

GLOBAL HEALTH SECURITY AGENDA ROADMAP FOR MALI

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.

Global Health Security Agenda Overarching Activities

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

- Host country'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

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	Improved national guidelines on AMR prevention, including antimicrobial treatment and infection prevention and control.	CDC provides technical assistance to MOH and implementing partner.	MOH working group updates national AMR prevention guidelines.	None.
	Improved infection prevention and control at priority healthcare facilities, including those in border districts.	USAID carries out activities.	MOH and hospital/clinic staff increase adherence to WASH-related infection prevention and control best practices.	WaterAid, in collaboration with CDC, is working to improve Wash-related IPC in Segou, Mopti and one additional region. These areas are not on the border. Red Cross and several local NGOs are involved in WASH activities.
	Shared understanding of risk among key stakeholders for AMR based on existing evidence on the use of antibiotics for growth promotion in livestock developed	USAID carries out activities.	Department of Agriculture and MOH technical experts will participate in working group to develop shared understanding.	Linked to USAID Feed the Future initiative.
Year 2	Increased adherence to national guidelines on AMR prevention, including adherence to national infection prevention and control best practices.	CDC provides technical assistance to MOH and implementing partner	MOH AMR focal points distribute national guidelines and promote increased adherence to	None.

			them	
	Improved monitoring tools and expanded monitoring for WASH-related IPC.	USAID will carry out activities.	MOH contributes to tool development and IPC-related monitoring.	Red Cross and several local NGOs are involved in WASH activities at community-level facilities in Mali. WHO is involved in IPC at the hospital-level.
	Improved WASH infrastructure and hand hygiene facilities for IPC at priority healthcare facilities, including those in border districts.	USAID will carry out activities.	MOH and hospital/clinic staff increase adherence to WASH-related infection prevention and control best practices	Red Cross and several local NGOs are involved in WASH activities at community-level facilities in Mali. WHO is involved in IPC at the hospital-level.
Year 3	Expanded national AMR prevention policy to incorporate guidelines for animal health	USAID will carry out activities and provide technical assistance.	MOH and Ministry of Agriculture working group incorporates animal health guidelines into AMR prevention policy	None.
	Established capacity, including equipment and trained staff, to detect at least 3 of 7 WHO priority pathogens at least one priority laboratory.	CDC provides technical assistance to MOH and implementing partner	MOH laboratory staff attend trainings and improve AMR detection capacity	None.
Year 4	Established national laboratory database for AMR integrated with DHIS-2. Improved data integration and enhanced capacity of staff to conduct data analysis.	CDC provides technical assistance to MOH and implementing partner	MOH working group contributes to discussion on data needs and platforms	None.
	Improved WASH-related infection prevention and control at an expanded number of healthcare facilities, including an increased number of priority facilities on the border and in Bamako.	USAID will carry out activities.	National and regional health service offices assist in increasing adherence to WASH-related infection prevention and control best practices	Red Cross and several local NGOs are involved in WASH activities at community-level facilities in Mali. WHO is involved in IPC at the hospital-level.
Year 5	Increased adherence to AMR prevention guidelines, including improved WASH-related infection prevention and control at hospital and health center levels.	CDC provides technical assistance to MOH and implementing partner	National and regional health service offices assist in increasing adherence to WASH-related infection prevention and control best practices	

	Improved integration of AMR data with other laboratory and surveillance data and improved reporting to international data systems according to IHR requirements	CDC provides technical assistance to MOH and implementing partner	MOH working group provides and implements recommendations to better improve AMR data integration and analysis	None.
	Established capacity, including equipment and trained staff, to detect the 7 WHO priority pathogens at least one priority laboratory.	CDC provides technical assistance to MOH and implementing partner	MOH laboratory staff attend trainings and improve AMR detection capacity.	None.

