Global Health Security Agenda

Strengthening Health Security Across the Globe:

Progress and Impact of U.S. Government Investments in the Global Health Security Agenda

2020 Annual Report

Foreword

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has unequivocally demonstrated that no country is fully prepared for emerging biological threats, and the risk of epidemics and pandemics to global health, security, economies, and societies is grave. The world needs strong and resilient health security capacity to save lives and stop outbreaks at their source, whether the outbreaks are naturally occurring, or the results of an accidental or deliberate pathogen release. While we focus on ending the current pandemic, we simultaneously must redouble our efforts to prepare for the next biological threat.

In 2020, the United States partnered with over 40 countries, including 19 Global Health Security Agenda (GHSA) countries (called Intensive Support countries) described in this report, to provide operational and technical assistance to build their health security capacities. The need for these capacities in every country has never been more clear. As of July 6, 2021, more than 3.9 million people have died and over 183 million people have been infected by COVID-19 in more than 200 countries[1]. The pandemic resulted in sudden global economic downturn and widened existing inequities. The International Monetary Fund (IMF) has estimated that the pandemic has cost the global economy at least $11 trillion[2], and the full impact of the pandemic on lives, poverty, the global economy, and international security and stability will not be known for years to come.

As the COVID-19 outbreak expanded into a global pandemic, it became clear that action was needed. The U.S. Government has and continues to leverage numerous programs and initiatives to help partners prepare for and respond to COVID-19. And as described on page 3 of this report, the capacities built through GHSA in our 19 partner countries were instrumental in the speed and breadth of their response – functional Emergency Operations Centers, well-equipped workforces such as Field Epidemiologists, robust national laboratory systems, and more.

Yet, in the midst of this pandemic, the world remains susceptible to additional outbreaks as evidenced by the outbreaks of Ebola in Guinea and the Democratic Republic of Congo (DRC), Lassa fever in Central Africa, and plague in DRC. The pandemic has also resulted in a backslide on many public health indicators, including missed routine vaccinations for diseases such as measles and polio, delayed or missed treatment for known chronic conditions, maternal and child health care, and a myriad undiagnosed health conditions, as well as profound impacts on mental health. The global community must continue to invest and improve global health security even as we fight to end the COVID-19 pandemic.

The United States has been a longstanding global health security leader. In 2014, the United States helped launch the GHSA to strengthen the world's ability to prevent, detect, and respond to infectious disease threats[3]. Now, more than 70 countries as well as international organizations, non-governmental organizations, and private sector entities are united in a common goal of measurably strengthening global health security – with the target of strengthening country capacities by 2024 for 100 countries in at least five specific technical areas. GHSA emphasizes the importance of a whole-of-government and multi-sectoral effort to build national capacity to prepare for biological catastrophes, which includes human and animal health, agriculture, security, defense, law enforcement, development assistance, foreign affairs, and finance. In 2018, GHSA members renewed the initial five-year phase of action (2014-2019) for a second five-year phase (2019-2024), known as "GHSA 2024." GHSA 2024 works to accelerate implementation of and compliance with the International Health Regulations (IHR) (2005), a legally binding instrument adopted by 196 countries, including the 194 World Health Organization (WHO) Member States, to strengthen country-level capabilities needed to prevent, detect, and respond to health emergencies. The United States is fully dedicated to assisting countries around the world to improve health security capacities and meet the 2024 target, informed and measured using the globally-endorsed IHR Monitoring and Evaluation Framework (MEF), including the Joint External Evaluation (JEE).

Our Transparent Approach

This report focuses on activities implemented during the sixth year [Fiscal Year (FY) 2020] of the U.S. commitment to advance global health security in GHSA Intensive Support countries (partner countries). The U.S. Government selected 19 partner countries (see map on page 4) to receive intensive financial and technical assistance in FY20 to help achieve GHSA 2024 targets by designing and implementing programs that address capacity gaps identified in the JEE.

In FY20, the U.S. Government provided more than $480 million in GHSA funding to advance this work in partner countries. These resources built upon the health security capacity gains in partner countries from previous U.S. investments of more than $2 billion since 2015 to better assist partner countries to rapidly detect and effectively respond to infectious disease outbreaks (including COVID-19 and Ebola) and prevent those outbreaks which are avoidable. To continue this important work, Congress appropriated more than $610 million to be directed in FY21 towards capacity-building in partner countries.

In FY20, GHSA programs pivoted to support partner country COVID-19 response activities including contact tracing, community engagement, and coordination of public health response efforts. Past GHSA investments also built important capacities that partner countries utilized in response to COVID-19. Some common examples are shown below, with additional specific examples referenced in the Evidence of GHSA Impact in 2020 section on page 10.

