



# APHL Position Statement

## Improving Health Outcomes by Strengthening National Public Health Laboratory Systems Globally

### A. Statement of Position

A fully coordinated and integrated National Public Health Laboratory (NPHL) System is essential for the surveillance, detection and response to address public health threats.

### B. Implementation

1. Support laboratory workforce development.
2. Advise and provide feedback on country-specific strategic plans and policy development to improve laboratory systems.
3. Strengthen laboratory informatics capability by sharing best practices and experiences.
4. Develop the capacity and capability for quality assured laboratory testing.

### C. Background/Data Supporting Position

*Need for International Health Regulations (IHR) Compliance through Global Health Security Agenda (GHSA)*

Supporting principles of GHSA promote a world safe and secure from the threat of infectious diseases through three main pillars: (1) to prevent and reduce the likelihood of outbreaks, (2) detect threats early to save lives, and (3) provide multi-sectoral, international coordination and communication for rapid, effective response.<sup>1</sup>

The World Health Organization International Health Regulations (IHR, 2005) asks its member states to meet minimum core capacities, including laboratory. The purpose of IHR (2005) is to

"prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade."<sup>2</sup> The IHR requires countries to assess the current national infrastructure, capacities, and resources for the purposes of public health surveillance and response. The assessments and work plans for compliance were to be completed by June 2012, but fewer than 20% of Member Countries have met this requirement.<sup>3</sup> Therefore, due to lack of compliance, early response and early control to the outbreaks of Ebola Virus Disease (EVD), Zika virus, Dengue, and many others were hampered.

#### *Laboratory Response to Outbreaks*

The need for organized laboratory systems and networks capable of responding to large-scale events was highlighted by the 2014-2016 Ebola virus disease epidemic in West Africa.<sup>4</sup> With the challenges laboratory systems faced to integrate new diagnostic strategies and laboratory services during the outbreak, the crisis emphasized the importance of streamlining diagnostic development and evaluation, material and specimen transfer between entities and deployment of healthcare workers with laboratory expertise. From the outcomes of the EVD epidemic, focus on these laboratory areas will prove vital to the overall response and effectiveness of the NPHL system.

### Strengthening NPHL Systems

In order for NPHL Systems to comply with IHR (2005) and to detect and respond to disease threats, leadership and coordination of a strong NPHL that is fully integrated with the national public health system is crucial. NPHLs should coordinate and assure the quality of surveillance and testing services through a harmonized network of public and private diagnostic laboratories. A critical component of surveillance data quality is the timely and accurate management of laboratory data. This is most often accomplished through the implementation of electronic Laboratory Information Systems (LIS) that can capture, organize and report data on specimens, patients and associated laboratory results. These systems can enable interfacing with instruments to capture laboratory results and may also exchange data with surveillance systems to enable linkages between laboratory and epidemiology programs. The design and implementation of an organized, laboratory-based surveillance system will promote the rapid detection, reporting and response to threat events. NPHL coordination and quality assurance of a tiered diagnostic laboratory system is vital to providing access to testing services essential to clinical treatment and public health prevention initiatives in a cost-effective approach.

An organized national laboratory system that is enabled through national laboratory policy and guided by a comprehensive strategic plan is an essential component for a country to address prevention, detection and response to public health threats.

### D. References

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