity to prevent, detect and respond to infectious disease outbreaks.

This report covers APHL initiatives to support the goals of these cooperative agreements through December 2016.

ANGOLA

PEPFAR

APHL is collaborating with Angola's Ministry of Health (MOH) to strengthen national and local laboratories by improving rapid HIV testing, External Quality Assessment (EQA) proficiency, quality systems and accreditation efforts for the national laboratory system. Specifically, APHL is providing technical assistance with viral load testing and the EQA program, as well as mentorship and training on laboratory practices for MOH laboratory staff. The goal is to strengthen the national AIDS, tuberculosis and serology laboratories, as well as the nine smaller testing facilities located within Luanda's healthcare facilities.

BOTSWANA

PEPFAR

APHL will support the Botswana MOH and US Centers for Disease Control and Prevention's (CDC's) Botswana USA Project (BOTUSA) as they conduct a national HIV drug resistance study; APHL will provide on-site technical consultations and procure goods such as Plasma Preparation Tubes and viral load and genotyping reagents. In collaboration with BOTUSA and other partners, APHL will conduct two training sessions for nurses who will enroll study participants and collect samples.

DEMOCRATIC REPUBLIC OF THE CONGO (DRC)

PEPFAR

APHL is planning to conduct Strengthening Laboratory Management Towards Accreditation (SLMTA) training at six DRC MOH laboratories. This three-part workshop includes targeted mentorship for participants upon completion. External audits will be arranged with the African Society for Laboratory Medicine (ASLM) and support will continue for the training of a new group of laboratories selected by APHL and CDC DRC.

Beyond SLMTA, APHL is working with the labs to improve quality assurance in testing and practice. APHL will provide training in CD4, viral load testing and early infant

SLMTA

Strengthening Laboratory Management Towards Accreditation. These three-part training workshops for laboratorians focus on effective laboratory practices and management to improve overall quality. Targeted mentorship is provided to participants upon completion.

diagnosis and biosafety. In addition, APHL has finalized the curriculum for a train-the-trainer program in HIV rapid testing, which will launch later this year. Evaluation measures will include comparison of pre- and post-test results and the number of train-the-trainer participants who successfully pass competency tests.



Ethiopia: EPHI Bioengineers learn to take biosafety cabinet airflow measurements

ETHIOPIA

PEPFAR

APHL is providing technical assistance to the Ethiopian Public Health Institute (EPHI) in the installation and implementation of a Laboratory Information System (LIS). APHL is also working with the EPHI LIS/IT team on maintenance and training plans that will be supported by the EPHI team and a local LIS vendor to ensure sustainable maintenance. Strengthening the LIS system will also strengthen the laboratory system overall, while improving laboratory results and data management and providing a more sustainable and transparent approach to LIS activities.

GHSA

APHL is developing a laboratory management training, which will be piloted in collaboration with EPHI, in Addis Ababa, Ethiopia in 2017. Course topics will include the following: Management 101, Planning/Monitoring & Evaluation, Human Resources, Communication, Change/Time Management, Ethics, Global Health Security and Laboratory Networks, Emergency/Incident Preparedness and Response, Biosafety/Biosecurity, Field Surveillance and Management of Infectious Diseases and Antimicrobial Resistance, Overview of Quality Management Systems (QMS), Problem Solving and Decision Making and Finance.

Additionally, APHL will support procurement of supplies and equipment for the EPHI Training Center and biosafety cabinet certification trainings.



Guinea: APHL country lead Dr. Alpha Diallo discusses guidelines for Guinea's national public health laboratory

GUINEA

GHSA

APHL is collaborating with the MOH and CDC Guinea to update the National Laboratory Strategic Plan and Policy in an effort to strengthen the national laboratory system.

APHL is helping to upgrade the Laboratoire National de Santé Publique, the national public health laboratory, into a full reference lab with surveillance and quality management systems. APHL's technical support and logistical assistance is increasing testing capacity for Ebola and other infectious diseases, as well as the ability to prevent, rapidly detect and effectively respond to public health threats.

APHL is also partnering with RESAOLAB, a West African regional laboratory network, to identify training needs and resources at RESAOLAB's new Laboratory Division training center in Donka.

INDIA

GHSA

APHL is collaborating with CDC India and the Indian National Centers for Disease Control to identify public health system priorities and define the laboratory action package implementation plan. Potential activities include laboratory networking and capacity mapping, biosafety cabinet certification and training, strengthening specimen referral and transport systems, and quality improvement in antimicrobial resistance detection.

