

**GLOBAL HEALTH SECURITY AGENDA  
ROADMAP  
FOR ETHIOPIA**

*March 9, 2016*

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## Overview and Context

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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.

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## **Elements of the GHSA Roadmap**

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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 Ethiopia.

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## **Global Health Security Agenda Overarching Activities**

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

- Ethiopia'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

## Organizational Acronyms

CTR-CBEP	Cooperative Threat Reduction-Cooperative Biological Engagement Program
CDC	Centers for Disease Control and Prevention
DoD	Department of Defense
EFMHACA	Food, Medicine and Health Care Administration and Control Authority
EPHI	Ethiopian Public Health Institute
EWCA	Ethiopian Wildlife Conservation Authority
FMOLFRD	Federal Ministry of Livestock and Fisheries Resources Development; includes the agencies of NAHDIC and NVI
FMOH	Federal Ministry of Health; includes the agencies of EPHI, EFMHACA, and Regional Health Bureaus
Gavi	a global Vaccine Alliance (international organization)
MOND	Ministry of National Defence
NAHDIC	National Animal Health Diagnostic and Investigation Center
NVI	National Veterinary Institute
PHEM	Public Health Emergency Management unit at EPHI
USAID	US Agency for International Development
USDA	US Department of Agriculture

## Prevent

### Antimicrobial Resistance (AMR)

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>1. National AMR advisory committee updated and strengthened</li> <li>2. National AMR strategy revised and endorsed for implementation, and previous AMR stewardship program updated</li> <li>3. AMR surveillance capacity assessed</li> <li>4. Training program for diagnostics and reporting of AMR initiated at national and regional levels</li> <li>5. AMR surveillance established at pilot or representative regional and referral hospitals</li> </ol>	CDC: Technical assistance and support for training USDA: In-kind technical consultations, as appropriate	FMOLFRD: Advise and coordinate FMOH: Lead planning effort with hospital and regional health laboratories		

Year 2	<ol style="list-style-type: none"> <li>1. Pre- and post-marketing Quality Assurance (QA) program/capacity developed at national and regional level (for human and animal)</li> <li>2. 40% of designated hospitals have AMR laboratory diagnostic capacity</li> <li>3. AMR surveillance strengthened at national and regional levels, including for TB/HIV</li> <li>4. Programs developed for prudent use of antimicrobials and safe practices in intensive livestock production systems</li> </ol>	<p>CDC: Technical assistance          USAID: Technical assistance          USDA: In-kind technical consultations, as appropriate; remote training module on use of animal antibiotics</p>	<p>FMOLFRD: Endorse and implement strategy          FMOH: Endorse and implement strategy, and report diagnostic capacity</p>	
Year 3	<ol style="list-style-type: none"> <li>1. Infection prevention and control training initiated in 50% of designated hospitals</li> <li>2. 70% of designated hospitals have AMR laboratory diagnostic capacity</li> <li>3. Twinning agreement established with other country in collaborative effort to combat AMR resistance</li> </ol>	<p>CDC: Technical assistance and project funding for diagnostic equipment          USAID: Technical assistance</p>	<p>FMOH: Support training, facilitate agreement, and report diagnostic capacity</p>	
Year 4	<ol style="list-style-type: none"> <li>1. All designated/selected hospitals/laboratories have enrolled in the national AMR surveillance system/network</li> <li>2. Infection prevention and control training initiated in 100% of designated hospitals</li> <li>3. 100% of designated hospitals have AMR laboratory diagnostic capacity</li> <li>4. Awareness of AMR increased at all hospitals</li> </ol>	<p>CDC: Technical assistance and support for training          USAID: Technical assistance</p>	<p>FMOH: Support training, and report diagnostic capacity</p>	
Year 5	<ol style="list-style-type: none"> <li>1. Assessment and evaluation of the impact of AMR policy and strategy conducted</li> <li>2. AMR stewardship program fully implemented</li> </ol>	<p>CDC: Technical assistance          USAID: Technical assistance          USDA: In-kind technical consultations, as appropriate</p>	<p>FMOLFRD: Advise on evaluation and stewardship program          FMOH: Advise on evaluation and lead stewardship program</p>	

