

# GLOBAL HEALTH SECURITY AGENDA INTERAGENCY ROADMAP

## SIERRA LEONE

## Overview and Context

The purpose of this document is to develop a roadmap for ongoing and planned Global Health Security Agenda (GHSA) activities in support of the 12 GHSA targets through 2019. The goal is to ensure coordination and partnership across all organizations to ensure that targets are met and sustainable systems and networks are established. The roadmap is organized by specific capacities under the Prevent, Detect, Respond framework, and provides a snapshot of all activities planned to support GHSA implementation in Years One (2015) to Five (2019).

This will be a living document that will change over time to reflect shifts in priorities and/or resources. This template is designed as a resource for GHSA planning and should ultimately be adapted as countries articulate how best to meet their needs for GHSA planning and implementation. This document is intended to inform and complement annual country-specific work plans.

Other contextual issues that will be addressed in this roadmap include:

- Relevant country history with GHSA
- Presence and role of donors
- Prior relevant policy and program efforts with World Health Organization (WHO) International Health Regulations (IHRs) and World Organization for animal Health (OIE) World Animal Health Information System (WAHIS) reporting
- International Organizations' presence and programs
- Regional Organizations' presence and programs (e.g. African Union)
- Non-state organizations of relevance (e.g. Institute Pasteur)
- Other key issues and sensitivities

### Note

The information contained in this document is meant for planning and discussion purposes between the host-country and other GHSA partners. All activities will be carried out in a manner that is consistent with organizations requirements, budget authorities, and missions of host countries and GHSA partners. All GHSA partner country foreign assistance is subject to availability of funds and appropriations by the governmental processes of GHSA partner countries.

## Elements of the GHSA Roadmap

The document is organized by priority areas, under the Prevent, Detect, and Respond framework. Under each element, the first box of information contains the overarching GHSA Goal, GHSA Objective, and GHSA target. The last section includes overarching, cross-cutting and/or regional priorities for Sierra Leone.

## Global Health Security Agenda Overarching Activities

Within the context of Prevent/Detect/Respond, this overarching implementation roadmap reflects by target the following:

- Sierra Leone's institutional structures and responsibilities, roles, responsibilities (*under Host Government activity*)
- U.S. Departments and Agencies providing technical assistance or support (*under US Government activity*)
- Other donors' programs, support, etc. (*under Other activity*)
- Non state organizations' activities. (*under Other activity*)
- Coordination mechanisms

## Acronyms

Acronym	Meaning
AFENET	African Field Epidemiology Network
AFRICOM	United States Africa Command
AFRO	World Health Organization Regional Office for Africa
AMR	Antimicrobial Resistance
APHL	Association of Public Health Laboratories
ASLM	African Society for Laboratory Medicine
CDC	Centers for Disease Control and Prevention
CHP	Community Health Post
BSS	Biosafety and Biosecurity
DAI/P&R	Development Alternatives, Inc. - Preparedness and Response Project
DFID	Department for International Development (UK)
DHMT	District Health Medical Teams
DHO	District Health Officer
DoD	Department of Defense
DoS - BEP	Department of State - Biosecurity Engagement Program
CTR-CBEP	Department of Defense Cooperative Threat Reduction - Cooperative Biological Engagement Program (as implemented by the Defense Threat Reduction Agency (DTRA))
EOC	Emergency Operations Center
EM	Emergency Management
EPT	Emerging Pandemic Threat Program
FAO	Food and Agriculture Organization of the United Nations
ICAP	Columbia University's Mailman School of Public Health, ICAP
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
IMC	International Medical Corps

IPC	Infection Prevention and Control
IS	Information Systems
JSI/APC	John Snow Research & Training Institute, Inc. - Advancing Partners and Communities Project
Lab	Laboratory Systems
LMIS	Laboratory Management Information Systems
MAFFS	Ministry of Agriculture, Forestry, and Food Security
MCHP	Maternal and Child Health Post
MCM-Personnel	Medical Countermeasures and Personnel Deployment
MOD	Ministry of Defense
MoHS	Ministry of Health and Sanitation
MAFFS	Minister of Agriculture Forestry and Food Security
MSH/SIAPS	Management Sciences for Health - Systems for Improved Access to Pharmaceuticals and Services Project
NGO	Non-Governmental Organization
OIE	World Organisation for Animal Health
ONS	Office of National Security
PCR	Polymerase Chain Reaction – testing in molecular biology
PHEM	Public Health Emergency Management
PH-Law	Linking Public Health and Law Enforcement
POE	Ports of Entry <i>or</i> Points of Entry
PHNEOC	Public Health National Emergency Operations Center
QA	Quality Assurance
RDT	Rapid Diagnostic Test
RMNCH	Reproductive Maternal Newborn Child Health
Rpt	Reporting
RRT	Rapid Respond Teams
SMART	Specific, Measurable, Achievable, Realistic, and Time-bound
SOP	Standard Operation Procedure