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	Established shared vision among national leadership and key stakeholders to reinforce the importance of a multi-sectoral coordination mechanism for zoonotic disease prevention	USAID will carry out activities.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee	Linked to USAID Feed the Future program. ECHO is also working in this space.
	Identified options for multi-sectoral coordination mechanism with strengths, weaknesses gaps and government priorities assessed and analyzed.	USAID will carry out activities.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee	Linked to USAID Feed the Future program. ECHO is also working in this space.
	Improved understanding of high-risk human and animal interface risks.	USAID will carry out activities.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee.	Linked to USAID Feed the Future program. ECHO is also working in this space.
Year 2	Developed national policy and framework on zoonotic disease control	USAID will carry out activities and provide technical assistance.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee.	Linked to USAID Feed the Future program. ECHO is also working in this space.
	Identified the appropriate zoonotic disease surveillance system that works	USAID will carry out activities.	Ministry of Agriculture, Ministry of Health and Ministry	Linked to USAID Feed the Future program. ECHO is also working in this

	best for Mali.		of Social Development will participate on steering committee.	space.
Year 3	Improved data and information-sharing among key regional country partners	USAID will carry out activities.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee.	Linked to USAID Feed the Future program. ECHO is also working in this space.
	Increased zoonotic disease surveillance system at the central level, including trained staff and equipment	USAID will carry out activities.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee.	Linked to USAID Feed the Future program. ECHO is also working in this space.
Year 4	Demonstrated competence to conduct on-going zoonotic disease outbreak response.	USAID will carry out activities.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee.	Linked to USAID Feed the Future program. ECHO is also working in this space.
	Improved infrastructure and trained staff to ensure a functional country-wide zoonotic disease surveillance system at the regional and district levels	USAID will carry out activities.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee.	Linked to USAID Feed the Future program. ECHO is also working in this space.
Year 5	Established infection prevention system to control the spread of zoonotic diseases among domestic animals in Mali	USAID will carry out activities.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee.	Linked to USAID Feed the Future program. ECHO is also working in this space.
	Established a zoonotic disease surveillance system integrated with public health surveillance and laboratory data to provide timely and accurate data to detect outbreaks	USAID will carry out activities. NIH will conduct surveillance and surveys on zoonotic diseases present in Mali, such as Relapsing Fever, Lassa Fever, MERS and Congo Crimean Hemorrhagic Fever.	Ministry of Agriculture, Ministry of Health and Ministry of Social Development will participate on steering committee.	Linked to USAID Feed the Future program. ECHO is also working in this space.

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	Increased workforce capacity in BS&S and transboundary animal diagnosis at both human and animal health national laboratories	DoS will provide technical assistance. USAID, NIH	MABB will increase capacity to promote policy, education and outreach on BS&S.	University of Bamako and NIH are working to improve BS&S research networking at national, district and community levels	
	Initiated certification for 2 BSCs in Mali and maintain them annually	CDC, NIH and USAID will also provide technical assistance.	Contract biosafety cabinet certification service provider to certify 2 BSCs in-country and maintain them annually	NIH will provide support on this. There is one certified BSL-3 lab already, which NIH is working with	
	Revise existing National Biosecurity Framework. Draft supporting biosecurity legislation and strategic plan.	CDC will provide technical assistance.	MoH will establish biosecurity and biosafety committee.		
Year 2	Established a BS&S technical working group including MABB, Bamako University and laboratories and chaired by the Government of Mali	NIH	MOH will work with other governmental entities in establishing technical working group including MABB, Bamako University and laboratories.	University of Bamako and NIH are working to improve BS&S research networking at national, district and community levels	
	Initiated multi-year plan to strengthen the capacity for SEREFO and LCV using organization development tools and best practices	NIH	MoH will work with National laboratory in initiating multi-year plan	University of Bamako and NIH are working to improve BS&S research networking at national, district and community levels	

	Provide technical assistance to maintain biosafety certifications	CDC Lab Advisor will provide technical assistance	MoH BS&S committee will assist	
Year 3	Developed a national policy on BS&S covering both human and animal health	NIH	MoH will work with MOA in developing national policy on BS&S	University of Bamako and NIH are working to improve BS&S research networking at national, district and community levels
	Developed a Biosecurity Center of Excellence housed at the University of Bamako	NIH	MoH will work with MOA in developing national policy on BS&S	University of Bamako and NIH are working to improve BS&S research networking at national, district and community levels
	Developed a plan to create a functional BS&S unit within the MOH	NIH	MoH will work with MOA in developing on BS&S	University of Bamako and NIH are working to improve BS&S research networking at national, district and community levels
	Trained workforce and provided mentoring to improve adherence to national and international BS&S standards	CDC Lab Advisor will provide technical assistance	MoH BS&S committee will assist	
Year 4	Improved quality assurance of the laboratory facilities for human and animal disease surveillance and testing and of the BS&S training and implementation at the University	NIH will ensure the annual recertification of NIH BSL3 lab, the only one in Mali, which was instrumental in diagnosing suspected cases during the Ebola outbreak to support the national response.	MoH will work with MOA	University of Bamako and NIH are working to improve BS&S research networking at national, district and community levels
	Established a certification system in collaboration with the University of Bamako in BS&S	NIH?	MoH will work with MOA	University of Bamako and NIH are working to improve BS&S research networking at national, district and community levels
Year 5	Implemented a national BS&S policy and practices at SEREFO and LCV	NIH	MoH will work with MOA	University of Bamako and NIH are working to improve BS&S research networking at national, district and community levels
	Biosecurity Center of Excellence established to serve as a regional leader in this area	NIH	MoH will work with MOA	University of Bamako and NIH are working to improve BS&S research networking at national, district and