## Zoonotic Diseases

		US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
<b>GHSA Goal</b>	<b>GHSA Objective</b>	<b>GHSA 5-Year Target</b>		
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. <b>Key Milestones</b>	Adopted measured behaviors, policies and/or practices that minimize the spillover of zoonotic diseases from lower animals into human populations.		
	<b>Key Milestones</b>			FAO, Swedish International Development Agency, Norwegian Agency for Development Cooperation, One Health Central and Eastern Africa (OHCEA)
Year 1	<ol style="list-style-type: none"> <li>One Health Coordination Taskforce re-established</li> <li>Five zoonotic diseases identified and prioritized in collaboration with FMOH, FMOLFRD, and EWCA</li> <li>Training curriculum developed for veterinary FETP track</li> </ol>	CDC: Technical assistance USAID: Technical assistance USDA: In-kind technical consultations, as appropriate, and technical assistance	EWCA: Contribute to prioritization, taskforce, and curriculum FMOLFRD: Contribute to prioritization, taskforce, and curriculum FMOH: Contribute to prioritization, taskforce, and curriculum	
Year 2	<ol style="list-style-type: none"> <li>Diagnostic capacity strengthened for priority diseases at human and animal laboratories</li> <li>Surveillance and report sharing initiated for priority diseases</li> <li>One Health institutionalized and National One Health legislation developed</li> </ol>	CDC: Technical assistance and support for laboratory & surveillance infrastructure USAID: Technical assistance USDA: In-kind technical consultations, as appropriate, and technical assistance DoD CTR-CBEP: Technical Assistance	EWCA: Support diagnostic capacity, data sharing FMOLFRD: Support diagnostic capacity, data sharing FMOH: Support diagnostic capacity, data sharing	

Year 3	<ol style="list-style-type: none"> <li>1. National control strategies for prioritized zoonotic diseases developed</li> <li>2. 4 regional surveillance centers established for wildlife and domestic animals based at national parks</li> </ol>	<p>CDC: Technical assistance and support for treatment interventions  USAID: Technical assistance  USDA: In-kind technical consultations, as appropriate</p>	<p>EWCA: Develop wildlife surveillance and support control strategies  FMOLFRD: Support control strategies  FMOH: Support control strategies</p>	
Year 4	<ol style="list-style-type: none"> <li>1. Progressive control programs for three selected priority diseases started</li> </ol>	<p>CDC: Technical assistance and support for training and infrastructure  USAID: Technical assistance  USDA: In-kind technical consultations, as appropriate</p>	<p>EWCA: Support control strategies  FMOLFRD: Support control strategies  FMOH: Support control strategies</p>	
Year 5	<ol style="list-style-type: none"> <li>1. Implementation of control programs started for all five priority zoonotic diseases</li> </ol>	<p>CDC: Technical assistance and support for training and infrastructure  USAID: Technical assistance  USDA: In-kind technical consultations, as appropriate</p>	<p>EWCA: Support control strategies and report effectiveness  FMOLFRD: Support control strategies and report effectiveness  FMOH: Support control strategies and report effectiveness</p>	

## Biosafety & Biosecurity (BSS)

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>National multi-sector team established for biosafety and biosecurity</li> <li>Ethiopia's select agent and toxins (SAT) list drafted and published</li> <li>Biosecurity legislation and guidelines reviewed and developed</li> <li>Strengthened Biosafety and Biosecurity Department</li> <li>Expand training opportunities for animal and human health labs on BSS</li> </ol>	DoD CTR-CBEP: Advisory and technical assistance CDC: Technical assistance and support for training USAID: Technical assistance USDA: Technical assistance	FMOLFRD: Support BSS team, advise on SAT list and BSS guidelines FMOH: Support BSS team, advise on SAT list and BSS guidelines, strengthen BSS department	
Year 2	<ol style="list-style-type: none"> <li>Biosecurity legislation and guidelines endorsed</li> <li>Inventory of facilities housing or with potential to house dangerous pathogens created</li> <li>Licensing, certification, registration and tracking of dangerous pathogens established</li> </ol>	DoD CTR-CBEP: Advisory and technical assistance CDC: Technical assistance and support for training and infrastructure USAID: Technical assistance	FMOLFRD: Endorse guidelines, support inventory and dangerous pathogens policy FMOH: Endorse guidelines, inventory labs, and implement dangerous pathogens policy	
Year 3	<ol style="list-style-type: none"> <li>Priority human health labs (Biosafety Level [BSL] 2+ and BSL3) upgraded with biosecurity measures</li> </ol>	DoD CTR-CBEP: Technical assistance and infrastructure support	FMOH: Upgrade labs, certify cabinets, and identify disposal facility	