STRIVE	Sierra Leone Trial to Introduce a Vaccine against Ebola
Surv	Surveillance Systems
USAID	U.S. Agency for International Development
USAMRIID	U.S. Army Medical Research Institute for Infectious Diseases
USD	U.S. Dollars
USDA	U.S. Department of Agriculture
VPD	Vaccine Preventable Diseases
Workforce	Workforce Development
ZD	Zoonotic Diseases

# PREVENT

## Antimicrobial Resistance

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Prevent Avoidable Epidemics	Preventing the emergence and spread of antimicrobial drug resistant organisms and emerging zoonotic diseases and strengthening international regulatory frameworks governing food safety.	Support work being coordinated by WHO, FAO,OIE to develop an integrated and global package of activities to combat antimicrobial resistance, spanning human, animal, agricultural, food and environmental aspects (i.e. a one-health approach), including: a) each country has its own national comprehensive plan to combat antimicrobial resistance; b) strengthen surveillance and laboratory capacity at the national and international level following agreed international standards developed in the framework of the Global Action plan, considering existing standards and; c) improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid, point-of-care diagnostics, including systems to preserve new antibiotics.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>National infection prevention and control (IPC) unit and advisory committee created within MoHS</li> <li>National IPC Policy and Guidelines finalized and disseminated</li> <li>Updated National Community Health Worker Policy includes IPC and WASH guidance and aligned to relevant guidelines</li> <li>IPC knowledge and practices improved throughout the healthcare system (public and private) in ~ 50% of districts</li> <li>IPC data monitoring system developed</li> </ol>	<p>CDC USAID - JSI/APC</p>	<p>Ministry of Health and Sanitation (MoHS)  Ministry of Defense (Mil 34)</p>	<p>WHO  DFID/PH England  Global Fund  IMC  ICAP  JSI/APC</p>
Year 2	<ol style="list-style-type: none"> <li>IPC capacity and quality improved at facilities in ~50% of districts through mentorship</li> <li>IPC knowledge and practices improved in 75% of all districts</li> <li>IPC advanced practice course or certification developed and released</li> </ol>	<p>CDC USAID - JSI/APC</p>	<p>MoHS  Ministry of Defense (Mil 34)</p>	<p>WHO  DFID/PH England  Global Fund</p>



	4. IPC data monitoring system established at all levels (National, District, and Hospital)			
Year 3	<ol style="list-style-type: none"> <li>1. National plan to detect and prevent AMR developed and approved</li> <li>2. Clinicians and pharmacists educated on appropriate antimicrobial usage</li> <li>3. Surveillance definitions for priority healthcare-associated infections (HAI) developed</li> <li>4. National IPC technical guidelines reassessed and modified as needed</li> </ol>	CDC	MoHS	WHO
Year 4	<ol style="list-style-type: none"> <li>1. AMR prevention and detection plan implemented</li> </ol>	CDC	MoHS	WHO
Year 5	<ol style="list-style-type: none"> <li>1. Priority laboratories can test for AMR in at least three pathogens using standardized, reliable detection assays and/or culture techniques</li> <li>2. Summary report of HAI data for pilot hospitals produced</li> </ol>	CDC	MoHS	WHO

## Zoonotic Diseases

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Prevent Avoidable Epidemics	Preventing the emergence and spread of antimicrobial drug resistant organisms and emerging zoonotic diseases and strengthening international regulatory frameworks governing food safety.	Adopted measured behaviors, policies and/or practices that minimize the spillover of zoonotic diseases from lower animals into human populations.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>Multi-sectoral coordination mechanism for zoonotic disease prevention established (NOTE: same mechanism will coordinate GHSA activities)</li> <li>Initial framework and standardized data collection protocols for high risk zoonotic diseases developed</li> <li>Data collection and capacity to conduct diagnostic surveillance in wildlife for Ebola and other high-consequence pathogens improved</li> </ol>	USAID - Emerging Pandemic Threat 2 (EPT-2) Program  CDC	Ministry of Agriculture and Health, Forestry, Food Security (MAFFS)  MoHS	Njala University UNIMAK FAO WHO OIE
Year 2	<ol style="list-style-type: none"> <li>High-risk "nodes" for spillover of zoonotic threats identified; behavior and practices that enable spillover identified</li> <li>System for sampling and testing wildlife, livestock, and humans to better define risk from selected zoonotic pathogens in animal reservoirs and disease vectors implemented</li> </ol>	USAID - EPT-2 Program  CDC	MAFFS	
Year 3	<ol style="list-style-type: none"> <li>System for sampling and testing wildlife, livestock, and humans evaluated</li> <li>Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover validated</li> </ol>	USAID - EPT-2 Program	MAFFS	

