

**GLOBAL HEALTH SECURITY AGENDA
ROADMAP FOR
BANGLADESH**

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 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

This Roadmap for GHSA in Bangladesh was developed after consultation with the Government of Bangladesh, icddr,b, WHO and other partners.

Summary of Overarching Priorities for 2015-2019

- Ensure a strong and well-functioning One Health platform in Bangladesh to fully prepare for and respond to potential health threats.
- Strengthen Bangladesh's resilience to address health-related national disasters.
- Improve planning between civilian, law enforcement, and military around health-related security.
- Enhance linkages between Bangladesh and international planning and response platforms related to health security.

List of Acronyms

Acronym	Meaning
ACDI/VOCA	Agricultural Cooperative Development International/Volunteers in Overseas Cooperative Assistance
APHL	Association of Public Health Laboratories
AMR	Antimicrobial Resistance
BIPSOT	Bangladesh Institute of Peace Support Operations and Training
BRAC	Bangladesh Rural Advancement Committee
BSL	Biosafety Level
BS&S	Biosafety and Biosecurity
CDC	Centers for Disease Control and Prevention
cPMDT	Community Programmatic Management of Multi Drug Resistant Tuberculosis
DAO	Defense Attaché Office
DGDA	Directorate General for Drug Administration
DGMS	Directorate General Medical Services (Bangladesh Military)
DLS	Directorate of Livestock Services
DOD	Department of Defense
DTRA	Defense Threat Reduction Agency
DTRA-CBEP	Defense Threat Reduction Agency-Cooperative Biological Engagement Program
DUO	Diseases of Unknown Origin
FDHA	Foreign Disaster and Humanitarian Assistance (USAID, Office of)
EM	Emergency Management
EOC	Emergency Operation Center
EPI	Expanded Program on Immunizations
EPT-2	Emerging Pandemic Threats 2 Activity
EQAS	External Quality Assessment Scheme
FAO	Food and Agriculture Organization
FAO-ECTAD	Food and Agriculture Organization -Emergency Centre for Trans-boundary Animal Diseases
FAST	Finding TB cases Actively, Separating Safely and Treating Effectively
FUO	Fevers of Unknown Origin
GAVI	Global Alliance for Vaccines and Immunizations
GOB	Government of Bangladesh
GX	GeneXpert

HAI	Healthcare-Associated Infections
HRCI	Health Research for Challenge for Impact Activity
IC	Infection Control
icddr,b	International Centre for Diarrheal Disease Research, Bangladesh
IEDCR	Institute of Epidemiology Disease Control & Research
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
IMPACT	Improving Public Health Management for Action Training Program
ILI	Influenza-Like Illnesses
IPC	Infection Prevention and Control
IPV	Inactivated Polio vaccine
IS	Information Systems
IT	Information Technology
Lab	Laboratory Systems
LED	Light Emitting Diode
Log	Logistics
LQMS	Laboratory Quality Management System
MCM-Personnel	Medical Countermeasures and Personnel Deployment
MDMR	Ministry of Disaster Management and Relief
MOH	Ministry of Health and Family Welfare
MOL	Ministry of Law
NGO	Non-Governmental Organization
NLSP	National Laboratory Strategic Plan
NTP	National TB Program
ODC	Department of Defense Office of Defense Cooperation
OH	One Health
OPV	Oral Polio Vaccine
PH-Law	Linking Public Health and Law Enforcement
PHLSF	Public Health Laboratory Service Fellowship
PIO	Public International Organization
POC	Point of Contact
PR-DREE	Pacific Resilience – Disaster Response Exercise and Exchange (USARPAC led disaster preparedness exchange)
PREDICT-2	A Five-year Award From USAID to Monitor Viruses with Pandemic Potential
P&R	Preparedness and Respond Activity
QA	Quality Assurance

Rpt	Reporting
RTRL	Regional TB Reference Lab
SARI	Severe Acute Respiratory Infections
SIAPS	Systems for Improved Access to Pharmaceuticals and Services Activity
SMART	Specific, Measurable, Achievable, Realistic, and Time-bound
SME	Subject Matter Expert
SOP	Standard Operating Procedure
Surv	Surveillance Systems
TB	Tuberculosis
TBD	To Be Determined
TEPHINET	Training Programs in Epidemiology and Public Health Intervention Networks
UNDP	United Nations Development Program
USACE	U.S. Army Corps of Engineers
USAID	U.S. Agency for International Development
USAID/B	U.S. Agency for International Development, Bangladesh
USARPAC	U. S. Army Pacific
USD	U.S. Dollars
USDA	U.S. Department of Agriculture
USG	U.S. Government
WHO	World Health Organization
WHO – UMC	World Health Organization-The Uppsala Monitoring Centre
Workforce	Workforce Development
XDR	Extremely Drug Resistant
ZD	Zoonotic Diseases