Uganda FETP residents review records after testing truck drivers during the COVID-19 pandemic in Kampala, Uganda. Photo: Edger Ampaire, AFENET

COVID-19 Response
GHSA-Supported Outcomes

Previous GHSA-supported outcome
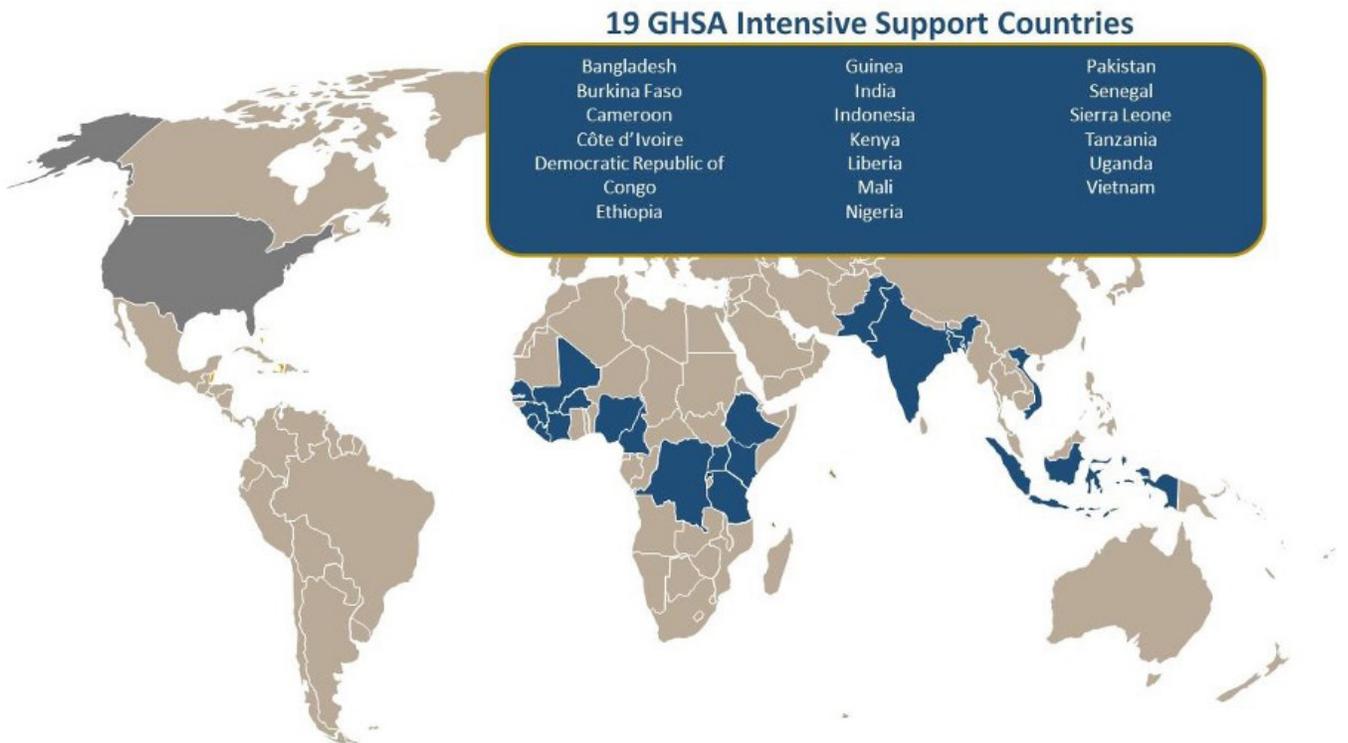
Leveraging GHSA Capabilities for COVID-19

Immunizations
- National vaccine coverage (e.g., measles) extended
- Vaccine access and delivery improved

- Surveillance for Adverse Effects from Immunization (AEFI) established
- Microplanning for COVID-19 vaccines conducted and logistics, cold chains expanded for COVID-19 vaccines

Laboratory Systems
- Lab testing capacity strengthened
- Specimen transport networks improved

- Lab systems expanded to include diagnostics for SARS-CoV2 detection
- Existing specimen transport networks were used for transport of COVID-19 samples

Infection Prevention and Control
- IPC trainers trained
- IPC health facility assessments conducted

- Trained staff to implement and oversee IPC programs
- Expanded support for IPC for health facilities managing COVID-19 cases

Realtime Surveillance and Reporting
- Infectious disease surveillance improved
- Integrated electronic reporting improved

- Surveillance systems used for reporting on COVID-19 confirmed cases, deaths, and hospitalizations
- Reporting information used to deploy rapid response teams and initiate contact tracing

Workforce
- Disease detectives trained
- In-service trainings put in place

- Disease detectives performed contact tracing, ran surveillance operations
- In-service training used to train staff on case mangement surveillance, IPC, RCCE, and diagnostics for COVID-19

Risk Communication and Community Engagement
- RCCE coordination mechanisms established
- Two-way communication channels developed