Year 4	<ol style="list-style-type: none"> <li>1. Capacity of animal health professionals to determine risk based on epidemiology and modeling/analytics demonstrated</li> <li>2. Policy, organizational and operational needs for multi-sectoral coordination mechanism officially established to ensure sustainability</li> <li>3. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover implemented</li> </ol>	<p>USAID - EPT-2 Program</p> <p>CDC</p>	<p>MAFFS</p> <p>MoHS</p>	<p>FAO</p>
Year 5	<ol style="list-style-type: none"> <li>1. One Health workforce trained in accordance with national zoonotic disease prevention needs</li> <li>2. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover sustained</li> <li>3. Continue coordination mechanism that enables cross-sectors/ministries to collaborate routinely for zoonotic disease prevention</li> </ol>	<p>USAID - EPT-2 Program</p>	<p>MAFFS</p>	<p>FAO</p>

## Biosafety & Biosecurity

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Prevent Avoidable Epidemics	Promoting national biosafety and biosecurity systems.	A whole-of-government national biosafety and biosecurity system is in place, ensuring that especially dangerous pathogens are identified, held, secured and monitored in a minimal number of facilities according to best practices; biological risk management training and educational outreach are conducted to promote a shared culture of responsibility, reduce dual use risks, mitigate biological proliferation and deliberate use threats, and ensure safe transfer of biological agents; and country-specific biosafety and biosecurity legislation, laboratory licensing, and pathogen control measures are in place as appropriate.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>1. Dangerous pathogen collections for animal and human health identified, documented, and destroyed or stored in a central regional repository</li> <li>2. Capacities in Biosafety and Biosecurity (BSS) among key laboratories assessed, in conjunction with capacity and maximization for culture-free diagnostics that could alleviate the need for storage and transport</li> <li>3. Security of Ebola samples strengthened from the point of collection to the point of disposal or storage</li> <li>4. Comprehensive governmental policies and mechanisms established for specimen tracking, transport and storage</li> </ol>	<p>Department of Defense (DoD) Cooperative Threat Reduction (CTR)/Cooperative Biological Engagement Program (CBEP)</p> <p>Department of State</p> <p>CDC – Technical Assistance</p> <p>USAID - EPT-2 Program</p>	<p>MoHS</p> <p>MAFFS</p>	<p>PH England</p> <p>WHO</p> <p>FAO</p> <p>APHL</p> <p>ASLM</p> <p>UNDP- GEF project (Ghana)</p> <p>Canada</p> <p>eHealth</p>
Year 2	<ol style="list-style-type: none"> <li>1. Assessment of BSS requirements at key One Health laboratories conducted</li> </ol>	<p>DoD CTR/CBEP</p> <p>CDC – Technical Assistance</p> <p>USAID - EPT-2 Program</p>	<p>MoHS</p> <p>MAFFS</p>	<p>PH England</p> <p>WHO</p> <p>FAO</p> <p>UNDP- GEF project (Ghana)</p> <p>Canada</p>
Year 3	<ol style="list-style-type: none"> <li>1. BSS curriculums across professional fields including laboratory technicians,</li> </ol>	<p>DoD CTR/CBEP</p> <p>CDC – Technical Assistance</p>	<p>MoHS</p>	<p>PH England</p> <p>WHO</p>

	physicians, hazardous waste disposal technicians, etc.) are developed or updated in compliance with WHO and OIE standards	USAID - EPT-2 Program	MAFFS	FAO UNDP- GEF project (Ghana) Canada
Year 4	1. System in place for ensuring One Health lab meets fully functional biosafety conditions and best practices	DoD CTR/CBEP CDC – Technical Assistance USAID - EPT-2 Program	MoHS  MAFFS	PH England WHO FAO UNDP- GEF project (Ghana) Canada
Year 5	1. BSS system evaluation conducted 2. BSS capacities in human and animal labs meet WHO/IHR and OIE/PVS standards	DoD CTR/CBEP CDC – Technical Assistance USAID - EPT-2 Program	MoHS  MAFFS	PH England WHO FAO UNDP- GEF project (Ghana) Canada

## Immunization

<b>GHSA Goal</b>	<b>GHSA Objective</b>	<b>GHSA 5-Year Target</b>		
Prevent Avoidable Epidemics	Reducing the number and magnitude of infectious disease outbreaks.	A functioning national vaccine delivery system – with nationwide reach, effective distributions, access for marginalized populations, adequate cold chain, and ongoing quality control – that is able to respond to new disease threats.		
	<b>Key Milestones</b>	<b>US Government Activity</b>	<b>Host Government Activity</b>	<b>Other Activity (e.g. NGO, other governments, multilaterals)</b>
Year 1	<ol style="list-style-type: none"> <li>1. Planning with MOH and WHO for routine and supplemental vaccine campaign for 2017 completed.</li> <li>2. Quality of Integrated Disease Surveillance and Response (IDSR) framework and other surveillance data to monitor risk for VPDs evaluated</li> <li>3. Cold chain for vaccine transport and storage improved</li> <li>4. Polio-free status with certification standard Acute Flaccid Paralysis (AFP) surveillance indicators achieved.</li> </ol>	CDC – Technical Assistance	Manage and implement routine immunization while assessing need for supplemental campaigns.	WHO and UNICEF to focus on cold and supply chain issues related to vaccines. GAVI
Year 2	<ol style="list-style-type: none"> <li>1. Planning with MOH and WHO for routine and supplemental vaccine campaign for 2018 completed.</li> <li>2. IDSR and other surveillance data used to assess and monitor risk for VPDs</li> </ol>	CDC – Technical Assistance	Manage and implement routine immunization while assessing need for supplemental campaigns.	WHO and UNICEF to focus on cold and supply chain issues related to vaccines. GAVI
Year 3	<ol style="list-style-type: none"> <li>1. Planning with MOH and WHO for routine and supplemental vaccine campaign for 2019 completed.</li> <li>2. IDSR and other surveillance used data to assess and monitor risk for Vaccine Preventable Diseases (VPDs)</li> </ol>	CDC – Technical Assistance	Manage and implement routine immunization while assessing need for supplemental campaigns.	WHO and UNICEF to focus on cold and supply chain issues related to vaccines. GAVI
Year 4	<ol style="list-style-type: none"> <li>1. Planning with MOH and WHO for routine and supplemental vaccine campaign for 2020 completed.</li> </ol>	CDC – Technical Assistance	Manage and implement routine immunization while assessing need for supplemental campaigns.	WHO and UNICEF to focus on cold and supply chain issues related to vaccines. GAVI