Prevent

Antimicrobial Resistance

GHSA Goal		GHSA Objective	GHSA 5-Year Target		
Prevent Avoidable Epidemics		Preventing the emergence and spread of antimicrobial drug resistant organisms and emerging zoonotic diseases and strengthening international regulatory frameworks governing food safety.	Support work being coordinated by WHO, FAO, OIE to develop an integrated and global package of activities to combat antimicrobial resistance, spanning human, animal, agricultural, food and environmental aspects (i.e. a one-health approach), including: a) each country has its own national comprehensive plan to combat antimicrobial resistance; b) strengthen surveillance and laboratory capacity at the national and international level following agreed international standards developed in the framework of the Global Action plan, considering existing standards and; c) improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid, point-of-care diagnostics, including systems to preserve new antibiotics.		
	Key Objectives	US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)	
Year 1	<ul style="list-style-type: none"> Enhance MDR/XDR-TB surveillance, diagnostics, and treatment Strengthen the Ministry of Health and Family Welfare, Ministry of Fisheries and Livestock and Ministry of Environment & Forest's capability to prevent AMR Assess current activities and policies around AMR and if none exist, begin development of a activities and policies for AMR containment Develop framework for an AMR prevalence survey/AMR surveillance and monitoring system across GHSA and country priority pathogens using a common methodology Determine risk factors for healthcare-associated infections (HAI) & develop framework for HAI surveillance Develop shared vision of Risk of AMR based on existing/new evidence on use of antibiotics for growth promotion in livestock 	CDC USAID	MOH/IEDCR DGHS DGDA NTP MOFLS DLS MOEF	icddr,b BRAC WHO World Bank FAO	
Year 2	<ul style="list-style-type: none"> Develop an AMR containment policy for Bangladesh 	CDC	MOH/IEDCR	icddr,b	

	<ul style="list-style-type: none"> • Enhance lab capacity for establishing AMR and HAI surveillance • Establish AMR prevalence rates using AMR survey for GHSA and country priority pathogens • Implement risk factor-based improved infection control practices in major healthcare settings • Identify gaps in AMR laboratory capability • Establish AMR and HAI surveillance system in sentinel surveillance sites • Train healthcare workers on AMR and HAI 	USAID USDA	DGHS NTP DLS	BRAC WHO World Bank
Year 3	<ul style="list-style-type: none"> • Begin transition of MDR/XDR TB programs to the Government of Bangladesh • Operationalize national AMR containment policy by developing surveillance protocols • Evaluate implementation of improved infection prevention control • Develop capability to detect 3 of 7 WHO priority AMR pathogens in at least one reference laboratory • Pilot country-wide/multi-pathogen surveillance program with rapid information sharing centrally and regionally • Continue AMR and HAI surveillance 	CDC USDA USAID DoD/ODC	MOH/IEDCR MOD NTP DLS	icddr,b BRAC WHO World Bank
Year 4	<ul style="list-style-type: none"> • Conduct sustainable AMR & HAI surveillance by the Government of Bangladesh • Develop national treatment guidelines • Develop national treatment guidelines for animal and wildlife health • Advocacy for community and healthcare workers for prevention and control of AMR and HAI 	CDC USDA USAID DoD/ODC	MOH/IEDCR MOD NTP DLS DOF	icddr,b BRAC WHO World Bank
Year 5	<ul style="list-style-type: none"> • Demonstrate successful antimicrobial use tracking • Implement national treatment guidelines for both human and animal health • Conduct sustainable AMR & HAI surveillance by the Government of Bangladesh 	CDC USDA USAID DoD/ODC	MOH/IEDCR MOD/DGMS BIPSOT NTP DLS	icddr,b BRAC WHO World Bank