	<ol style="list-style-type: none"> <li>2. 50% of biosafety cabinets certified locally</li> <li>3. Facility identified for disposal of dangerous pathogens</li> <li>4. Technologies that can replace culture methods identified</li> </ol>	<p>CDC: Technical assistance and support for training  USAID: Technical assistance</p>		
Year 4	<ol style="list-style-type: none"> <li>1. Team to administer and enforce BSS oversight for human and veterinary labs operationalized</li> <li>2. 80% of biosafety cabinets certified locally</li> <li>3. 80% of designated health, vet, and environment labs have an identified and certified biosafety/biosecurity officer (Not all health, vet, and environmental labs may need a BSS officer because their biosafety level can be managed by current lab technicians. Criteria to designate labs will be developed.)</li> <li>4. Previously identified (Year 4) technologies to replace cultures are implemented</li> </ol>	<p>DoD CTR-CBEP: Advisory and technical support specifically targeting identification of technologies that can replace culture methods  CDC: Technical assistance and support for training  USAID: Technical assistance</p>	<p>FMOLFRD: Support development of BSS oversight team, identify BSS officers  FMOH: Support development of BSS oversight team, identify BSS officers, certify cabinets, identify technologies</p>	
Year 5	<ol style="list-style-type: none"> <li>1. 100% of biosafety cabinets certified locally</li> <li>2. 100% of designated health, vet, and environment labs have an identified and certified biosafety/biosecurity officer</li> </ol>	<p>DoD CTR-CBEP: Advisory and technical support; equipment and training support  CDC: Technical assistance and support for training  USAID: Technical assistance</p>	<p>FMOLFRD: Identify BSS officers  FMOH: Certify cabinets, identify BSS officers, replace culture methods</p>	

## Immunization

GHSA Goal		GHSA Objective	GHSA 5-Year Target		
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>	
				Gates: new vaccines, vaccine delivery, new delivery technologies and approaches Gavi: support for immunization service, injection safety, new vaccine introduction, and health system strengthening Rotary: polio immunization UNICEF: supplies and logistics WHO: Expanded Program on Immunization and Polio Program OIE: support to establish cold chains and depots especially for rabies vaccine delivery and storage	
Year 1	<ol style="list-style-type: none"> <li>1. Comprehensive Multiyear Plan (cMYP) finalized, including identification of priority vaccine-preventable diseases</li> <li>2. Vaccine-preventable diseases response resources are mapped</li> <li>3. Implementation for Routine Immunization Improvement Plan (RIIP) for Measles evaluated</li> <li>4. Rabies vaccine production center established at National Veterinary Institute</li> </ol>	CDC: Provide technical assistance on planning USAID: Support for routine EPI and supply chain	FMOLFRD: Establish rabies vaccine production center FMOH: Finalize multi-year plan, map VPD resources, evaluate RIIP for measles		

Year 2	<ol style="list-style-type: none"> <li>1. Yellow fever vaccination campaign implemented in priority regions/zones</li> <li>2. EPI coverage (MOH) report linked to validating surveillance data source(s) at PHEM</li> <li>3. Depot system for management and distribution of rabies vaccine established (may apply to other vaccines)</li> </ol>	<p>CDC: Provide technical assistance on integrating data systems  USAID: Support for routine EPI and supply chain</p>	<p>FMOLFRD: Establish depot system for rabies  FMOH: Lead yellow fever vaccination campaign, link EPI coverage to surveillance data</p>	
Year 3	<ol style="list-style-type: none"> <li>1. 88% vaccine coverage for measles reported</li> <li>2. 85% vaccine coverage for yellow fever reported</li> <li>3. Supply chain quality assessed</li> </ol>	<p>CDC: Provide technical assistance for operations  USAID: Support for routine EPI and supply chain</p>	<p>FMOLFRD: Participate in supply chain assessment  FMOH: Lead measles and yellow fever vaccination campaigns, participate in quality of supply chain assessment</p>	
Year 4	<ol style="list-style-type: none"> <li>1. Less than 25% cold chain failure as heat exposed (above 10°C) reported</li> </ol>	<p>CDC: Provide technical assistance for operations  USAID: Support for routine EPI and supply chain</p>	<p>FMOH: Lead quality assessment of the cold chain</p>	
Year 5	<ol style="list-style-type: none"> <li>1. 95% vaccine coverage for measles reported</li> <li>2. 90% vaccine coverage for yellow fever reported</li> <li>3. Annual measles incidence as &lt;5 cases per million reported</li> <li>4. 70% coverage of rabies vaccine for dogs reported in selected communities</li> </ol>	<p>CDC: Technical assistance on reporting  USAID: Support for routine EPI and supply chain</p>	<p>FMOLFRD: Lead rabies vaccine coverage in dogs  FMOH: Lead measles and yellow fever vaccination campaign</p>	