				community levels

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.	
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)	
Year 1	Coordinate with GAVI and UNICEF to strengthen the national immunization plan, including commodities, timeline national days and personnel 65% of children under five are fully vaccinated against MMR (measles, mumps and rubella), DTaP (diphtheria, tetanus and pertussis), IPV (inactive poliovirus), Hib (haemophilus influenza type b), HBV (hepatitis B virus), PCV (pneumococcal conjugate vaccine), MCV4 (meningococcal conjugate vaccine), rotavirus and yellow fever according to WHO standards, as measured by population-based surveys	USAID MCH Program supports this effort through a Cooperative Agreement	The MCH Unit within the MOH, under the Technical Advisor from the Minister of Health office, coordinates National Immunization Day and this is high-level event opened by the country's President and Ministers. This indicates that the issue consistently receives high level attention.	Many local and international NGOs are actively involved to roll out nationwide immunization efforts. UNICEF and GAVI, through the MOH, take the lead, and other donors and key NGOs sign on to ensure all respective regions are covered.	
Year 2	75% of children under five are fully vaccinated according to WHO standards	USAID MCH Program supports this effort through a Cooperative Agreement	The MCH Unit of MOH and the Minister of Health's office lead on this effort.	Many local and international NGOs are actively involved to roll out nationwide immunization efforts. UNICEF and GAVI, through the MOH, take the lead, and other donors and key NGOs sign on to ensure all respective regions are covered.	
Year 3	80% of children under five are fully vaccinated according to WHO standards	USAID MCH Program supports this effort through a Cooperative Agreement	The MCH Unit of MOH and the Minister of Health's office lead on this effort.	Many local and international NGOs are actively involved to roll out nationwide immunization efforts. UNICEF and GAVI, through the MOH, take the lead, and other donors and key NGOs sign on to ensure all respective regions are covered.	

Year 4	85% of children under five are fully vaccinated according to WHO standards	USAID MCH Program supports this effort through a Cooperative Agreement	The MCH Unit of MOH and the Minister of Health's office lead on this effort.	Many local and international NGOs are actively involved to roll out nationwide immunization efforts. UNICEF and GAVI, through the MOH, take the lead, and other donors and key NGOs sign on to ensure all respective regions are covered.
Year 5	90% of children under five are fully vaccinated according to WHO standards	USAID MCH Program supports this effort through a Cooperative Agreement	The MCH Unit of MOH and the Minister of Health's office lead on this effort.	Many local and international NGOs are actively involved to roll out nationwide immunization efforts. UNICEF and GAVI, through the MOH, take the lead, and other donors and key NGOs sign on to ensure all respective regions are covered.

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	Updated and approved national policy and strategic plan for laboratories.	CDC will provide technical assistance to MOH	MOH will approve the updated policy and strategic plan	None	
	Initiated development of lab quality management system and SLMTA accreditation at two national infectious disease laboratories	CDC and USAID will provide technical assistance to MOH and implementing partner	2 National labs will start/continue SLIMTA accreditation	WHO will provide technical assistance	
Year 2	Updated and standardized process and procedures for specimen referral, transport and management	CDC Senior Lab Advisor and implementing partner will provide technical assistance.	MOH will work the national, regional and health district laboratories in updating and standardizing process and procedures for specimen referral, transport and management	WHO will provide technical assistance	
	Established laboratory information management system (LIMS) at selected national and regional laboratories	CDC lab team and implementing partner will provide technical assistance.	MOH technical experts assist in developing and implementing HMIS at priority national and regional laboratories.	Merieux Institute in Mali and the Regional West African lab network (RESAOLAB) provide support to MOH	
	Reduced barriers to sending a sample that arrives within 24-48 hours, with cold-chain	CDC lab team and implementing	MOH technical experts assist in improving adherence to safe	Merieux Institute in Mali and the Regional West African lab	