Prevent

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 Objectives	US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)	
Year 1	<ul style="list-style-type: none"> Develop and Operationalize Shared vision among national leadership and key stakeholders of importance of multi-sectoral coordination mechanism for zoonotic disease prevention Map high risk human/animal interfaces (i.e. "value chains," land use change, etc.) Detect and discover prioritized viral families in Bangladesh through partners Assist Bangladesh partners during outbreaks Standardize approach to study human behavioral risk Improve health workforce capability at hot-spots of zoonotic spillover Initiate a multi-center approach to controlling anthrax in animals and humans Develop feasible and acceptable infection control interventions for zoonotic Nipah and avian influenza infections in humans 	CDC USAID	IEDCR nCDC DLS BLRI	icddr,b FAO	
Year 2	<ul style="list-style-type: none"> Universities review existing curriculum and training strategies across participating schools to align with OH teaching core competencies High risk "nodes" for spillover of zoonotic threats and the behaviors and practices that enable spillover identified Support the development of contingency plans (pre-outbreak and outbreak control plan) for priority zoonotic diseases 	CDC USAID	IEDCR nCDC DGHS (MED, CME) CVASU NIPSOM DLS	icddr,b FAO	
Year 3	<ul style="list-style-type: none"> Curriculum and training strategies for pre-service across participating schools are aligned with OH teaching core 	CDC USAID	IEDCR nCDC	icddr,b FAO	

	<p>competency needs and integrated into university programs</p> <ul style="list-style-type: none"> • Package of OH "risk reduction" measures targeting high risk practices and behaviors that enable spillover validated and made ready for implementation • Strengthen electronic reporting systems linked to web based database for livestock and wildlife surveillance data and link with human data • Train human-animal health professionals in joint outbreak response at national and regional levels 		<p>DGHS (MED, CME) CVASU NIPSOM DLS</p>	
Year 4	<ul style="list-style-type: none"> • Rollout of OH Education across participating schools/colleges ongoing • Package of OH "risk reduction" measures targeting high risk practices and behaviors that enable spillover implemented • Develop and implement priority zoonotic disease prevention and control strategies • Carry out desktop and field simulations of the contingency plans for priority zoonotic diseases • Continued training 	<p>CDC USAID</p>	<p>IEDCR nCDC DGHS (MED, CME) DLS</p>	<p>icddr,b FAO</p>
Year 5	<ul style="list-style-type: none"> • Multi-sectoral coordination mechanism in operation that allows different sectors/ministries to coordinate and collaborate on a regular basis for zoonotic disease prevention • OH workforce trained in accordance with national zoonotic disease prevention needs and graduated • Package of OH "risk reduction" measures targeting high risk practices and behaviors that enable spillover implementation continued 	<p>CDC USAID</p>	<p>IEDCR nCDC DGHS (MED, CME) DLS</p>	<p>icddr,b FAO</p>

Prevent

Biosafety and 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 Objectives:		US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ul style="list-style-type: none"> Determine if Bangladesh has a requirement for replacing their BSL-3 capability and, if so, assist in ensuring that the BSL-3 is safe, secure and a central component in a pathogen consolidation plan. Develop the foundation of a national biosafety and biosecurity system Increase the resources and capabilities in Bangladesh for biosafety and biosecurity through collaboration with the MOH and the Bangladesh Biosafety and Biosecurity Association. Identify/recruit biosafety and biosecurity officer for support of BS/BS Address key biosafety/biosecurity gaps through targeted trainings Prepare a comprehensive inventory of public laboratories engaged in microbiological activities, including information about storage of pathogens of security concern and a plan for minimizing storage and maximizing modern diagnostics (human, animal, environment laboratories) Identify public health laws that could be used to strengthen biosafety and biosecurity efforts and identify current gaps in public health laws 		CDC USAID	IEDCR DGHS (Hospital) DLS	icddr,b ASM
Year 2	<ul style="list-style-type: none"> Initiate mitigation programs to address the gaps identified during the assessments MOU to provide material support to the laboratories and initiate 		CDC, USAID	IEDCR DGHS (Hospital) DLS	icddr,b ASM