## 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)	
				WHO: Malaria and Tuberculosis programs	
Year 1	<ol style="list-style-type: none"> <li>1. Architectural and engineering plans for the national reference lab developed</li> <li>2. Framework established for sample referral system (including specimen collection and transport) and data sharing within and across health, regulatory and veterinary labs</li> <li>3. Capacity of EPHI, EFMHACA and veterinary reference lab (NAHDIC) strengthened to meet international regulations</li> <li>4. Develop plan of diagnostic upgrades in prioritized labs, including regional animal health diagnostic labs.</li> </ol>	<p>DoD CTR-CBEP: Technical assistance for design planning</p> <p>CDC: Technical assistance and support for data integration</p> <p>USAID: Technical assistance</p>	<p>FMOLFRD: Support data/sample sharing within ministries, support capacity building of NAHDIC</p> <p>FMOH: Support plans for NRL, Support data/sample sharing within ministries, support capacity building of EPHI and EFMHACA</p>		
Year 2	<ol style="list-style-type: none"> <li>1. Centralized media production met needs of regional health labs</li> <li>2. Microbiology Proficiency Test (PT) provided to 14 regional health labs with 85% passing</li> <li>3. All regional labs electronically networked to national lab information systems (human and animal)</li> <li>4. System for supply of veterinary biologicals, chemicals, and reagents established</li> <li>5. FMOLFRD engineering team established for scientific equipment maintenance (possible to use in health/environment labs)</li> </ol>	<p>CDC: Technical assistance and support for diagnostics, training infrastructure, and data integration</p> <p>USAID: Technical assistance</p>	<p>FMOLFRD: Establish vet supply system, support electronically networked labs, establish FMOLFRD engineering team</p> <p>FMOH: Support media production, microbiology PT, electronically networked labs</p>		

Year 3	<ol style="list-style-type: none"> <li>1. Centralized media production expanded to meet needs for Addis Ababa and all regional health labs</li> <li>2. Microbiology PT provided to 20 health labs (13 regional and 7 hospital) with 85% passing</li> <li>3. 50% of labs have equipment maintenance within Ethiopia (preventive)</li> <li>4. Hospitals electronically networked through information systems to regional labs</li> <li>5. Mobile lab strengthened for testing of epidemic samples</li> </ol>	<p>CDC: Technical assistance and support for diagnostics, training, infrastructure, and data integration  USAID: Technical assistance</p>	<p>FMOLFRD: Support to local equipment maintenance  FMOH: Support to media production, microbiology PT, local equipment maintenance, electronically networked labs and mobile lab strengthening</p>	
Year 4	<ol style="list-style-type: none"> <li>1. Centralized media production meets needs of all health labs</li> <li>2. 80% of labs have equipment maintenance within Ethiopia (preventive)</li> <li>3. Microbiology PT provided to 30 health labs with 85% passing</li> <li>4. Health centers electronically networked to regional labs through Lab Information Management Systems</li> <li>5. Diagnostic upgrades completed in prioritized labs</li> </ol>	<p>CDC: Technical assistance and support for diagnostics, training, infrastructure, and data integration  USAID: Technical assistance</p>	<p>FMOLFRD: Support to local equipment maintenance  FMOH: Support to media production, microbiology PT, local equipment maintenance, electronically networked labs</p>	
Year 5	<ol style="list-style-type: none"> <li>1. 100% of labs have equipment maintenance within Ethiopia (preventive)</li> <li>2. Microbiology PT provided to 40 health labs with 85% passing</li> <li>3. Lab information system linked to the national surveillance system</li> </ol>	<p>CDC: Technical assistance and support for diagnostics, training, infrastructure, and data integration  USAID: Technical assistance</p>	<p>FMOLFRD: Support to local equipment maintenance and linking lab info system to surveillance system  FMOH: Support to local equipment maintenance, microbiology PT, linking lab info system to surveillance system</p>	