	intact. Improved adherence to safe transport policies and procedures in districts covering at least 30% of the population in Mali	partner will provide technical assistance.	transport policies and procedures in districts covering at the selected districts	network (RESAOLAB) provide support to MOH
Year 3	Established national strain/specimen repository(s) selection	CDC Senior Lab Advisor lab team and implementing partner will provide technical assistance.	MOH technical experts assist in establishing national strain/specimen repository(s) selection	NIH, Merieux Institute in Mali and the Regional West African lab network (RESAOLAB) and provide support to MOH
	Quality Management System and lab network checklist developed; assessment and report completed for at least two national laboratories with established capacity to conduct at least five of the ten core tests.	CDC Senior Lab Advisor Lab team and implementing partner will provide technical assistance.	MOH technical experts assist in developing and implementing quality assurance program at priority national and regional laboratories.	Merieux Institute in Mali and the Regional West African lab network (RESAOLAB) provide support to MOH
	Implemented safe transport to cover at least 50% of the population	CDC Lab team and implementing partner will provide technical assistance.	MOH technical experts assist in implementing safe transport from district to national level and within districts covering at the selected districts	Merieux Institute in Mali and the Regional West African lab network (RESAOLAB) and other NGOs provide support to MOH
Year 4	Laboratory quality improvement targeting two national laboratories. These two labs have achieved at least one star accreditation through SLMTA	CDC Lab team and implementing partner will provide technical assistance.	MOH technical experts assist in improving adherence to safe transport policies and procedures in districts covering at the selected districts	Merieux Institute in Mali and the Regional West African lab network (RESAOLAB) provide support to MOH
	Laboratory quality improvement at priority national and regional laboratories with established capacity to conduct at least five of the ten core tests.	CDC Lab team and implementing partner will provide technical assistance	MOH technical experts assist in developing and implementing quality assurance program at priority national and regional laboratories.	Merieux Institute in Mali and the Regional West African lab network (RESAOLAB) provide support to MOH
	Specimen referral strengthening to districts covering at least 65% of the	CDC Lab team and implementing	MOH technical experts assist in improving adherence to safe	Merieux Institute in Mali and the Regional West African lab

	population	partner will provide technical assistance.	transport policies and procedures in districts covering at the selected districts	network (RESAOLAB) and other NGOs provide support to MOH
Year 5	Laboratory quality improvement to international standards for three laboratories. Two of which have achieved a 3-star accreditation level through SLMTA	CDC Lab team and implementing partner provide technical assistance.	MOH technical experts assist in developing and implementing quality assurance program at priority national and regional laboratories.	Merieux Institute in Mali and the Regional West African lab network (RESAOLAB) and other NGOs provide support to MOH
	Established capacity to reliably conduct at least 5 of the 10 core tests at selected regional and national labs	CDC Lab team and implementing partner provide technical assistance.	MOH will ensure in collaboration with other governmental entities (MOA, Research centers, university of Bamako, etc.)	WHO will provide technical assistance
	Expanded safe transport policies and procedures to districts covering at least 80% of the population	CDC Lab team and implementing partner provide technical assistance.	MOH technical experts assist in improving adherence to safe transport policies and procedures in districts covering at the selected districts	FAO/ OIE, Merieux Institute in Mali and the Regional West African lab network (RESAOLAB) and other NGOs provide support to MOH

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)	
Year 1	Established National Surveillance Framework based on IDSR framework, IHR requirements, epidemiology and resources for at least three priority diseases or syndromes, including SARI, acute hemorrhagic fever and meningitis building off of and integrating existing surveillance systems	CDC will provide technical assistance to MOH and implementing partner	MOH staff and other technical SMEs will participate in working group.	WHO is assisting the MOH (DNS) on strengthening surveillance systems under IDSR.	
	Improved routine indicator-based surveillance for one priority disease or syndrome at selected districts, including districts in Bamako and on the border	CDC will provide technical assistance to MOH and implementing partner	MOH staff and other technical SMEs will participate in working group to develop standards and implement.	WHO is assisting the MOH (DNS) on strengthening surveillance systems under IDSR.	
	Mapped and identified plan to address capacities and gaps in current animal health surveillance systems, including use of data	USAID will carry out the activities NIH will continue to support a Master's of Public Health Training program at the Department of Public Health within the University of Sciences, Techniques and Technology of Bamako	Multiple ministries are expected to participate fully.	Other donors active in animal health topics will be included.	