	2. IDSR and other surveillance data used to assess and monitor risk for VPDs			
Year 5	1. Planning with MOH and WHO for routine and supplemental vaccine campaign for 2021 completed. 2. IDSR and other surveillance data used to assess and monitor risk for VPDs	CDC – Technical Assistance	Manage and implement routine immunization while assessing need for supplemental campaigns.	WHO and UNICEF to focus on cold and supply chain issues related to vaccines. GAVI

## DETECT

### Laboratory Systems

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Detect Threats Early	Developing and deploying novel diagnostics and strengthen laboratory systems.	Real-time biosurveillance with a national laboratory system and effective modern point-of-care and laboratory-based diagnostics.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>1. Mapping of multi-sectoral laboratory capacity including pathogen testing completed</li> <li>2. Priority pathogens and diseases identified (including zoonotic diseases) and testing capacity improved</li> <li>3. Multi-sectoral nationwide Laboratory strategic plan and policy established including plans for quality systems management and best practices</li> <li>4. Capacity of laboratory personnel strengthened through targeted trainings and mentoring</li> <li>5. Government has capability to conduct diagnostics for Ebola and other zoonotic pathogens in animals and humans</li> </ol>	<p>CDC</p> <p>USAID - EPT-2 Program</p> <p>DoD CTR-CBEP</p>	<p>MoHS</p> <p>MAFFS</p> <p>Universities</p>	<p>World Bank REDISSE Project</p> <p>China</p> <p>DFID/PH England</p> <p>WHO</p> <p>APHL</p> <p>ASLM</p> <p>eHealth</p> <p>FAO</p> <p>Global Fund- TB, Malaria, HIV</p>
Year 2	<ol style="list-style-type: none"> <li>1. Nationwide tiered laboratory network needs identified in animal and human health labs</li> <li>2. National laboratory strategic plan and policy reviewed/updated with action items for broad-based capacity building</li> <li>3. Lab quality management system (QMS) and Quality Assurance plan in place</li> </ol>	<p>CDC</p> <p>USAID - EPT-2 Program</p> <p>DoD CTR-CBEP</p>	<p>MoHS</p> <p>MAFFS</p> <p>Universities</p>	<p>World Bank REDISSE Project</p> <p>China</p> <p>DFID/PH England</p> <p>WHO</p> <p>FAO</p> <p>Global Fund- TB, Malaria, HIV</p>



	<ol style="list-style-type: none"> <li>4. Diagnostic testing implemented and optimized for viral pathogens in wildlife, livestock, and humans</li> <li>5. National Public Health Institute strengthened and capacity at the Teko Animal Health Laboratory improved</li> </ol>			
Year 3	<ol style="list-style-type: none"> <li>1. Nationwide laboratory network formalized and established for human health</li> <li>2. National One Health laboratory strategic plan and policy operationalized</li> </ol>	<p style="text-align: center;">CDC</p> <p style="text-align: center;">USAID - EPT-2 Program</p> <p style="text-align: center;">DoD CTR-CBEP</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">MAFFS</p> <p style="text-align: center;">Universities</p>	<p style="text-align: center;">World Bank REDISSE Project China DFID/PH England WHO FAO Global Fund- TB, Malaria, HIV</p>
Year 4	<ol style="list-style-type: none"> <li>1. Strengthened laboratory workforce through provision of technical and management laboratory training</li> <li>2. Laboratory Information Management System (LIMS) established</li> </ol>	<p style="text-align: center;">CDC</p> <p style="text-align: center;">USAID - EPT-2 Program</p> <p style="text-align: center;">DoD CTR-CBEP</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">MAFFS</p> <p style="text-align: center;">Universities</p>	<p style="text-align: center;">World Bank REDISSE Project China DFID/PH England WHO FAO Global Fund- TB, Malaria, HIV</p>
Year 5	<ol style="list-style-type: none"> <li>1. Accreditation/certification of Regional laboratories in-process</li> <li>2. Evidence of increased capacity in laboratory staff in risk characterization and bioinformatics</li> </ol>	<p style="text-align: center;">CDC</p> <p style="text-align: center;">USAID - EPT-2 Program</p> <p style="text-align: center;">DoD CTR-CBEP</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">MAFFS</p> <p style="text-align: center;">Universities</p>	<p style="text-align: center;">World Bank REDISSE Project China DFID/PH England WHO FAO Global Fund- TB, Malaria, HIV</p>