INDONESIA

GHSA

APHL hopes to partner with CDC Indonesia to support a situational assessment that will evaluate the capacity of Indonesia's public health laboratories. This will help to identify gaps, prioritize next steps and strengthen the national capacity to support surveillance.

KENYA

PEPFAR

APHL has five active priority initiatives in Kenya: LIS, viral load testing scale-up, EQA, equipment management, and mapping the national laboratory system capabilities.

Two full-time APHL local IT staff support 14 provincial hospital laboratory LIS and work hand-in-hand with Kenya's MOH on capacity building initiatives to create a sustainable LIS for the country. APHL is mentoring, training and supporting two MOH staff who will eventually take over the management of the 14 LIS installations.

APHL has conducted a baseline assessment of five MOH viral load testing laboratories to develop LIS requirements for the specific needs of each facility. Three laboratories were determined to require an LIS system and a new LIS is ready to go live at one facility. This new LIS will improve the turnaround time for reporting viral load data to the National AIDS & STI Control Program (NAS COP). APHL also supported the implementation of remote logging of samples to reduce clerical work at LIS laboratories and to expedite reporting of test results to clinicians and to NAS COP.



Kenya: Attendees at LIS transition meeting work on team-building exercises

APHL has developed a database to support the National Public Health Laboratory

in management of the EQA Program, following up with corrective actions and training as required. APHL has trained 129 facilities in use of the EQA system informatics and enrolled them in the EQA proficiency testing program.

In collaboration with the MOH and the National Public Health Laboratory, APHL is mapping the capabilities and capacities of laboratories in Kenya's national public health system to meet and sustain disease outbreak response, surveillance and diagnostic services. An assessment has been completed in 18 of Kenya's 47 counties, with 22 more to be assessed by March 2017.

APHL also has established a national equipment calibration center and provided training for biomedical engineers in the maintenance and calibration of key laboratory equipment. It will continue to support the center and mentor biomedical engineers in five key counties.

Other APHL activities in Kenya include development of a strategic plan for the National Public Health Laboratory, procurement of laboratory equipment and supplies, and services to improve the blood establishment information system at the Kenya National Blood Transfusion Service.

MOZAMBIQUE

PEPFAR

As part of APHL's goal of improving laboratory quality, over 100 lab technicians from Mozambique's 23 laboratories completed the three-part SLMTA workshop. ASLM followed up with Stepwise Laboratory Improvement Process Towards Accreditation (SLIPTA) audits of three clinical and three reference laboratories. Two clinical laboratories received one-star recognition and one improved from one to two stars; one reference lab received two stars, one improved from two to three stars, and one was granted accreditation by IPAC, the Portuguese accreditation body.

APHL is working with MOH to develop a LIS program and improve logistics at laboratory sites. LIS has been implemented at the Jose Macamo Lab to manage viral load and clinical lab data, and APHL has trained MOH staff and installed hardware for a central LIS database under development. To address the logistics of the national supply chain management system and database management, APHL held a five-day training workshop with over 50 participants from the national lab network.

SIERRA LEONE

PEPFAR

APHL is working with the Ministry of Health and Sanitation (MOHS) to implement a National Laboratory Strategic Plan. APHL's efforts are concentrated on strengthening the Central Public Health Reference Laboratory (CPHRL), building testing capacity, and developing a cadre of laboratory scientists who can provide reference testing services and train other laboratories in the MOHS network. Specifically, this has involved providing expert technical consultants, funding for supplies, and training and mentoring for CPHRL's laboratory science staff in testing methods, quality systems, laboratory management and accreditation. These efforts also support the National Surveillance Strategic Plan by providing linkages between epidemiology and laboratory staff.



Sierra Leone: Rapid Response training

To aid the MOHS as it defines the CPHRL's accreditation goals, APHL will support SLMTA training for MOHS staff; the next step towards accreditation, SLIPTA audits, will follow the training.

GHSA

APHL has helped Sierra Leone transition from an emergency Ebola response to a system of early detection and disease prevention, the foundation of which is a strong public health laboratory network that can meet Integrated Disease Surveillance and Response and International Health Regulation requirements. Sierra Leone has taken huge leaps forward, including implementing a new National Testing Algorithm and updating its National Laboratory Strategic Plan.

Working with CDC and the MOHS, APHL helped the CPHRL sustain its response to outbreaks while also taking on the responsibilities of an apex laboratory in a national public health laboratory system.