	Introduced and piloted DHIS-2 in collaboration with regional and district health offices in at least 4 districts	USAID implementing partner will lead in this effort nationwide	The Ministry of Health appoints focal point to overhaul process at the national level	Under the direction of the MOH all levels of government and NGOs are asked to conform to the data collecting system according to a national rollout timeline that is expected to start within the first year of GHS implementation.
	Developed reporting and information system for zoonotic disease	USAID implementing partners	The Ministry of Health appoints focal point to overhaul process at the national level	Linked to USAID Feed the Future program. ECHO is also working in this space.
	Improved national health information system, guidelines, and process to establish standards for IDSR-based national surveillance strategy and compliance with IHR standards	USAID and CDC provide technical assistance	The MOH and other relevant line ministries, such as the Ministry of Agriculture, to lead multi-sectoral technical working group to develop national standards.	All partners that feed data into any linked system will participate to learn about and contribute to the system.
	Developed national guidance to integrate independent data systems, including those operated by the DNS, military (in the North), private clinics and NGO and intergovernmental partners. Piloted integrated systems for one priority disease or syndrome.	USAID, CDC, DOD, and NIH provide technical assistance.	The MOH and other relevant line ministries, such as the Ministry of Agriculture, to lead multi-sectoral technical working group to develop national standards.	All partners that feed data into any linked system will participate to learn about and contribute to the system.
Year 2	Based on the accepted national surveillance strategy, implement routine event-based surveillance for three priority diseases or syndromes, at selected districts, including districts in Bamako and on the border	CDC will provide technical assistance to MOH and implementing partner	MOH technical staff will implement expanded surveillance	WHO is assisting the MOH (DNS) on strengthening surveillance systems under IDSR.
	Expand integrated data system to two additional priority diseases	USAID works closely with CDC laboratories to include these additional diseases	The MOH technical working group serves as the basis to add additional reportable diseases	Other partners who are affected will be asked to provide data
	Scaled up use of DHIS-2 in collaboration with regional and district health offices in at least 10 districts	USAID implementing partner will lead in this effort nationwide	The Ministry of Health has a focal point to lead this process at the national level	Under the direction of MOH all levels of government and NGOs will be asked to conform to the new data collecting system
Year 3	Improved workforce knowledge and skills to conduct epidemiologic analysis at national, regional and local levels to	CDC will provide technical assistance to MOH and implementing	MOH surveillance staff will participate in trainings and improve skills and knowledge on data analysis	WHO is assisting the MOH (DNS) on strengthening surveillance systems under IDSR.

