

GLOBAL HEALTH

STRENGTHENING LABORATORY SYSTEMS TO PREVENT PUBLIC HEALTH THREATS FROM ABROAD

UNMET NEEDS

- Increase global health funding across federal agencies to build capacity to support diagnostic testing of infectious diseases and to sustain HIV Viral Load testing in laboratories globally.
- Continue to support the global health security initiative to protect, detect and respond to public health threats by strengthening national laboratory systems.

SUPPORTING LAB SYSTEMS WORLDWIDE

A strong national public health laboratory system is essential for preparedness and response. Medical laboratories diagnose many diseases, conduct epidemiological surveillance, investigate outbreaks and conduct research. Inadequate resources and diagnostic services at these laboratories can compromise the quality of patient care and lead to misdiagnosis, causing under- or over-treatment of diseases and resulting in significant economic and public health challenges.

APHL initiatives strive to strengthen national laboratory systems, infrastructure and networks around the world by increasing access to diagnostic laboratory services, improving integrated disease surveillance capabilities and the quality of laboratory practice. Through collaborations with the US Centers for Disease Control and Prevention (CDC), APHL has supported US government efforts in developing countries for over two decades. This support includes providing management support and technical assistance to government and non-governmental organizations in over 30 countries with initiatives addressing all components of the International Health Regulation laboratory core capacity: integrated disease surveillance capabilities, quality of laboratory practice and services, strategic planning and policy development, access to diagnostic laboratory services and strengthening national laboratory systems,



infrastructure and networks. Much of APHL's 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 global health security initiatives which aim to strengthen countries' capacity to prevent, detect and respond to infectious disease outbreaks.

GLOBAL HEALTH SECURITY

The US seeks to safeguard America's health by accelerating progress toward a world safe from infectious disease threats and promoting global health as an international security priority. Achieving these goals requires collaboration amongst many departments and agencies, including the Departments of Health and Human Services, Agriculture, State, Defense and the US Agency for International Development (USAID). The keystones to ensuring global health security include:

- Multi-sectoral and international coordination and communication
- Early detection of emerging threats
- Rapid and effective response, prevention and reduction of outbreaks—natural, accidental or intentional

One way APHL supports this mission is by providing innumerable trainings around the world that directly improve testing capability, allowing clinicians to better diagnose and treat diseases, and, in turn, save lives.

LEARNING FROM EBOLA

The 2014-2016 Ebola Virus Disease (EVD) epidemic in West Africa resulted in over 15,000 confirmed cases (28,000 suspected cases) and over 11,000 deaths, and was the deadliest Ebola outbreak to date. The severity of the epidemic was compounded by poverty, local burial customs, mistrust, an overwhelmed and ineffective healthcare system, delay in identifying EVD and the lack of strong national public health laboratory systems.

The 2014-2016 EVD outbreak has shown that strong health systems are required for disease surveillance and outbreak response. For any nation to have the capacity to respond to outbreaks, they must have a well-trained and effective workforce; a strong national reference laboratory with a well-established laboratory network; and a functioning laboratory information management system to allow secure communication of data between laboratories, clinicians and patients.

PEPFAR

Founded in 2003 by President George W. Bush, PEPFAR has entered its third phase (2013-present) of helping countries build and strengthen their health systems. Investments from PEPFAR through CDC and its implementing partners, like APHL, have increased the resiliency and responsiveness of health systems in partner countries and put them on a path to achieving an AIDS-free generation.

SCALE-UP OF HIV VIRAL LOAD TESTING

Viral Load (VL) testing is a routine monitoring test that measures the amount of HIV virus in a person's blood, which indicates how far the disease has progressed and determines treatment options. APHL has been a pioneer in establishing National VL Scale-Up Plans in some African nations. In Zimbabwe, for example, APHL's VL initiative has enabled the testing of over 100,000 patients since the program's

CDC FUNDING

GLOBAL HEALTH PROTECTION

FY 2019: \$58
FY 2020: \$65.2 (necessary)

PEPFAR

FY 2019: \$2,125B
FY 2020: \$2,125B (necessary)

(Dollars in millions, unless noted)

implementation in 2016. Increased access to testing is instrumental in improving clinical care outcomes and quality of life for people living with HIV—especially mothers and children who have acquired additional opportunistic infections like tuberculosis.

Implementing the VL initiative was only possible through the strengthening of Zimbabwe's health system as a whole. APHL provided support for the creation of a specimen transport referral system to ensure samples can be moved from rural areas to regional testing centers for quicker testing and results generation, and is collaborating with clinical partners to ensure periodic monitoring of registered HIV/AIDS patients and their families. This model is being replicated in several other countries as the value of investing in VL routine monitoring testing programs becomes clear. ■

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