## Surveillance Systems

GHSA Goal	GHSA Objective		GHSA 5-Year Target	
Detect Threats Early	Launching, strengthening and linking global networks for real-time biosurveillance.		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; improved country and regional capacity to analyze and link data from and between strengthened, real-time surveillance systems, including interoperable, interconnected electronic reporting systems. This can include epidemiologic, clinical, laboratory, environmental testing, product safety and quality, and bioinformatics data; 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)
				WHO: IDSR program
Year 1	<ol style="list-style-type: none"> <li>1. Data systems in use and interoperability among different ministries assessed</li> <li>2. Integrated Disease Surveillance and Response (IDSR) evaluation tool reviewed and a decision made whether or how to implement</li> <li>3. Gaps identified in current animal health surveillance systems</li> <li>4. Veterinary sentinel surveillance sites established for 19 diseases at 300 pilot locations</li> </ol>	CDC: Technical assistance and support for training, Health Management Information System (HMIS) infrastructure, and data integration USAID: Technical assistance	EWCA: Support to interoperability assessment FMOLFRD: Support to interoperability assessment and <i>veterinary surveillance sites</i> FMOH: Support to interoperability assessment and IDSR evaluation/implementation	

Year 2	<ol style="list-style-type: none"> <li>1. Routine information shared among ministries, and following an outbreak/field investigation</li> <li>2. 30% of health facilities implemented eHMIS/PHEM system</li> <li>3. Event-based surveillance system formalized</li> <li>4. Standard data capture tool development completed</li> <li>5. HIT graduates employed in 30% of health facilities in every region</li> </ol>	<p>CDC: Technical assistance and support for training, HMIS infrastructure, and data integration  USAID: Technical assistance</p>	<p>EWCA: Support to inter-ministerial information sharing  FMOLFRD: Support to inter-ministerial information sharing,  FMOH: Support to inter-ministerial information sharing, eHMIS/PHEM, event-based surveillance, data capture tool development, HIT graduate placement</p>	
Year 3	<ol style="list-style-type: none"> <li>1. Standard data capture tool has been tested, piloted, and initial phase of implementation has begun</li> <li>2. Surveillance in wildlife enhanced</li> <li>3. Veterinary sentinel surveillance sites established for 19 diseases at 1350 pilot locations</li> </ol>	<p>CDC: Technical assistance and support for training, HMIS infrastructure, and data integration  USAID: Technical assistance</p>	<p>EWCA: Support to enhanced wildlife surveillance  FMOLFRD: Support to veterinary surveillance sites  FMOH: Support for testing, piloting, and implementing standard data capture tool</p>	
Year 4	<ol style="list-style-type: none"> <li>1. Human and animal lab diagnostic data have achieved interoperability</li> <li>2. Veterinary sentinel surveillance sites established for 19 diseases at 1750 pilot locations</li> </ol>	<p>CDC: Technical assistance and support for training, HMIS infrastructure, and data integration  USAID: Technical assistance</p>	<p>EWCA: Support interoperability of human-animal diagnostic data  FMOLFRD: Support interoperability of human-animal diagnostic data, veterinary surveillance sites  FMOH: Support interoperability of human-animal diagnostic data</p>	

Year 5	<ol style="list-style-type: none"> <li>1. Comprehensive training on analytical software and methods implemented for PHEM officers and health informaticians (Total trained over five years: 200)</li> <li>2. Agreement with neighboring countries for cross border surveillance reached</li> <li>3. Veterinary sentinel surveillance sites established for 19 diseases at 3600 pilot locations</li> <li>4. Linked electronic data system of agriculture, hospital, and regional labs established</li> <li>5. Server housing database of timely reported and complete surveillance data created</li> <li>6. 100% of health facilities implemented eHMIS/PHEM system</li> </ol>	<p>CDC: Technical assistance and support for training, HMIS infrastructure, and data integration  USAID: Technical assistance</p>	<p>FMOLFRD: Support cross-border surveillance, veterinary surveillance, linked electronic data system  FMOH: Support to PHEM/informaticians training, cross-border surveillance, linked electronic data system, surveillance database server, eHMIS/PHEM implementation</p>	
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## Reporting