	identify the emergence of re-emergence of infections	partner		
	Expanded routine indicator and event-based surveillance to additional priority districts	CDC will provide technical assistance to MOH and implementing partner	MOH technical staff will implement expanded surveillance	WHO is assisting the MOH (DNS) on strengthening surveillance systems under IDSR.
	Scale up the use of DHIS-2 in collaboration with regional and district offices in all least 25 districts	USAID implementing partner will lead in this effort nationwide	The Ministry of Health has a focal point to lead this process at the national level	Under the direction of MOH all levels of government and NGOs will be asked to conform to the new data collecting system
	Ensured integration between DHIS-2 and other data systems including for animal health, are linked to EOC	USAID and CDC work with EOC technical advisors to make sure this is done	The EOC lead is involved in ensuring that the systems are fully linked	Additional partners working under Feed the Future and other agricultural and livestock programs will be involved
Year 4	Developed recommendations for the implementation of disease control measures in response to surveillance signals	CDC will provide technical assistance to MOH and implementing partner	MOH technical working group will develop standards	WHO is assisting the MOH (DNS) on strengthening surveillance systems under IDSR.
	Improved evaluation of data quality and timeliness	CDC will provide technical assistance to MOH and implementing partner	MOH will assist in evaluation of surveillance systems	WHO is assisting the MOH (DNS) on strengthening surveillance systems under IDSR.
	Demonstrated capacity to provide ongoing, real-time data into the system as well as using the inputted data in meaningful analyses conducted by government ministries and EOC staff.	USAID and CDC Technical Advisors will provide the necessary technical assistance	The MOH Focal Point is responsible for this realization.	All partners are expected to provide such information to the new database
	Scaled up the use of DHIS-2 in collaboration with regional and district health offices in at least 40 districts	USAID implementing partner will lead in this effort nationwide	The Ministry of Health has a focal point to lead this process at the national level	Under the direction of MOH all levels of government and NGOs will be asked to conform to the new data collecting system
Year 5	Adopted integrated indicator and event-based surveillance system to evaluate exposure to and infection with priority pathogens	CDC will provide technical assistance to MOH and implementing partner	MOH will strengthen ownership over surveillance systems	WHO is assisting the MOH (DNS) on strengthening surveillance systems under IDSR.
	Established a national health information systems architecture of interoperable linked data systems across health domains in support of a national IDSR-based and	USAID and CDC technical advisors will contribute technical assistance	The MOH focal point is responsible for this establishment and compliance	All partners are expected to provide such information in the new database.

	IHR compliant surveillance strategy			
	Ensured 90% of 63 health districts are providing and using data in collaboration with regional and district offices	USAID implementing partner will lead in this effort nationwide	The Minister of Health has a focal point to lead the process at the national level.	Under the direction of MOH all levels of government and NGOs will be asked to conform to the new data collecting system

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.		
	Key Milestones	US Government Activity	Host Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)	
Year 1	Identified and mapped standard reporting systems in laboratory and surveillance systems (including human and animal diseases)	CDC and USAID will provide technical assistance	The Minister of Health appoints focal point to overhaul the process at the national level.		
Year 2	National framework for sharing biological and behavioral surveillance data with in-country stakeholders across all sectors in place.	CDC and USAID will provide technical assistance	The MOH Focal Point oversees this effort		
Year 3	Established routine multi-tiered reporting of diagnostic results across health care facilities and laboratories	CDC and USAID will provide technical assistance	The MOH Focal Point oversees this effort		
	Implemented standard reporting systems across the national laboratory system	CDC and USAID will provide technical assistance	The MOH Focal Point oversees this effort		
Year 4	Established capacity (staffing, training, network building) for reporting potential public health events of international concern (PHEIC)	CDC and USAID will provide technical assistance	The MOH Focal Point oversees this effort		
	Conducted emergency identification and reporting exercises	CDC and USAID will provide technical assistance	The MOH Focal Point oversees this effort		
Year 5	Evaluated and revised reporting protocols	CDC and USAID will provide technical assistance	The MOH Focal Point oversees this effort		
	Shared national data with internationally recognized database according to IHR and OIE standards	USG Mali Mission work closely with USAID Washington and CDC Atlanta to ensure this linkage is created	The MOH Focal Point is responsible for this linkage	International entities will provide quality oversight to make sure Mali complies with global standards	

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	Increased workforce capacity to detect and respond to public health emergencies with STEP and FETP basic trainings to 50% coverage (Target of 1:400,000 epidemiologists)	CDC Resident Advisor works with MOH to establish FETP program and provides instruction and guidance to residents	MOH requests CDC assistance and partners with CDC to initiate FETP program	WHO has provided epidemiology training for the Ebola response	
	A national Human Resources for Health (HRH) database is established and managed by USG implementing partner	USAID: implementing partner will lead on HRH	MOH at the district and regional levels are collecting the necessary data to feed into the HRH	WHO, UN and other 5 health bilateral donors are regularly updated on the results of the HRH database	
	Shared vision among national leadership and key stakeholders for One Health workforce needs to include zoonotic disease	USAID: implementing partner will lead in this area	MOH will call the multi-sector meeting involving other line ministries	WHO, UN and other 5 health bilateral donors will be invited to participate in the meetings	
	Initiated NPHI development, including developing a strategic plan.	CDC will provide technical assistance to stakeholders and implementing partner	MOH, mainly CNAM and INRSP, will conduct public health mapping, strategic planning and priority setting.	None	
Year 2	Increased workforce capacity to detect and respond to public health emergencies with FETP basic and intermediate trainings to 60% coverage (Target of 1:333,000 epidemiologists)	CDC Resident Advisor works with MOH to establish FETP program and provides instruction and guidance to residents	MOH or Bamako School of Public Health strengthens ownership of FETP program	WHO has provided epidemiology training for the Ebola response	
	Transitional plan for MOH ownership of HRH database is developed with key milestones identified	USAID: implementing partner will lead on HRH	At a national level, the MOH will take greater ownership to identify key focal person	WHO, UN and other 5 health bilateral donors contribute to the results, but not finances, of	

