Strengthening Laboratory Systems - Foundational to Implementing the Global Health Security Agenda Action

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- NGO, non-profit organization
- Manages the public health laboratory network of US state & local public health labs, state environmental and agricultural labs

**Vision:**
A healthier world through quality laboratory systems

**Mission:**
Shape national and global health outcomes by promoting the value and contribution of public health laboratories and continuously improving the public health laboratory system and practice
National Laboratory System Action Package

• **Five-Year Target**: Real-time biosurveillance with a national laboratory system and effective modern point-of-care and laboratory-based diagnostics.

• **As Measured by**: A nationwide laboratory system able to reliably conduct at least five of the 10 core tests on appropriately identified and collected outbreak specimens transported safely and securely to accredited laboratories from at least 80 percent of districts in the country.

• **Desired National Impact**: Effective use of a nationwide laboratory system capable of safely and accurately detecting and characterizing pathogens causing epidemic disease, including both known and novel threats, from all parts of the country. Expanded deployment, utilization, and sustainment of modern, safe, secure, affordable and appropriate diagnostic tests or devices.
Addressing the Objectives: 11 Action Packages

- Prevent 1: Antimicrobial Resistance
- Prevent 2: Zoonotic Disease
- Prevent 3: Biosafety and Biosecurity
- Prevent 4: Immunization
- Detect 1: National Laboratory System
  - USA committed to leading this along with Thailand and South Africa
- Detect 2 & 3: Real-Time Surveillance
- Detect 4: GHSA Reporting
- Detect 5: Workforce Development
- Respond 1: Emergency Operations Centers
- Respond 2: Linking Public Health with Law and Multi-sectoral Rapid Response
- Respond 3: Medical Countermeasures and Personnel Deployment Action Package
Development and Review of National Laboratory Strategic Plans and Policy Documents

**Mandate**
- National laboratory policy
- Laboratory strategic Plan

**Capacity**
- Integrated, tiered system
- Financial plan

**Access**
- Quality and safety
- Training and retention

**GHSA Action Package(s)**
Laboratory System, Real-Time Surveillance, EOC, Workforce Biosafety/Biosecurity
Laboratory Twinning Model

- Established through a formal agreement between labs in different countries
- Ongoing, multi-year partnership with specific goals and objectives
- Provides a dedicated training venue for strengthening diagnostic capacity
- Allows for mentorship across technical lanes

Uganda Central Public Health Laboratory with New Mexico State Public Health Laboratory

- Assist with design of organogram of new national public health reference laboratory
- Provide leadership, management and business processes training
- Assist with development of quality management system, including policies and protocols
- Review WHO IHR requirements

GHSA Action Package(s)
Laboratory System, Real-Time Surveillance, EOC, Workforce Biosafety/Biosecurity
Developing Resilient Laboratory Networks

- Standardized diagnostics
- Secure communication, alert, reporting system
- Training and instrumentation standards
- Quality standards testing
- Assurance of biosafety and biosecurity
- Connected to EOC

**GHSA Action Package(s)**

Laboratory System, Real-Time Surveillance, EOC, Workforce Biosafety/Biosecurity
Workforce

- Emerging Leader Program
- Development of Public Health Laboratory Service Fellowship (PHLSF) curriculum and implementation framework
  - Program to address the regional or country’s public health laboratory workforce gaps.
  - Inclusive of mentoring and field projects
    - Framework for implementation of fellowship based on curriculum.
    - Collaboration with public health institutes and other stakeholders

GHSA Action Package(s)
Laboratory System, Real-Time Surveillance, EOC, Workforce Biosafety/Biosecurity
Challenges and Lessons Learned

Challenges
• Multilateral coordination
• Resistance to assessments
• Resistance to share country specific reports
• Integration of GHSA activities in to on-going activities

Lessons Learned
• Importance of system strengthening
• Importance of strategic plans, policy documents and M&E
• Develop long term twinning partnerships for mentorship
• Develop resilient laboratory networks
• Leverage partnerships e.g. ASLM
• Leverage other investments e.g. PEPFAR
• Develop sustainable training solutions
Thank you for your participation

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Laboratory Strengthening for Global Health Security

African Society for Laboratory Medicine

Trevor Peter
Chair, ASLM
CDC, Atlanta – Feb 10-12, 2016
ASLM GLOBAL HEALTH SECURITY STRATEGY

EXPANDING and the African Public Health Laboratory Network
Strengthen pan-African capacity and bio-

ENSURING Building Surge
Advocacy
Training and Communications

MAPPING AND GHS LABORATORY CAPACITY and using a GHS

COMMUNITY INITIATIVE
Training for correct & sample collection and community level

SYSTEMS and technical
Strengthen lab strategy and referral networks

Core Principles:
- Incisiveness
- Collaboration
- Advocacy
- Ownership
- Coordination
- Sustainability

Collaborations
- WHO
- OIE
- AU/ACDC
- MOHS
- CDC & Partners
ASLM GHSA Activities

“Regional GHSA Consultation on Laboratory Strengthening in Africa”

- 15-16 October 2015, Freetown, Sierra Leone
- Co-convened with WHO AFRO
- 100+ senior-level public health officials; 20 MOHs present
ASLM GHSA Activities

- "Freetown Declaration"
  - Developed by WHO AFRO, ASLM, and 20 MOH
  - Calls for:
    - New framework for functional tiered laboratory network
    - Implementation of a score card to assess readiness of networks
    - Integration of networks with public health institutes and surveillance systems

The Freetown Declaration

The Freetown Declaration on Developing Resilient Laboratory Networks for the Global Health Security Agenda in Africa.