GHSA Goal		GHSA Objective	GHSA 5-Year Target		
Detect Threats Early		Strengthening the global norm of rapid, transparent reporting and sample sharing in the event of health emergencies of international concern.	Timely and accurate disease reporting according to WHO, OIE, and FAO requirements.		
	<b>Key Milestones</b>	<b>US Government Activity</b>	<b>Host Government Activity</b>	<b>Other Activity (e.g. NGO, other governments, multilaterals)</b>	
				WHO: IDSR	
Year 1	<ol style="list-style-type: none"> <li>Reporting practices and processes for diseases assessed, ensuring that they are efficient and flexible</li> <li>Reporting at national and regional levels for FMOH and FMOLFRD systematically increased <ul style="list-style-type: none"> <li>Weekly EPHI Epidemiology Bulletin published online</li> <li>Capacity built at regional levels to publish standardized bulletins</li> <li>Standard data capture tool identified</li> <li>Annual veterinary services directorate epidemiology bulletin published</li> </ul> </li> <li>Ability to issue public health alerts demonstrated</li> </ol>	<p>CDC: Technical assistance and support for training, infrastructure, and data integration</p> <p>USAID: Technical assistance</p>	<p>FMOLFRD: Routine public reporting, timely reporting to OIE on data of international concern, issue alerts as warranted</p> <p>FMOH: Routine public reporting, timely reporting to WHO on data of international concern, issue alerts as warranted</p> <p>EWCA: Reporting on wildlife health data</p>		
Year 2	<ol style="list-style-type: none"> <li>Reporting system across different ministries/institutions for routine and event-based data sharing developed</li> <li>85% of health districts reported submitting weekly reports on time</li> <li>57% of vet districts reported submitting monthly reports on time</li> <li>90% of health districts submitted complete weekly reports</li> </ol>	<p>CDC: Technical assistance and support for training, infrastructure, and data integration</p> <p>USAID: Technical assistance</p>	<p>FMOLFRD: Routine public reporting, timely reporting to OIE on data of international concern, issue alerts as warranted</p> <p>FMOH: Routine public reporting, timely reporting to WHO on data of international concern, issue alerts as warranted</p>		

Year 3	<ol style="list-style-type: none"> <li>1. System developed to ensure reporting flows down to entities using surveillance data for action</li> <li>2. Exercise conducted at regional level to test reporting capability to international level (WHO/OIE)</li> <li>3. 63% of vet districts reported monthly reports on time</li> </ol>	<p>CDC: Technical assistance and support for training, infrastructure, and data integration          USAID: Technical assistance</p>	<p>FMOLFRD: Routine public reporting, timely reporting to OIE on data of international concern, issue alerts as warranted, support international data reporting mechanism          FMOH: Routine public reporting, timely reporting to WHO on data of international concern, issue alerts as warranted, support international data reporting mechanism</p>	
Year 4	<ol style="list-style-type: none"> <li>1. 70% of vet districts reported monthly reports on time</li> <li>2. Reporting mechanism with neighboring countries established</li> </ol>	<p>CDC: Technical assistance and support for training, infrastructure, and data integration          USAID: Technical assistance</p>	<p>FMOLFRD: Routine public reporting, timely reporting to OIE on data of international concern, issue alerts as warranted, support international data reporting mechanism          FMOH: Routine public reporting, timely reporting to WHO on data of international concern, issue alerts as warranted, support international data reporting mechanism</p>	
Year 5	<ol style="list-style-type: none"> <li>1. 95% of health districts submitted weekly reports on time</li> <li>2. 80% of vet districts reported monthly reports on time</li> <li>3. 95% of health districts submitted complete weekly reports</li> </ol>	<p>CDC: Technical assistance and support for training, infrastructure, and data integration          USAID: Technical assistance</p>	<p>FMOLFRD: Routine public reporting, timely reporting to OIE on data of international concern, issue alerts as warranted, support international data reporting mechanism          FMOH: Routine public reporting, timely reporting to WHO on data of international concern, issue alerts as warranted, support international data reporting mechanism</p>	

## 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. Given an estimated population of 94.1 million, the field epidemiology target is 471.	
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)	
				One Health Central and Eastern Africa (OHCEA)	
Year 1	<ol style="list-style-type: none"> <li>FETP training expanded to include 7 new universities</li> <li>100 trainees graduated from basic level FETP; 60 graduated from expanded FETP (or .13 per 200,000 population)</li> <li>Training curriculum (relevant to GHSA) reviewed for primary care, health information technology (HITs), laboratory, and veterinary professionals</li> <li>Universities hosting Field Epidemiology Training Programs (FETP) linked to One Health University platform effort</li> </ol>	<p>DoD CTR-CBEP: Technical assistance for the lab tech accreditation pilot</p> <p>CDC: Technical assistance and support for training</p> <p>USAID: Technical assistance</p> <p>USDA: Introduction of One Health Systems Mapping Resource Tool</p>	<p>FMOLFRD: Support university training program</p> <p>FMOH: Support university training program</p> <p>EWCA: Engage in training program</p>		
Year 2	<ol style="list-style-type: none"> <li>120 field epidemiologists graduated (cumulative 180, or .38 per 200,000 population)</li> <li>15 public health veterinarians graduated</li> <li>Training (relevant to GHSA) revised for primary care and health informatics</li> </ol>	<p>CDC: Technical assistance and support for training</p> <p>USAID: Technical assistance</p> <p>USDA: Training of Trainers for One health Systems Mapping Resource Tool</p>	<p>FMOLFRD: Support university training program</p> <p>FMOH: Support university training program and curriculum review for stakeholder professions</p>		