				the HRH database
	National strategic plan developed to include animal health personnel needs based on initial assessments	Both USAID: P&R and FAO are key players	The MOH is responsible for liaising with other relevant ministries to involve all stakeholders in the process	Other donors, such as ECHO, working with animals and livestock will be involved
	Increased national coordination on NPHI development.	CDC will provide technical assistance to stakeholders and implementing partner	MOH, mainly CNAM and INRSP, steering committee will establish work plan and roles and responsibilities	None
Year 3	Increased workforce capacity to detect and respond to public health emergencies with FETP basic and intermediate trainings to 80% coverage (Target of 1:250,000 epidemiologists)	CDC provides technical assistance	MOH or Bamako School of Public Health strengthens ownership of FETP program and incorporates into standard curriculum	WHO has provided epidemiology training for the Ebola response
	Four Mali epidemiologists have graduated from the regional FETP advanced training	CDC provides technical assistance	Graduates return to positions in public health in Mali and contribute to country capacity to respond to public health emergencies	WHO has provided epidemiology training for the Ebola response
	Training and equipment provided to MOH to ensure government ownership of the HRH system	USAID: Implementing partner will lead on HRH	The MOH focal person takes the lead on this topic from this point forward	WHO, UN and other 5 health bilateral donors contribute to the results, but not finances, of the HRH database
	Initiated implementation of National Public Health Institutes work plan.	CDC will provide technical assistance to stakeholders and implementing partner	MOH, mainly CNAM and INRSP, steering committee will implement NPHI strategic plan	None
Year 4	Strengthened country ownership of FETP basic and intermediate program	CDC provides technical assistance	MOH or Bamako School of Public Health takes ownership of FETP Basic and Intermediate programs	WHO has provided epidemiology training for the Ebola response
	Initiated FETP Advanced program	CDC Resident Advisor works with MOH to establish FETP program and provides instruction and guidance to residents	MOH partners with CDC to initiate FETP program	WHO has provided epidemiology training for the Ebola response
	Quality assurance assistance provided to MOH to manage the national HRH database	USAID: USAID implementing partner plays a supporting role on HRH	The MOH focal person takes the lead on this topic	WHO, UN and other 5 health bilateral donors contribute to the results, but not finances, of the HRH database
	The Human Resources unit within the	Both USAID:P&R and	The MOH is responsible for liaising with	Other donors, such as ECHO,

	MOH established full ownership and oversight of the workforce needs	FAO are key players	other relevant ministries to involve all stakeholders in the process	working with animals and livestock will be invited to participate
	Increased organizational change, moving towards NPHI development. Improved monitoring and evaluation.	CDC will provide technical assistance to stakeholders and implementing partner	MOH, mainly CNAM and INRSP, steering committee will implement NPHI strategic plan	None
Year 5	At least one epidemiologist for 200,000 people has completed the intermediate FETP training. Established FETP basic, intermediate and advance programs	CDC provides technical assistance	MOH strengthens ownership over FETP Advanced program	WHO has provided epidemiology training for the Ebola response
	National Human Resource in Health (HRH) database is established and well managed by the MOH	USAID: USAID Implementing partner will provide oversight on HRH at this point	The MOH focal person takes the lead on this topic from this point forward	WHO, UN and other 5 health bilateral donors contribute to the results, but not finances, of the HRH database
	The cadre of personnel to respond to both human and animal health needs are established in accordance with the One Health workforce model	Both USAID:P&R and FAO are key players	The MOH is responsible for liaising with other relevant ministries to involve all stakeholders in the process	Other donors, such as ECHO, working with animals and livestock will be invited to participate
	Established National Public Health Institute and strengthened MOH capacity to implement programs to detect, prevent and respond to infectious diseases.	CDC will provide technical assistance to stakeholders and implementing partner	MOH, mainly CNAM and INRSP, steering committee will implement NPHI strategic plan	None