## Real-Time Surveillance

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Detect Threats Early	Launch, strengthen and link global networks for real-time surveillance through investments in IDSR-based and IHR compliant national surveillance strategies and promotion of data sharing based on international agreements.	Strengthened foundational indicator- and event-based surveillance systems that are able to detect events of significance for public health, animal health and health security; improved communication and collaboration across sectors and between sub-national, national and international levels of authority regarding surveillance of events of public health significance and advancement in fulfilling the core capacity requirements for surveillance in accordance with the IHR and the OIE standards		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>1. MoHS supported in development of a national surveillance strategy</li> <li>2. IDSR for selected diseases established and maintained at all levels</li> <li>3. Electronic tool for IDSR developed</li> <li>4. Cross border collaboration for prevention and control of EVD and other epidemic prone diseases strengthened</li> <li>5. Capacities and gaps in current animal health surveillance systems identified</li> <li>6. Community event based surveillance system plans finalized</li> <li>7. Surveillance data reported from at least 80% of districts for priority IDSR diseases</li> </ol>	<p style="text-align: center;">CDC</p> <p style="text-align: center;">USAID - EPT-2 Program and Global Health Development Lab</p> <p style="text-align: center;">DoD-USAMRID</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">MAFFS</p>	<p style="text-align: center;">DFID WHO FAO IOM</p>
Year 2	<ol style="list-style-type: none"> <li>1. Additional priority diseases added to IDSR strategy</li> <li>2. Surveillance data reported from at least 80% of districts for year 1 &amp; 2 priority IDSR diseases</li> <li>3. Medical and surveillance officers trained in IDSR in 40% of the districts</li> <li>4. Community event based surveillance system implemented in 50% districts</li> <li>5. Public health data exchange/sharing agreement between Sierra Leone and</li> </ol>	<p style="text-align: center;">CDC</p> <p style="text-align: center;">USAID - EPT-2 Program</p> <p style="text-align: center;">DoD-USAMRID</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">MAFFS</p>	<p style="text-align: center;">DFID WHO FAO IOM</p>

	<p>neighboring countries developed and implemented for cross-border information sharing</p> <p>6. Plan for strengthening animal health surveillance implemented at select target facilities developed</p>			
Year 3	<p>1. Hospital and laboratory surveillance data integrated in routine reporting system</p> <p>2. Medical and surveillance officers trained in IDSR in 60% of the health districts</p> <p>3. In-service surveillance teams trained and deployed in accordance with One Health surveillance strategy</p> <p>4. Community event based surveillance rolled out country-wide</p> <p>5. Port of Entry (seaports and select major land borders) assessed for IHR compliance</p> <p>6. Surveillance for priority healthcare-associated infections implemented in all government hospitals</p>	<p>CDC</p> <p>USAID - EPT-2 Program</p>	<p>MoHS</p> <p>MAFFS</p>	<p>DFID</p> <p>WHO</p> <p>FAO</p> <p>IOM</p>
Year 4	<p>1. Zoonotic diseases relevant to human health integrated into routine surveillance</p> <p>2. Medical and surveillance officers trained in IDSR in 80% of the health districts</p>	<p>CDC</p> <p>USAID - EPT-2 Program</p>	<p>MoHS</p> <p>MAFFS</p>	<p>DFID</p> <p>WHO</p> <p>FAO</p> <p>IOM</p>
Year 5	<p>1. Sustained One Health surveillance</p> <p>2. Medical and surveillance officers trained in IDSR in 100% of the health districts</p>	<p>CDC</p> <p>USAID - EPT-2 Program</p>	<p>MoHS</p> <p>MAFFS</p>	<p>DFID</p> <p>WHO</p> <p>FAO</p> <p>IOM</p>

## Information Systems

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Detect Threats Early	Linked Data Systems - Analyze and link data toward real-time biosurveillance	Establish a national health information systems architecture of interoperable linked data systems across health domains from local to national levels of the health system in support of a national IDSR-based and IHR compliant surveillance strategy. Promote the timely availability and use of data for disease surveillance, outbreak detection and response nationally and internationally through data integration and exchange.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>National information systems architecture, standards, and interoperability technical working group(s) and governance established</li> <li>National surveillance data warehouse platform governed by MoHS for data integration from systems across the national human and animal health systems established</li> <li>Workshops and trainings on IDSR conducted</li> </ol>	<p>CDC</p> <p>USAID</p>	<p>MoHS</p>	<p>WHO</p> <p>APHL</p> <p>FAO</p>
Year 2	<ol style="list-style-type: none"> <li>National surveillance data warehouse platform governed by MoHS for data integration from systems across the national human and animal health systems established.</li> <li>Policy, strategy, guidance, and technical documents identifying standards for and current status/capacity of national architecture, systems of unique identifiers, health system registries required for system interoperability, information systems, and data for promoting and enforcing compliance to standards supporting systems interoperability and data exchange and use developed</li> </ol>	<p>CDC</p> <p>USAID</p>	<p>MoHS</p>	<p>WHO</p> <p>FAO</p>