	<p>purchase and distribution drafted</p> <ul style="list-style-type: none"> • Initiate policy implementation on Biohazard waste management • Build national capacity for BSC certification by supporting the accreditation of 2 biosafety professionals following international standards (NSF49) • Establish biosafety and biosecurity programs in 20% of the districts • Develop a sustainable program for biosafety and biosecurity trainings • Provide biosafety and biosecurity trainings to all national level institutes of human, animal and environment importance • Universities review existing curriculum and training strategies for BS&S across participating schools to align with OH teaching core competencies • Lab BS&S capacities upgraded in compliance with OIE and WHO standards • Work with Government of Bangladesh on establishing self-funding for the biosafety and biosecurity programs being initiated 			
Year 3	<ul style="list-style-type: none"> • Establish biosafety and biosecurity programs in 40% of the districts • Provide biosafety and biosecurity training to division level institutes of human, veterinary, and environment importance • Provide biosafety and biosecurity trainings to 50 % of Government medical colleges • Curriculum and training strategies for pre-service BS&S training across participating schools are aligned with OH teaching core competency needs and integrated into university programs • All training programs emphasize the Biosecurity and Biosafety principal of maximizing diagnostics and minimizing storage of pathogens of security concern • Initiate training with Government of Bangladesh on emergency response procedures • Lab BS&S capacities upgraded in compliance with OIE and WHO standards 	CDC USAID	IEDCR DGHS (Hospital) DLS	icddr,b ASM
Year 4	<ul style="list-style-type: none"> • Establish biosafety and biosecurity programs in 80% of the districts. Begin initiation of self-sustainment of training programs within Bangladesh through the “train the trainers” programs • Provide biosafety and biosecurity trainings to 50% laboratories of human, veterinary, and environment importance • Continue to emphasize the biosecurity and biosafety principals of 	CDC USAID	IEDCR DGHS (Hospital, MED, CME) DLS	icddr,b ASM

	<p>maximizing diagnostics and minimizing storage of pathogens of security concern</p> <ul style="list-style-type: none"> • Provide biosafety and biosecurity trainings to all Government medical colleges • Curriculum and educational strategies revised to meet BS&S workforce needs • Lab BS&S capacities upgraded in compliance with OIE and WHO standards • Continued progress on Government funding mechanisms for sustainment of these programs being put in place • Continued self-assessments annually 			
Year 5	<ul style="list-style-type: none"> • Establish biosafety and biosecurity programs in all districts • Government is demonstrating adequate political support and funding of biosafety and biosecurity programs for sustainability, including facilities and equipment that has been established over the 5 years • Provide biosafety and biosecurity trainings to all laboratories of human, veterinary, environment importance, and including emergency response procedures; ensure trainings are being conducted in-house by the Government of Bangladesh • Initiate BSBS trainings targeting private medical colleges • Pre-service laboratory workforce trained in accordance with BS&S needs • Lab BS&S capacities in animal labs in accordance with WHO and IHR standards and consistent with national needs met • A program of annual self-assessments is functioning and sustainable, with refresher training programs in place by the Government of Bangladesh 	CDC USAID	IEDCR DGHS (Hospital, MED, CME) DLS	icddr,b ASM

Prevent

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 Objectives		US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ul style="list-style-type: none"> Evaluate opportunities for new vaccines and enhancing existing vaccine programs Evaluate existing immunization activities, systems, and practices Collection of baseline data on the burden of Hospitalization of Rotavirus and intussusception rates 		CDC USAID	MOH/IEDCR EPI	icddr,b FAO WHO
Year 2	<ul style="list-style-type: none"> Develop training plan to address key gaps in immunization practices and policies Refine plan to address key gaps in distribution, cold chain, and quality control for vaccinations Implement new vaccines in response to gaps identified in year 1 Piloting of influenza vaccination for pregnant women 		CDC USAID USDA	MOH/IEDCR EPI	icddr,b FAO WHO
Year 3	<ul style="list-style-type: none"> Implement training activities to improve immunization practices Address deficiencies in distribution, cold chain, and quality control 		CDC USAID USDA	MOH/IEDCR EPI	icddr,b FAO WHO
Year 4	<ul style="list-style-type: none"> Continue training activities to improve immunization practices 		CDC USAID USDA	MOH/IEDCR EPI	icddr,b FAO WHO
Year 5	<ul style="list-style-type: none"> Develop capabilities at EOC and surveillance systems to detect outbreaks of vaccine preventable diseases and mobilize response Revise national immunization plan to contain new training protocols, vaccine introductions, and sustain supply chain infrastructure 		CDC USAID USDA	MOH/IEDCR EPI	icddr,b FAO WHO