We, country delegates, multilateral agencies, development partners, public health institutions, professional associations, and academic institutions, are gathering for the Regional Health Security Consultation on Laboratory Strengthening in Freetown, Sierra Leone, on 15-16 October 2013, and

- Appreciate that this time of local Coordinating has brought partners together at the dawn of the global and right time to rethink our common strategies to establish the political, legal, and practical frameworks for resilient laboratory networks to address the global health security agenda in Africa.
- Acknowledge that $1.3 billion in foreign aid has been lost to 2013 for Guinea, Liberia, and Sierra Leone as a result of the epidemic. 1
- Acknowledge only 16% of the world’s healthcare workers are African, and they care for 23% of the global health burden. 2
- Acknowledge the increase of antimicrobial resistance (AMR) in Africa due to inappropriate use of antibiotics is inadequate capacity to detect resistance. Drug-resistant infections can cause 30 million deaths a year and cost up to $100 trillion a year globally by 2050. 3

Collectively, we recognize the need for multi-sectoral, multi-country, and pan-African strategies for prevention, control, and response to disease outbreaks.

- Recognize the role played by the emerging and spreading new and existing infectious diseases of national and international concern, the risk of disease resilience and the potential for accidental or deliberate release, theft, or illicit use of biological agents requires the strengthening of public health laboratory networks and surveillance systems.
- Recognize that integrated national laboratory networks and surveillance systems are the cornerstone of a public health system and essential to the robust detection and early response to public health threats.
- Recognize the significant progress made in strengthening laboratory networks since the adoption of the 2005 WPRHP Declaration for Strengthening Laboratory Systems and for the implementation (IAARC2012) in the 58th session of the World Health Organization Regional Committee for Africa (MOH/WPR), both resulting in the scale-up of diagnostic services for HIV, tuberculosis, and malaria.

3 United Nations for Disease Control and Prevention (2013), "The role of the world health system in the world health system based on 2013."
ASLM GHSA Activities
Framework I

• Framework for functional tiered public health laboratory networks
  — Provides practical, innovative strategies to connect individual labs into integrated networks
  • Connecting a tiered system with public health institutes to ensure early disease detection and effective response
ASLM GHSA Activities
Framework 2

- Conducting laboratory-based surveillance for monitoring AMR
  - Provides guidance for establishing laboratory capacity for antimicrobial resistance (AMR) surveillance

**Actions**
- Government commitment to support the surveillance program for AMR at country level.
  - Develop a national laboratory-based surveillance system at country level.
  - Establish coordinating body with responsibility to systematically collect and analyse data and share data at global level.
  - Allocate at least one reference laboratory for ID and susceptibility testing with competence of phenotypic and genotypic determination of presence of resistance.
  - Set up networks for data collection. Surveillance is stepwise process and if in place already, only certain modifications might be necessary.
  - Emphasis on laboratory quality systems.
  - Diagnostic stewardship.

**Responsibilities**
- National Department of Health (NDOH)
- National Department of Health/NDOH
- Coordinating body
- Reference laboratory

**Timeline**
- End of 2015
- End 2015
- Beginning 2016
- 2016
ASLM GHSA Activities
Framework 3

- Guidelines on regulation of diagnostics use during outbreaks
  - A framework for regulating and implementing IVDs for use in an outbreak situation

Actions in the framework:

- Determine if Outbreak
- Develop IVD
- Evaluate IVD
- Implement IVD
- Monitor IVD
ASLM GHSA Activities
Framework 4

• Stepwise score card: assessing readiness of laboratory networks
  – “What gets measured, gets done”
  – Clear indicators for routinely measuring laboratory progress
  – Combines and elaborates on pre-existing laboratory assessment tools
ASLM: GHSA Activities – 17 Countries

Benin
Burkina Faso*
Cameroon
Cote d’Ivoire*
DRC
Ethiopia
The Gambia*
Ghana
Guinea Bissau
Kenya*
Mali*
Mauritania*
Nigeria*
Senegal*
Tanzania
Togo*
Uganda*

* Indicates countries visited by ASLM for GHSA
ASLM GHSA Activities in 17 countries

**Laboratory Systems Strengthening**
- Assessing GHSA Laboratory Network Functionality with new scorecard
- Designing specimen referral networks
- Training program on lab sample collection and shipping for community health workers
- Support for adaptation of laboratory strategic plans to GHSA
- Biosafety cabinet certification and mapping of certification services in Africa
- Assessment of proficiency testing capacity and mapping of EQA services in Africa
- Identifying laboratory surge capacity and knowledge sharing

**ASLM works with networks of partners, e.g. APHL on lab strengthening programs**
ASLM GHSA Activities – Lessons Learned

MOH Leadership
- All GHSA-funded entities should be aligned with government priorities with defined workplans and specific activities.

Country Engagement
- Before implementation, appropriate program introduction is needed at the country level with all key stakeholders.
- Include local entities and NGOs from planning phase onwards to ensure cultural appropriateness, to capitalize on prior work and ensure knowledge transfer.
- In-country visits are key for gaining trust and smoother program implementation.

Coordination
- Forums should be held between multiple funders so that resources can be better mapped and leveraged.
CDC Global Health Security Agenda/Ebola Grantee Meeting

Accountability. Results. Sustainability.