	3. National strategy for developing robust domain-specific and linked systems of unique identifiers developed and implemented.			
Year 3	1. Information systems, reporting, and surveillance system for data quality, use and compliance to systems interoperability and data exchange standards evaluated.	CDC	MoHS	WHO FAO
Year 4	1. Reporting/surveillance requirements revised according to evaluation results	CDC	MoHS	WHO FAO
Year 5	1. Information systems revised based on evaluations and assessments	CDC	MoHS	WHO FAO

## Workforce Development

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Detect Threats Early	Training and deploying an effective biosurveillance workforce.	A workforce including physicians, veterinarians, biostatisticians, laboratory scientists, and at least 1 trained field epidemiologist per 200,000 population, who can systematically cooperate to meet relevant IHR and Performance of Veterinary Services (PVS) core competencies.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>1. Frontline Field Epidemiology Training Program (FETP) established</li> <li>2. At least two trainee cohorts graduated from FETP Frontline</li> <li>3. Shared vision among national leadership and key stakeholders for Animal Health workforce for early detection of possible zoonotic disease threats</li> <li>4. In-service training opportunities related to One Health surveillance, research, and lab testing identified</li> <li>5. Laboratory technicians able to safely and accurately conduct Ebola diagnostics in a limited number of locations on a limited number of Ebola samples with some oversight provided by outside subject matter experts</li> </ol>	<p style="text-align: center;">CDC</p> <p style="text-align: center;">USAID - EPT-2 Program</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">MAFFS</p>	<p style="text-align: center;">DFID World Bank WHO FAO</p>
Year 2	<ol style="list-style-type: none"> <li>1. Training plan to incorporate public health laboratorians and veterinarians in tiered FETP strategy completed</li> <li>2. Workforce needs assessment completed and TA provided in the development of a multi-sectoral workforce development plan</li> <li>3. Number of government laboratory technicians able to train and mentor Sierra Leone staff in laboratory diagnostics increased</li> </ol>	<p style="text-align: center;">CDC</p> <p style="text-align: center;">USAID - EPT-2 Program</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">MAFFS</p>	<p style="text-align: center;">DFID World Bank WHO FAO</p>

	<p>4. Number of government staff able to conduct differential diagnosis increased</p> <p>5. Number of government personnel capable of safely and securely transporting samples potentially containing pathogens of security concern increased</p>			
Year 3	1. In-service training opportunities for public health workers on surveillance, research, and laboratory testing methods established	<p>CDC</p> <p>USAID - EPT-2 Program</p>	<p>MoHS</p> <p>MAFFS</p>	<p>DFID</p> <p>World Bank</p> <p>WHO</p> <p>FAO</p>
Year 4	1. Public Health Institute established (3 months training, long term training, MPH program) and a career pathway for graduates developed	<p>CDC</p> <p>USAID - EPT-2 Program</p>	<p>MoHS</p> <p>MAFFS</p>	<p>DFID</p> <p>World Bank</p> <p>WHO</p> <p>FAO</p>
Year 5	1. One Health workforce has been trained in accordance with national priority disease "detection" needs.	<p>CDC</p> <p>USAID - EPT-2 Program</p>	<p>MoHS</p> <p>MAFFS</p>	<p>DFID</p> <p>World Bank</p> <p>WHO</p> <p>FAO</p>

## Reporting

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Detect Threats Early	Compliance with global disease reporting requirements	Timely and accurate disease reporting according to IHR requirements and consistent with FAO and OIE.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>Plan for an electronic real-time surveillance system for MoHS finalized</li> <li>Assessments of general IHR and OIE capacity to establish baseline levels reviewed</li> <li>Plan to address gaps in two-way reporting of diagnostic results from humans, wildlife, and livestock, developed</li> </ol>	<p>CDC</p> <p>USAID</p>	<p>MoHS</p> <p>MAFFS</p>	<p>DFID</p> <p>WHO</p> <p>FAO</p>
Year 2	<ol style="list-style-type: none"> <li>Interoperable electronic real-time surveillance system for MoHS piloted</li> <li>Plan of action established for timely and accurate disease reporting based on IHR and OIE evaluation reports</li> <li>Protocols that strengthen two-way reporting of diagnostic results in humans, wildlife, and livestock, developed</li> </ol>	<p>CDC</p> <p>USAID</p>	<p>MoHS</p> <p>MAFFS</p>	<p>DFID</p> <p>WHO</p> <p>FAO</p>
Year 3	<ol style="list-style-type: none"> <li>Interoperable electronic real-time surveillance system for MoHS evaluated (e.g., data quality, accuracy, completeness, timeliness, etc.)</li> <li>Evaluation of reporting requirements at district and national level established</li> </ol>	<p>CDC</p> <p>USAID</p>	<p>MoHS</p> <p>MAFFS</p>	<p>DFID</p> <p>WHO</p> <p>FAO</p>