Investment in Sierra Leone's workforce has paid vast dividends. All 12 Public Health Laboratory Rapid Response Team members are now independently diagnosing Ebola, with 3,700 specimens tested to date; they are trained in Zika diagnosis and have supported the activation of clinical diagnostic labs at Princess Christian Maternal Hospital, Ola During Children's Hospital and Jenner Wright Children's Clinic. Many members are also trained in 12 other tests, including HIV, cholera and influenza.



South Sudan: Solar panels installed at the public health lab

SOUTH SUDAN

PEPFAR

APHL's focus in South Sudan has been to ensure a reliable power source for laboratory needs. In doing so, APHL worked with a local contractor to have solar power installed at two selected MOH sites: public health laboratories (HIV/hepatitis, serology, measles and rubella sections) and the National Blood Transfusion Center. Following installation, APHL arranged for a final inspection, which concluded that the MOH now has a fully operational, uninterrupted power supply that will prevent wasted test samples and save money on fuel needed for generators.

LIS

Laboratory Information Systems. An electronic (or paper, where necessary) system that captures and exchanges data, ensuring continuity, accuracy and speed when communicating test results.

TANZANIA**PEPFAR**

APHL's local IT staff have assisted MOH to make major LIS improvements, especially in the streamlining of data flow, at Tanzania's National Quality Assurance and Training Center and the zonal public health laboratories. All zonal lab sites are now part of the Disa*Lab LIS network, which has full-time support from APHL's in-country team. There has been an increase in verbal communication between laboratories since the implementation of LIS, and the ability to triangulate data has encouraged the dissolution of parallel systems and helped ensure that testing follows the same protocol regardless of laboratory location. Upon request from the MOH, APHL, with input from the MOH, CDC and other stakeholders, developed an LIS guidance document to aid public health reporting.

APHL has also developed a universal application program interface, which will be used to run a real-time data collection system; the program will be implemented at 18 district laboratories, with sites still to be determined with the help of MOH and CDC. Public health programs that may utilize this system include the Sample Referral Hub, an HIV early infant diagnosis dashboard, and the Spoke System, an HIV viral load dashboard, both of which are currently being piloted in the Kagera region.

GHSA

Biosafety cabinet certification training is critical for ensuring the proper and safer functioning of biosafety cabinets. APHL revised in-house domestic materials for use in an international setting, delivered a two-day training session on how to safely use biosafety cabinets and will complete a comprehensive biosafety cabinet certification plan for the country. APHL also brought in the Eagleson Institute to assess, service and certify 16 biosafety cabinets at national and zonal laboratories; an assessment report was shared with CDC. Eagleson Institute staff also provided additional training and mentorship for local biomedical engineers.

In addition to the biosafety cabinet certification plan mentioned above, four APHL members facilitated the national laboratory strategic plan development meeting. The plan is currently undergoing the approval process by MOH leadership.

UGANDA**PEPFAR**

Uganda's Central Public Health Laboratory is transforming into the Uganda National Health Laboratory Services (UNHLS); to help make the transition as smooth as possible, APHL provided technical assistance and a general transference of knowledge. This will help guide UNHLS as it strives to provide stewardship, guidance on technology, reference testing, laboratory policy development and provision of centralized early infant diagnosis and viral load testing.

Uganda is taking additional transformational steps by developing an updated National Laboratory Policy and National Laboratory Strategic Plan, and a new strategic plan for UNHLS. To facilitate this process, APHL coordinated an eight-day meeting with the MOH and other stakeholders to refine the documents.

GHSA

Uganda's team of laboratorians have taken great advantage of APHL's Emerging Leader Program (ELP), which aims to accelerate professional development. Fifteen Ugandan ELP alumni serve as mentors (one on site and others via Skype) to a cadre of high-potential, mid-level scientist-managers who work on a set of interconnected projects, all aligned with Uganda's MOH, CDC Uganda and GHSA priorities. The participants' projects include improving the country's EQA Program, implementation and evaluation of internal quality control procedures and the development of recommendations for the national laboratory referral system.

In 2018, the UNHLS will pilot a long-sought fellowship with the goal of building a robust, holistic program that feeds staff directly into the UNHLS. The fellowship will be linked to the CDC's Field Epidemiology Training Program in an effort to build stronger collaboration between laboratory and epidemiology programs.