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 Objectives:		US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ul style="list-style-type: none"> Develop plans and lab capabilities to combat TB Map laboratory capabilities, including antimicrobial resistance testing, and develop trainings and collaborations to strengthen laboratories in Bangladesh Identify gaps in national laboratory capability to conduct core tests Increase the number of districts that are able to ship laboratory samples to reference labs 		CDC USAID USDA	MOH/IEDCR NTP NTRL	icddr,b APHL FAO
Year 2	<ul style="list-style-type: none"> Continue to develop TB laboratory capabilities Develop National Laboratory Strategic Plan Capacity buildup of National Reference laboratory to expand core testing of extended agreed number of pathogens and also to detect novel pathogens Procure equipment and train personnel to address some national lab core test gaps, including antimicrobial resistance and HAI testing Continue to develop specimen transport capabilities in additional districts Expand laboratory network for core tests to 5 more sites at the District and Upazilla level 		CDC USAID	MOH/IEDCR NTP NTRL	icddr,b APHL FAO
Year 3	<ul style="list-style-type: none"> Monitor and assess TB lab capability upgrades Convene lab governing body to begin development of national laboratory policies and regulations Conduct trainings for LQMS for senior laboratory officials Initiate PHLSF Expand laboratory network for core tests to 5 more sites at the District and Upazilla level Expand core testing to 3 additional pathogens 		CDC USAID DOD/ODC	MOH/IEDCR NTP NTRL	icddr,b, APHL, FAO

Year 4	<ul style="list-style-type: none"> • Train trainings on National Lab Strategic Plan and lab policies and regulations • Implement LQMS in at least 80% of laboratories • Continue PHLSF training • Expand laboratory network for core tests to 5 more sites at the District and Upazilla level • Develop plan for regional laboratory network to have sufficient sites throughout the country for access to all priority pathogen testing within 24 hours 	CDC USAID DOD/ODC	MOH/IEDCR NTP	icddr,b APHL FAO
Year 5	<ul style="list-style-type: none"> • Establish a TB regional laboratory in each region • Implement LQMS in all district level labs • Continue PHLSF training 	CDC USAID DOD/ODC	MOH/IEDCR NTP	icddr,b APHL FAO

Detect

Surveillance

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 Objectives:	US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ul style="list-style-type: none"> Determine disease burden of priority communicable diseases Identify capacities and gaps in current both human and animal health surveillance systems, including use of data, and agree on plan for strengthening with national authorities Evaluate existing disease surveillance networks 	CDC USAID	MOH/IEDCR/nCDC DLS	icddr,b FAO
Year 2	<ul style="list-style-type: none"> Complete year 2 of zoonotic sampling Strengthening and expansion of existing disease surveillance network Strengthening and expansion of enteric disease (including cholera) surveillance Assist MOH in enhancing sentinel and syndromic surveillance systems OH national surveillance strategy agreed upon by all stakeholders 	CDC USAID USDA DOS	MOH/IEDCR DLS	icddr,b FAO WHO
Year 3	<ul style="list-style-type: none"> Complete final year of zoonotic sampling Begin linking human and animal surveillance systems Link surveillance systems to EOC 	CDC USAID USDA	MOH/IEDCR DLS	icddr,b FAO
Year 4	<ul style="list-style-type: none"> Enhance laboratory based surveillance and 	CDC	MOH/IEDCR	icddr,b

	serosurveillance	USAID		FAO
Year 5	<ul style="list-style-type: none"> Assess linked surveillance systems and connection to EOC Sustained surveillance of OH diseases 	CDC USAID	MOH/IEDCR/nCDC	icddr,b FAO