Year 4	<ol style="list-style-type: none"> <li>1. Interoperable real-time surveillance system expanded to include animal health</li> <li>2. Data exchange between various national data sources that contribute to public health reporting requirements (i.e., IHR, PVS) established</li> </ol>	<p style="text-align: center;">CDC</p> <p style="text-align: center;">USAID</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">MAFFS</p>	<p style="text-align: center;">DFID WHO FAO</p>
Year 5	<ol style="list-style-type: none"> <li>1. Integrated real time surveillance system piloted to include animal and human health</li> <li>2. Reporting protocols and requirements updated/revised and implemented based on current best practices and IHR to improve data quality (timeliness, completeness, accuracy)</li> </ol>	<p style="text-align: center;">CDC</p> <p style="text-align: center;">USAID</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">MAFFS</p>	<p style="text-align: center;">DFID UNICEF WHO FAO</p>

## RESPOND

### Emergency Operations Centers

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Respond Rapidly and Effectively	Developing an interconnected global network of EOCs and multi-sectoral response to biological incidents.	Every country will have a public health Emergency Operations Center (EOC) functioning according to minimum common standards; maintaining trained, functioning, multi-sectoral rapid response teams (RRTs) and “real-time” biosurveillance laboratory networks and information systems; and trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>Emergency management regulations assessed and revised to provide national legal framework for emergency response.</li> <li>Emergency operations workforce assessed and trained</li> <li>Emergency operations plans and procedures established</li> <li>EOC infrastructure established and/or strengthened</li> <li>Successful transition of Public Health National Emergency Operations Center (PH NEOC) from Ministry of Defense to MoHS, including effectively managing a response</li> </ol>	<p>CDC – Technical Assistance with partners funded through cooperative agreements</p> <p>USAID – Technical Assistance/Animal health</p> <p>DoD AFRICOM – African Partner Outbreak Response Alliance and Disaster Preparedness Program</p>	<p>MoHS – Policy for EOC authority; core staff and training for EOC</p> <p>MAFFS</p>	<p>WHO</p> <p>DFID/PH England</p> <p>IOM</p>
Year 2	<ol style="list-style-type: none"> <li>Emergency response simulations conducted and evaluated, including with experiential learning activities</li> <li>Additional training in Emergency Management for key staff/leadership</li> <li>Actual responses (if any) evaluated in after-action analysis</li> </ol>	<p>CDC – Technical Assistance with partners funded through cooperative agreements</p> <p>USAID – Technical Assistance/Animal health</p>	<p>MoHS</p> <p>MAFSS</p>	
Year 3	<ol style="list-style-type: none"> <li>Improved integration of surveillance, lab and animal health data into the EOC</li> </ol>	<p>CDC – Technical Assistance with partners funded through cooperative agreements</p>	<p>MoHS</p> <p>MAFSS</p>	

	<ol style="list-style-type: none"> <li>2. Further revisions of EOC standards and/or regulations made as required</li> <li>3. Ongoing infrastructural assessment and sustainable support identified</li> </ol>	USAID – Technical Assistance/Animal health		
Year 4	<ol style="list-style-type: none"> <li>1. Improved ability of EOC staff to evaluate laboratory and surveillance data for more timely emergency response</li> <li>2. Further revisions of EOC standards and/or regulations made as required</li> <li>3. Ongoing infrastructural assessment and sustainable support identified</li> </ol>	<p>CDC – Technical Assistance with partners funded through cooperative agreements</p> <p>USAID – Technical Assistance/Animal health</p>	<p>MoHS</p> <p>MAFSS</p>	
Year 5	<ol style="list-style-type: none"> <li>1. Established Emergency Operations Center with trained staff that can activate within 2 hours and can compile and analyze data from laboratory and epidemiological surveillance sources and systems to generate information that informs MoHS decision makers during outbreaks and other public health emergencies</li> <li>2. Further revisions of EOC standards and/or regulations made as required</li> <li>3. Ongoing infrastructural assessment and sustainable support identified</li> </ol>	<p>CDC – Technical Assistance with partners funded through cooperative agreements</p> <p>USAID – Technical Assistance/Animal health</p>	<p>MoHS</p> <p>MAFSS</p>	