Uganda: Biosafety cabinet training

UKRAINE

PEPFAR

APHL organized a two-day workshop to aid Ukraine in enhancing and streamlining the current national HIV testing algorithm. CDC Ukraine's Laboratory Advisor, Marianna Azarskova, assisted in leading the discussion and the work groups. APHL is assisting the Government of Ukraine in developing a National Laboratory Strategic Plan. A National Strategic Planning and Policy Development workshop was provided for a group of personnel from the MOH Center for Public Health Institute technical workgroup, which will assist in writing the plan.

In addition, APHL and HDR, a firm with expertise in laboratory design, are supporting the MOH in selecting a space for the National HIV Reference Laboratory.

VIETNAM

PEPFAR

APHL continues to help manage OpenELIS, the open source software that Vietnam chose for its LIS. APHL aided the OpenELIS strategic development and rollout, and is now tracking and applying lessons learned so this model may be adapted for other countries.

GHSA

APHL has identified multiple ways to strengthen Vietnam's public health laboratory system, including collaborating with the Government of Vietnam, CDC and WHO to develop a national laboratory strategic plan and updating circulars around biosafety. APHL, alongside a local microbiologist, supported an assessment of an Antimicrobial Resistance/Susceptibility Testing system at 16 sentinel sites. Additionally, APHL, in collaboration with the Eagleson Institute, has initiated a three-phased, in-country biosafety cabinet certification training for five engineers.

Through a twinning program with the Hawaii State Public Health Laboratory, the Vietnam National Institute of Hygiene and Epidemiology is gaining knowledge that will strengthen its Quality Management System.

Immediate next steps include an informatics training, which will allow labs and epidemiologists to collaborate and use their data strategically, and strengthening biosafety in-country through additional biosafety cabinet certification trainings and supporting the creation of a biosafety training package.

TWINNING

The pairing of laboratories from two different countries. Through visits and trainings at both facilities, twinning relationships help share and build expertise, expand the scope of knowledge and build long-lasting, global connections.

ZAMBIA

PEPFAR

APHL continues to assist the efforts of Zambia's MOH as it works to create a National Public Health Laboratory. APHL's contributions include strategic planning for national laboratory policy and procurement of supplies and equipment.

Beyond this, APHL is supporting the nation's public health laboratory system at large by training its workforce, strengthening its quality systems and providing expertise, experience and technical assistance to support the development of integrated, sustainable clinical laboratory networks. APHL consultants are training MOH laboratory staff in leadership and management, equipment maintenance and biosafety. A twinning relationship is being facilitated between the MOH Laboratory Unit and the Georgia Department of Public Health; through this relationship, laboratorians will share best practices in test validation, EQA, surveillance, data management, information systems and accreditation.

ZIMBABWE

PEPFAR

Through mentoring programs and a deep commitment to quality, APHL and Zimbabwe are collaborating to expand and improve HIV diagnostic testing and monitoring. APHL is supporting three integrated programs in the laboratory system throughout the country. The first program involves six laboratory mentors, placed at provincial super-laboratories. Each mentor is responsible for the improvements at their assigned provincial super-laboratory, as well as four district laboratories in that province. The goal is to build capacity at 30 facilities and integrate quality improvements to support EQA for early infant diagnosis, CD4, chemistry, hematology and viral load testing. The next program will provide technical support of QMS. Complementing the above activities, APHL provides targeted mentorship and executes projects to advance the quality of testing and standards using SLMTA program tools.

Lastly, an EQA proficiency testing program has been implemented to assure reliable access to services at over 600 sites. Together, the entire APHL Zimbabwe team is helping to build capacity at the National Microbiology Reference Laboratory.

GLOSSARY

APHL	Association of Public Health Laboratories	MOH	Ministry of Health
ASLM	African Society for Laboratory Medicine	PEPFAR	US President's Emergency Plan for AIDS Relief
CDC	US Centers for Disease Control and Prevention	QMS	Quality Management Systems
EQA	External Quality Assessment	SLIPTA	Stepwise Laboratory Improvement Process Towards Accreditation
GHSA	Global Health Security Agenda	SLMTA	Strengthening Laboratory Management Towards Accreditation
LIS	Laboratory Information System		

FUNDING

This project was 100% funded with federal funds from a federal program of \$4.1 million. This publication was supported by Cooperative Agreement # NU600E000103 funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of CDC or the Department of Health and Human Services.

© Copyright 2017, Association of Public Health Laboratories. All Rights Reserved.