Respond

Emergency Management

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	Established permanent EOC, including equipment and trained staff.	CDC and USAID will provide technical assistance	MOH will identify EOC staff and assist with training	Gates Foundation is also supporting the public health EOC in Mali.	
Year 2	Established procedures for incident management system and watch staff, including reporting, call triage, and situation awareness	CDC will provide technical assistance	MOH, especially CNAM, will assist with establishing procedures	Gates Foundation is also supporting the public health EOC in Mali.	
	Improved capacity for EOC to respond, through activation during Hajj pilgrimage and other important mass gatherings.	CDC and USAID will provide technical assistance	MOH, especially CNAM, will activate during mass gatherings	Gates Foundation is also supporting the public health EOC in Mali.	
Year 3	Improved integration of surveillance, lab and animal health data into the EOC	CDC and USAID will provide technical assistance to MOH and implementing partner	MOH working group will provide recommendations and assist in integrating data systems	Gates Foundation is also supporting the public health EOC in Mali.	
	Improved workforce skills, knowledge and capacity to respond to a public health emergency, including identified and trained rapid response teams.	CDC and USAID will provide technical assistance	EOC and multi-sectoral staff will participate in EOC simulation and training	Gates Foundation is also supporting the public health EOC in Mali.	
Year 4	Improved ability of EOC staff to access and analyze data from laboratory and surveillance systems for more timely emergency response.	CDC and USAID will provide technical assistance	EOC staff will participate in trainings on data analysis. MOH will assist with integration data systems with	Gates Foundation is also supporting the public health EOC in Mali.	

			EOC.	
Year 5	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 MoH decision makers during outbreaks and other public health emergencies	CDC will provide technical assistance	EOC staff will continue to activate during public health emergencies and monitor and evaluate performance. MOH will take ownership of EOC.	Gates Foundation is also supporting the public health EOC in Mali.

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	Strengthen coordination of public health, law enforcement, civil aviation, immigration and other stakeholders to respond to a public health emergency at border crossings and the Bamako International Airport	CDC will provide technical assistance.	Immigration, border control, transportation, law enforcement, public health and civil aviation stakeholders will assist in developing MOU and national frameworks for collaboration	None	
Year 2	Established MOU and frameworks for information exchange and multi-sectoral coordination at the border and Bamako International Airport	CDC will provide technical assistance.	Immigration, border control, transportation, law enforcement, public health and civil aviation stakeholders will assist in developing MOU and national frameworks for collaboration	None	
Year 3	Increased workforce capacity to conduct multi-sectoral and cross-border response at the Bamako Airport and at the border	CDC will provide technical assistance.	Immigration, border control, transportation, law enforcement, public health and civil aviation stakeholders will participate in simulation of multi-sectoral response	None	
Year 4	Improved monitoring and evaluation of multi-sectoral collaboration.	CDC will provide technical assistance.	Immigration, border control, transportation, law enforcement, public health and	None	

			civil aviation stakeholders will assist in developing monitoring tools	
Year 5	Established framework and experience staff able to conduct a multi-sectoral response to a public health emergency intentional biological attack	CDC and DOD will provide technical assistance.	Immigration, border control, transportation, law enforcement, public health and civil aviation stakeholders will assist in developing MOU and national frameworks for collaboration	None

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 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	Initiated development of national guidelines for personnel deployment and receiving, storing, stockpiling, distributing and managing medical countermeasures	CDC and USAID will provide technical assistance	MOH steering group will draft national guidelines	None	
Year 2	Completed national guidelines on personnel deployment, including protocol for issuing travel orders, clearing deployments, evacuation and medical treatment	CDC will provide technical assistance	MOH steering group will complete national guidelines	None	
Year 3	Improved workforce knowledge and skills on personnel deployment and medical countermeasures policies and procedures	CDC will provide technical assistance	MOH steering group will assist in training and simulation based on national procedures	None	
Year 4	Completed national plan for receiving, storing, stockpiling, distributing and managing medical countermeasures	CDC will provide technical assistance	MOH steering group will complete national guidelines	None	
Year 5	Established system for sending and receiving personnel and medical commodities during an public health emergency	CDC will provide technical assistance	MOH will implement and promote national guidelines	None	