APHL GLOBAL HEALTH CAPABILITIES

CAPABILITIES SUMMARY

MAY 2024

The Association of Public Health Laboratories (APHL) works with countries around the world to build strong and resilient national laboratory systems. We support and coordinate the US national public health laboratory system that serves all 50 states, as well as US territories.

With over 50 years of experience managing public health laboratory programs, we apply our expertise to serve national laboratory systems across the globe. APHL provides technical assistance, trainings and workshops, policy development, strategic planning and more across the capabilities outlined below.

Biosafety and Biosecurity

APHL supports countries in improving laboratory biosafety and biosecurity through risk assessments, trainings, mentorships and supporting programs, such as the Biological Safety Cabinets (BSCs) Certification Training Program which focuses on developing participant skills in the maintenance and certification of BSCs.

Energy

Laboratory access to a reliable source of power is critical to healthcare service delivery and disease control and prevention. APHL supports the installation of various energy solutions—including solar energy systems—at laboratories, clinics and hospitals, and provides training for system maintenance.

Foodborne Surveillance

APHL supports capacity building for surveillance of antimicrobial resistant pathogens through the Global Antimicrobial Resistance (AR) Laboratory and Response Network, and partners with PulseNet International for training and laboratory capacity building for implementing surveillance of bacterial enteric pathogens.

Informatics and Data Modernization

APHL supports countries in evaluation, design and implementation of laboratory information systems (LIS), which facilitate efficient management of testing workflows, enable public health and clinical laboratories to report results, and address the data integration, interoperability, visualization, standardization and standardizing necessary for effective utilization of laboratory data by surveillance and clinical partners.

Laboratory Accreditation

APHL assists countries to build their laboratory workforce and move toward accreditation through capacity building in quality management systems (QMS), laboratory leadership, internal and external quality assessment and specific diagnostic techniques related to a country's disease testing priorities. APHL uses "train the trainer" programs to build laboratory workforces that can apply QMS toward accreditation and enhance the quality of a country's laboratories.

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7700 Wisconsin Avenue, Suite 1000 • Bethesda, MD • 20814 | aphl.org/GlobalHealth | global.health@aphl.org

Next Generation Sequencing

APHL works with countries to develop and optimize next generation sequencing (NGS) protocols and laboratory procedures in a pathogen-agnostic and pathogen-specific approach on Illumina, Oxford Nanopore Technologies and Ion Torrent sequencing platforms. APHL supports, trains and advises on laboratory capacity building for NGS, QMS, bioinformatics and genomic epidemiology to produce actionable genomic data for public health decision making.

Public Health Laboratory Network

A National Public Health Laboratory Network is essential for countries to implement surveillance for priority diseases and prepare, detect and respond to the next outbreak. This includes providing guidance on government policy, establishing a laboratory-tiered network, and developing national strategic and operational plans that allow for a systematic and stepwise approach to building a national public health laboratory network.

Twinning

The APHL Laboratory Twinning Initiative is an innovative, peer-to-peer approach to strengthening national public health laboratory systems in a sustainable, cost-effective and mutually beneficial manner. Twinning builds on APHL's membership base of US state public health laboratories and pairs them with international laboratories; it fosters long-term partnerships that build laboratory capacity and quality systems and provide ongoing learning and development opportunities.

Waste Management

APHL supports the improvement of waste management systems in the laboratory through technical assistance. APHL supports activities such as: incinerator repair and installation, liquid waste disposal including guanidinium thiocyanate (GTC), development of waste management strategies and on-site training for laboratory personnel on appropriate waste management disposal methods.

Wastewater Surveillance

APHL supports laboratory capacity building for collecting and testing wastewater samples for molecular and genomic surveillance using an NGS approach. This surveillance program is principally designed to test for SARS-CoV-2, but the number of pathogens being surveyed can be expanded based on a country's need for pandemic preparedness.

Workforce Development

APHL develops and implements custom workshops and curricula focused on eliminating immediate technical gaps while also comprehensively addressing a broad range of management and leadership skills to enhance workforce capacity and support laboratory system building.

Learn more by visiting APHL.org/GH-Capabilities

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