Detect

Reporting and Information Systems

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 requirements.		
	Key Objectives:		US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ul style="list-style-type: none"> Strengthen and upgrade existing TB information systems for timely and accurate disease reporting Evaluate National framework for national and international reporting of diseases, including zoonotic disease Develop National framework for sharing biological and behavioral surveillance data with in-country stakeholders across all sectors Build the capacity for excellence in public health data analysis and dissemination Evaluate existing national health informatics/health IT capability Develop strategies for interoperable longitudinal multi-sectoral surveillance in targeted risk areas Develop integrated information systems for surveillance, disease control, and program monitoring and evaluation 		CDC USAID	MOH/IEDCR NTP HMIS DLS	icddr,b FAO WHO
Year 2	<ul style="list-style-type: none"> Develop GHS-IS goals with country to target interconnected interoperable systems capable of timely and accurate disease reporting Begin development of a IS Strategic Plan 		CDC USAID	MOH/IEDCR NTP HMIS	icddr,b FAO WHO
Year 3	<ul style="list-style-type: none"> Complete National IS Strategic Plan Purchase required hardware and software upgrades necessary to support IS Strategic Plan Develop policies covering health informatics across human and animal health sectors 		CDC USAID	MOH/IEDCR NTP	icddr,b FAO WHO
Year 4	<ul style="list-style-type: none"> Execute National IS Strategic Plan 		CDC USAID	MOH/IEDCR NTP	icddr,b FAO WHO
Year 5	<ul style="list-style-type: none"> Evaluate implementation of the National IS Strategic Plan 		CDC USAID	MOH/IEDCR NTP	icddr,b, FAO, WHO

Detect

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 Objectives:		US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ul style="list-style-type: none"> Establish shared vision among national leadership and key stakeholders for OH workforce needs for early detection of possible zoonotic disease threats Identify/implement training courses/opportunities to enhance workforce capacity Evaluate workforce capacity and create a workforce development plan Initiate IMPACT pilot program Expand the advanced 2-year Field Epidemiology Training Program (FETP) to include more trainees and a One Health approach Develop a basic FETP (6 month training) Increase MOHFW/IEDCR staff necessary to implement GHS activities over 5 years Increase CDC staff in country necessary to implement GHS activities over 5 years 		CDC USAID	MOH/IEDCR NIPSOM DGHS (CME, MED)	icddr,b
Year 2	<ul style="list-style-type: none"> Assist Ministries of Health, Fisheries and Livestock, Forestry and the Environment, and others in implementing workforce development plan, especially career paths Reassess IMPACT training curriculum based on evaluation findings; continue development of M&E criteria for program; enroll second cohort; work with GOB on appropriate post-training assignments for IMPACT Year 1 class; advance plan for university accreditation Continue to expand advanced 2-year FETP to include more trainees (as additional batches of graduates become mentors), including not only veterinarians but also social scientists. Place graduates in 		CDC USAID	MOH/IEDCR NIPSOM DGHS (CME, MED) MOFLS MOEF	icddr,b

	<p>career paths positions.</p> <ul style="list-style-type: none"> • Conduct basic-level FETP at national level and develop plans to expand to district sites 			
Year 3	<ul style="list-style-type: none"> • Continue assisting Ministries and their Human Resource departments with developing career paths, and build cadres of field epidemiologists with jobs commensurate to their training • Graduate first cohort from IMPACT; follow placement for graduates within GOB; reassess IMPACT training year 2 curriculum based on evaluation findings; enroll third cohort (with expanded number of fellows as graduates become mentors); increased cost-sharing with GOB; evaluate initial M&E data; finalize university accreditation. • Continue to expand advanced 2-year FETP to include more trainees. Encourage government of Bangladesh begin to take ownership of program, including increasing funding. • Expand basic-level FETP to 2 district sites and begin courses 	CDC USAID	MOH/IEDCR NIPSOM DGHS (CME, MED) MOFLS MOEF	icddr,b
Year 4	<ul style="list-style-type: none"> • Graduate second cohort from IMPACT; continue IMPACT cohort training; implement survey to first cohort graduates within GOB positions; adjust program as needed for GOB; enroll fourth cohort (with expanded number of fellows as graduates become mentors). • Continue to expand advanced 2-year FETP to include more trainees. Encourage government of Bangladesh to take ownership of program, including increasing funding. • Expand basic-level FETP to 5 more district sites and begin courses 	CDC USAID	MOH/IEDCR NIPSOM DGHS (CME, MED)	icddr,b
Year 5	<ul style="list-style-type: none"> • Graduate third cohort from IMPACT; refine IMPACT training strategy based on first cohort survey results; continue IMPACT cohort training; implement survey to second cohort graduates within GOB positions; adjust program as needed for GOB.; look at full transition to GOB sustainment; enroll fifth IMPACT cohort. • Continue to expand advanced 2-year FETP to include more trainees. Encourage government of Bangladesh to take full ownership of program, including fulling funding advanced-level FETP. • Expand basic-level FETP to 10 more district sites and begin courses 	CDC USAID	MOH/IEDCR NIPSOM DGHS (CME, MED)	icddr,b