Year 3	<ol style="list-style-type: none"> <li>150 field epidemiologists graduated (cumulative 330, or .70 per 200,000 population)</li> <li>20 public health veterinarians graduated</li> <li>One Health training curriculum evaluated and revised to enhance global health security aspects</li> </ol>	<p>CDC: Technical assistance and support for training  USAID: Technical assistance</p>	<p>FMOLFRD: Support university training program and evaluation of One Health curriculum  FMOH: Support university training program and evaluation of One Health curriculum</p>	
Year 4	<ol style="list-style-type: none"> <li>150 field epidemiologists graduated (cumulative 480, 1.02 per 200,000 population)</li> <li>30 public health veterinarians graduated</li> </ol>	<p>CDC: Technical assistance and support for training  USAID: Technical assistance</p>	<p>FMOLFRD: Support university training program  FMOH: Support university training program</p>	
Year 5	<ol style="list-style-type: none"> <li>150 field epidemiologists graduated (cumulative 630, or 1.33 per 200,000)</li> <li>40 public health veterinarians graduated</li> </ol>	<p>CDC: Technical assistance and support for training  USAID: Technical assistance</p>	<p>FMOLFRD: Support university training program  FMOH: Support university training program</p>	

## Respond

### Emergency Management

GHSA Goal		GHSA Objective	GHSA 5-Year Target		
Respond Rapidly and Effectively		Developing an interconnected global network of Emergency Operation Centers (EOC) and multi-sectoral response to biological incidents.	Every country will have a public health 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>1. Emergency Action Plan (EAP) developed</li> <li>2. Core staff trained on emergency management; 2 people trained in advanced emergency management</li> <li>3. Standard Operating Procedures and protocols developed for public health EOC</li> <li>4. Plan for infrastructure updates developed, including plans for livestock quarantine facilities, biosecurity in farms, border posts, check posts, etc.</li> </ol>	<p>CDC: Technical assistance and support for infrastructure, training, and systems integration</p> <p>USAID: Technical assistance</p>	<p>FMOLFRD: Advise on zoonotic issues in EAP</p> <p>FMOH: Coordinate EAP and SOP development</p> <p>EWCA: Technical coordination for wildlife areas</p>		
Year 2	<ol style="list-style-type: none"> <li>1. National public health EOC upgraded</li> <li>2. 2 EOC staff trained on advanced emergency management</li> <li>3. EOC multi-agency coordination group established at the national level</li> </ol>	<p>CDC: Technical assistance and support for infrastructure, training, and systems integration</p> <p>USAID: Technical assistance</p>	<p>FMOLFRD: Participate in coordination group</p> <p>FMOH: Facilitate coordination group, train, and upgrade EOC</p>		