## Linking PH and Law Enforcement

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Respond Rapidly and Effectively	Developing an interconnected global network of EOCs and multi-sectoral response to biological incidents: Promote establishment of public health EM programs, including EOCs; trained, functioning, multi-sectoral rapid response teams, with access to a real-time information system; and capacity to attribute the source of an outbreak.	In the event of a biological event of suspected or confirmed deliberate origin, a country will be able to conduct a rapid, multi-sectoral response, including the capacity to link public health and law enforcement, and to provide and/or request effective and timely international assistance, including to investigate alleged use events.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>1. Initial assessment of linkage between public health and law enforcement completed</li> <li>2. Public health curriculum for law enforcement officers located at borders and in border communities strengthened in accordance with IDSR priority syndromes</li> <li>3. Capacity of health and security personnel to detect and respond to public health events of concern across borders strengthened</li> <li>4. Improved law enforcement capacity to detect and prevent biological incidents</li> <li>5. Legal framework to support response to public health threats developed</li> </ol>	<p style="text-align: center;">DoD/DAO</p> <p style="text-align: center;">CDC</p> <p style="text-align: center;">DOS</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">Office of National Security (ONS)</p> <p style="text-align: center;">MOD</p>	<p style="text-align: center;">WHO</p> <p style="text-align: center;">IOM</p> <p style="text-align: center;">DFID</p> <p style="text-align: center;">Louisiana State University</p>
Year 2	<ol style="list-style-type: none"> <li>1. Referral and follow up procedures of Port health in place at the public health presence of designated ports of entry; PoE staff trained on procedures</li> </ol>	<p style="text-align: center;">DoD/DAO</p> <p style="text-align: center;">CDC</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">ONS</p> <p style="text-align: center;">MOD</p>	<p style="text-align: center;">WHO</p> <p style="text-align: center;">IOM</p> <p style="text-align: center;">DFID</p>
Year 3	<ol style="list-style-type: none"> <li>1. 75% of existing law enforcement officers located at borders and 90% of onboarding officers serving at key border crossings</li> </ol>	<p style="text-align: center;">DoD/DAO</p> <p style="text-align: center;">CDC</p>	<p style="text-align: center;">MoHS</p> <p style="text-align: center;">ONS</p> <p style="text-align: center;">MOD</p>	<p style="text-align: center;">WHO</p> <p style="text-align: center;">IOM</p> <p style="text-align: center;">DFID</p>

	trained in the detection of signs and symptoms of the IDSR priority syndromes			
Year 4	1. Plans and procedures at PoE tested, validated, and improved.	DoD/DAO CDC	MoHS ONS MOD	WHO IOM DFID
Year 5	1. Multi-sectoral response to a biological event of suspected or confirmed deliberate origin demonstrated	DoD/DAO CDC USAID	MoHS ONS MOD MAFFS	WHO IOM DFID FAO

## Medical Countermeasures and Personnel Deployment

GHSA Goal	GHSA Objective	GHSA 5-Year Target		
Respond Rapidly and Effectively	Improving global access to medical and non-medical countermeasures during health emergencies.	A national framework for transferring (sending and receiving) medical countermeasures and public health and medical personnel among international partners during public health emergencies.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ol style="list-style-type: none"> <li>Key agencies involved in MCM importation, deployment and regulatory approvals for use during public health emergencies identified</li> <li>Existing policies/frameworks for receipt, use and approval of medical countermeasures and receipt/deployment of medical personnel assessed</li> <li>National preparedness plans for use of non-medical measures involving zoonotic disease (available through regional stockpiles) developed</li> </ol>	<p>CDC</p> <p>USAID</p>	<p>MoHS</p> <p>MAFFS</p>	<p>WHO</p> <p>FAO</p>
Year 2	<ol style="list-style-type: none"> <li>Policy development for MCM importation, deployment and regulatory approvals for use during public health emergencies initiated</li> <li>Inventory of existing workforce and relevant resources (medical and non-medical countermeasures) conducted</li> </ol>	<p>CDC</p> <p>USAID</p>	<p>MoHS</p> <p>MAFFS</p>	<p>WHO</p> <p>FAO</p>
Year 3	<ol style="list-style-type: none"> <li>National policies for MCM during public health emergencies established by key agencies</li> <li>Regional agreements for rapid cross border deployment of personnel and material drafted</li> </ol>	<p>CDC</p> <p>USAID</p>	<p>MoHS</p> <p>MAFFS</p>	<p>WHO</p> <p>FAO</p>
Year 4	<ol style="list-style-type: none"> <li>Plans and procedures for MCM importation, deployment and regulatory</li> </ol>	<p>CDC</p>	<p>MoHS</p>	<p>WHO</p>

	approvals for use during public health emergencies tested and validated	USAID	MAFFS	FAO
Year 5	<ol style="list-style-type: none"> <li>1. National framework for sending and receiving medical countermeasures and public health and medical personnel from and to international partners during health emergencies established</li> <li>2. Regional agreements for rapid cross border deployment of personnel and material finalized</li> <li>3. Capacities and skills required for implementation of national preparedness plans for use of non-medical countermeasures involving zoonotic disease (available through regional stockpiles) in place</li> </ol>	<p>CDC</p> <p>USAID</p>	<p>MoHS</p> <p>MAFFS</p>	<p>WHO</p> <p>FAO</p>