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 Objectives:		US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ul style="list-style-type: none"> Develop OH "preparedness" framework for a multi-sectoral rapid response capabilities Review and develop policies, protocols, and guidelines to strengthen leadership, governance and coordination for emergency preparedness and response Evaluate capability and capacity in emergency management 		CDC	MOH/IEDCR DLS	icddr,b
Year 2	<ul style="list-style-type: none"> Enhance EOC staff through Basic Incident Management Principles, PH EM Management Fellowship, and Intensive Immersion trainings Enhance EoC infrastructure to approach WHO-recommended EOC infrastructure standards Develop policies, plans, and procedures to support daily and surge EOC operations OH "preparedness" framework for a multi-sectoral rapid response to reports of disease "outbreaks" implemented Strengthen EOC to act as hub for early warning system to respond in real time Assist with designing and procuring the equipment necessary to outfit a fully functional EOC 		CDC	MOH/IEDCR DLS	icddr,b
Year 3	<ul style="list-style-type: none"> Finalize targeted trainings for EOC staff Commission EOC Sustained OH "preparedness" for multi-sectoral rapid response to reports of disease "outbreaks" Simulation exercise for emergency management with OH approach 		CDC	MOH/IEDCR DLS	icddr,b
Year 4	<ul style="list-style-type: none"> Exercise EOC 		CDC	MOH/IEDCR	icddr,b

Year 5	<ul style="list-style-type: none">• Complete measurement and evaluation of EoC performance• National capacity for OH "preparedness" in place	CDC	MOH/IEDCR DLS	icddr,b
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Respond

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 Objectives:		US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ul style="list-style-type: none"> Identify rules, regulations, SOPs and existing agreements between public health authorities and law enforcement officials 		CDC FBI	MOH/IEDCR	
Year 2	<ul style="list-style-type: none"> Develop protocols for joint investigations between law enforcement and public health professionals 		CDC FBI	MOH/IEDCR	
Year 3	<ul style="list-style-type: none"> Develop training program for joint investigations between law enforcement and public health professionals 		CDC FBI	MOH/IEDCR	
Year 4	<ul style="list-style-type: none"> Implement training program for joint investigations between law enforcement and public health professionals 		CDC FBI	MOH/IEDCR	
Year 5	<ul style="list-style-type: none"> Demonstrate ability 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. 		CDC FBI	MOH/IEDCR	

Respond

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 Objectives:		US Government Activity	Bangladesh Government Activity	Other Activity (e.g. NGO, other governments, multilaterals)
Year 1	<ul style="list-style-type: none"> Develop non-medical counter-measures capabilities for use during disease outbreaks Document existing MCM's, required MCM's, and lendable MCM's and personnel in Bangladesh to address public health emergencies Use 2015 PR-DREE to provide GoB an opportunity to practice inter-agency coordination in post-disaster scenario Provide MDMR a completed Dhaka City Debris Management Plan, gain official GoB acceptance and implementation of the plan 		CDC DOD/ODC USAID	MOH/IEDCR	FAO
Year 2	<ul style="list-style-type: none"> Develop preparedness workforce management system Develop MCM deployment clearance process Write letters of agreement with neighboring countries for exchange and provision of MCM's Execute PR-DREE 2016 		CDC USAID DOD/ODC DOJ	MOH/IEDCR MOL	FAO
Year 3	<ul style="list-style-type: none"> Develop MCM provision/request protocols and procedures Capacities and skills required for implementation of National preparedness plans for use of non-medical counter-measures involving zoonotic disease (available through regional stockpiles) in place 		CDC USAID DOD/ODC	MOH/IEDCR	FAO
Year 4	<ul style="list-style-type: none"> Conduct exercise to test MCM request and provision systems Develop capability for mobile field hospitals 		CDC USAID DOD/ODC	MOH/IEDCR DGMS	FAO
Year 5	<ul style="list-style-type: none"> Disseminate M&E results Exercise mobile field hospitals Capacities and skills required for implementation of National preparedness plans for use of non-medical counter-measures involving zoonotic disease (available through regional stockpiles) sustained 		CDC USAID DOD/ODC	MOH/IEDCR DGMS	FAO