Year 3	<ol style="list-style-type: none"> <li>1. EOC multi-agency coordination group established in 4 regions</li> <li>2. 1 Regional EOC established and staff trained on emergency management</li> <li>3. Inter-ministerial exercise conducted and After Action Report (AAR) completed</li> <li>4. 2 EOC staff trained on advanced emergency management</li> </ol>	<p>CDC: Technical assistance and support for infrastructure, training, and systems integration          USAID: Technical assistance</p>	<p>FMOLFRD: Participate in coordination group, exercise, and AAR review          FMOH: Facilitate coordination group and regional EOC development; train, exercise, and complete AAR review</p>	
Year 4	<ol style="list-style-type: none"> <li>1. 1 Regional EOC established and staff trained on emergency management</li> <li>2. 2 EOC staff trained on advanced emergency management</li> </ol>	<p>CDC: Technical assistance and support for infrastructure, training, and systems integration          USAID: Technical assistance</p>	<p>FMOLFRD: Participate in coordination group          FMOH: Facilitate coordination group and regional EOC development; train</p>	
Year 5	<ol style="list-style-type: none"> <li>1. 1 Regional EOC established and staff trained on emergency management             <ul style="list-style-type: none"> <li>• (Total of public health EOCs established and functioning in 4 regions + national)</li> </ul> </li> <li>2. Cross-border exercise conducted and AAR completed</li> </ol>	<p>CDC: Technical assistance and support for infrastructure, training, and systems integration          USAID: Technical assistance</p>	<p>FMOLFRD: Participate in coordination group, exercise, and AAR review          FMOH: Facilitate coordination group and regional EOC development; exercise, and complete AAR review</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.		
	<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>Coordination mechanisms identified between public health and law enforcement</li> <li>Engagement meeting conducted with CDC in-country staff, U.S. Embassy personnel, and country public health, One Health, and law enforcement authorities.</li> <li>Incoming FETP cohort included members of law enforcement</li> </ol>	CDC, FBI: Technical assistance for identifying country-specific public health and law enforcement roles, responsibilities, statutes, authorities, and expertise for the identification and response to biological threats USAID: Technical assistance	FMOLFRD: Participate in interagency meeting FMOH: Assess coordination mechanism, participate in interagency meeting Ministry of National Defense (MOND): Participate in interagency meeting Federal Police (Police): Participate in interagency meeting		
Year 2	<ol style="list-style-type: none"> <li>International Joint Investigations Workshop completed</li> </ol>	CDC, FBI: Conduct a Joint Investigations Workshop for public health, law enforcement, and other sectors (agriculture, veterinary, customs, and ports-of-entry), which is facilitated by experts from CDC, FBI, and other international partners. USAID: Technical assistance	FMOLFRD: Participate in workshop FMOH: Participate in workshop MOND: Participate in workshop Police: Participate in workshop		

Year 3	1. Joint Protocol/Memorandum of Understanding (MOU) developed, if needed (Year 3 or Year 4)	CDC, FBI: Provide joint investigations technical assistance to support the development of a written joint protocol or MOU between public health, law enforcement, and other sectors for joint investigation activities. USAID: Technical assistance	FMOLFRD: Advise on MOU development FMOH: Advise on MOU development MOND: Advise on MOU development Police: Advise on MOU development	
Year 4	1. Follow-up meeting conducted to advance coordination/ implementation with CDC in-country staff, U.S. Embassy personnel, and country public health, One Health, and law enforcement authorities.	CDC, FBI: Technical assistance for identifying country-specific public health and law enforcement roles, responsibilities, statutes, authorities, and expertise for the identification and response to biological threats USAID: Technical assistance	FMOLFRD: Participate in interagency meeting FMOH: Participate in interagency meeting MOND: Participate in interagency meeting Police: Participate in interagency meeting	
Year 5	1. Training and exercise conducted with counterparts from at least one neighboring country	CDC, FBI: technical assistance and support for planning, implementation, and evaluation USAID: Technical assistance	FMOLFRD: Participate in exercise and review FMOH: Participate in exercise and review MOND: Participate in exercise and review Police: Participate in exercise and review	

## Medical Countermeasures (MCM) 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 (MCM) and public health and medical personnel among international partners during public health emergencies.		
	<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>Taskforce established to formulate protocol on personnel deployment</li> <li>Training delivered on stockpile planning</li> </ol>	CDC: Technical assistance and support for training, and infrastructure planning USAID: Technical assistance	FMOLFRD: Participate in taskforce FMOH: Participate in taskforce and training		
Year 2	<ol style="list-style-type: none"> <li>Protocols adopted for personnel deployment</li> <li>Plans for prepositioning materials/medicines within existing supply chain</li> </ol>	CDC: Technical assistance and support for training, and infrastructure planning USAID: Technical assistance	FMOLFRD: Advise on MCM plan FMOH: Adopt deployment protocols and MCM plan		
Year 3	<ol style="list-style-type: none"> <li>Expedited procurement protocols established for receiving pharmaceuticals and medical equipment to be used in public health emergency responses</li> <li>Stock management system established</li> </ol>	CDC: Technical assistance and support for infrastructure establishment USAID: Technical assistance	FMOLFRD: Advise on procurement protocols and stock management system FMOH: Establish and communicate procurement protocols to stakeholders, and establish stock management system		
Year 4	<ol style="list-style-type: none"> <li>Stockpile established at priority locations identified in the plan</li> <li>Stockpile managers and staff trained</li> </ol>	CDC: Technical assistance and support for infrastructure establishment USAID: Technical assistance	FMOLFRD: Advise on stockpile depot FMOH: Establish stockpile depots and train staff		

Year 5	1. Agreement established for sending and sharing medical countermeasures regionally	CDC: Technical assistance and support for international coordination USAID: Technical assistance	FMOLFRD: Advise on MCM regional agreement FMOH: Facilitate MCM regional agreement	
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