- Community feedback mechanisms (such as hotlines in place) built on existing mechanisms
- Rumor tracking and mechanisms established using existing comms channels to counter misinformation
- Mass and social media messaging initiated

Emergency Operations Centers
- EOC capacities, procedures and plans developed
- Emergency managers trained

- EOCs mobilized at both national and subnational levels in many countries
- Emergency managers coordinated COVID-19 emergency response

Biosafety and Biosecurity
- Biosafety and biosecurity systems put in place including training programs

- Biosafety training conducted in labs testing for COVID-19

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An All-of-U.S. Government Approach to Building Health Security Capacity

The GHSA emphasizes that an all-of-government approach is needed by countries to address gaps in health security. The U.S. Government champions this approach to build its domestic health security capabilities as well as to promote this approach through its international work with other partner countries. Each year, U.S. Government staff from across departments and agencies use partner countries' national priorities to develop work-plans for each country that align with the host-government's JEE and/or National Action Plan for Health Security (NAPHS). U.S. staff stationed in embassies in each country coordinate this process with support from staff in Washington, D.C. and Atlanta. The result is a plan that represents an all-of-government approach to building capacity and allows agencies to leverage each other's activities. Twice per year, U.S. Embassies report on progress and the impact of efforts in each partner country. Like the work-plans, these reports are developed across all agencies working in the country.

The National Security Council (NSC) staff coordinates these efforts and oversees the U.S. Government's GHSA Interagency Review Council. Many U.S. Government agencies play key roles, including the Department of State, Department of Defense (DOD), Department of Justice (DOJ), Department of Agriculture (USDA), Department of Health and Human Services (DHHS), Department of Homeland Security (DHS), Office of Management and Budget (OMB), U.S. Agency for International Development (USAID), Environmental Protection Agency (EPA), U.S. Centers for Disease Control and Prevention (CDC), Federal Bureau of Investigation (FBI), and others.

U.S. GHSA INTENSIVE SUPPORT COUNTRIES

19 GHSA Intensive Support Countries

Bangladesh	Guinea	Pakistan
Burkina Faso	India	Senegal
Cameroon	Indonesia	Sierra Leone
Côte d'Ivoire	Kenya	Tanzania
Democratic Republic of	Liberia	Uganda
Congo	Mali	Vietnam
Ethiopia	Nigeria	

Strategic Vision

GHSA BUILDS CAPACITIES ACROSS 14 TECHNICAL AREAS INCLUDING ANIMAL AND HUMAN HEALTH, AGRICULTURE, AND SECURITY.

14 Technical Areas	▶	...across **3** global health security agenda priority areas	▶	...to achieve **3** critical health security impacts

Antimicrobial Resistance
Zoonotic Diseases
Biosafety & Biosecurity
Immunization

PREVENT

Prevent avoidable outbreaks

National Laboratory System
Real-time Surveillance
Reporting
Workforce Development

DETECT

Detect threats early

Emergency Operations Centers
Linking Public Health with Law Enforcement & Multisectoral
Rapid Response
Medical Countermeasures & Personnel Development

RESPOND

Respond rapidly and effectively

Aimée Gbahoué is installing a tap on her handwashing station, which she plans to sell in response to COVID-19. Photo: Maxiès Ahodekon / Association Béninoise de Marketing Social

Shared Outcomes of U.S. Government Investments in GHSA: Building Global Health Security Capacities

The following sections provide examples of U.S. Government support for GHSA activities, including the impact of U.S. technical and financial support on capacities in partner countries. The countries listed below achieved an increase over their baseline capacity scores within a technical area as defined by the JEE. Importantly, U.S. Government activities are helping partner countries improve their scores and achieve benchmarks outlined in their own JEEs and National Action Plan for Health Security.

The JEE is a transparent, external assessment of a country's health security capacity. Each country that completes a JEE receives a score ranging from one to five across indicators that span 19 technical areas. The United States monitors GHSA country progress in areas of U.S. investment using the JEE scoring system. Twice a year, interagency teams at U.S. Embassies assess the impact of U.S. investments in improving partner countries' abilities to prevent, detect, and respond to infectious disease threats, as measured by the JEE scoring scale. For most indicators, gaining one level of capacity represents a significant accomplishment.

POINTS OF ENTRY

7 COUNTRIES

PAKISTAN designed and launched a COVID-19 Travelers Surveillance Management Information System at 19 air, sea, and land points-of-entry; trained 130 government staff on the tool; and screened more than a million passengers.

In **CAMEROON**, the Public Health EOC created emergency response plans and guidelines for COVID-19 and other public health threats at ports of entry as part of the National Emergency Response Plan.

P R E V E N T

IMMUNIZATION
7 COUNTRIES

In celebration of World Rabies Day, **KENYA** vaccinated nearly 11,000 animals and sensitized community groups on the importance of vaccination and recognizing rabies symptoms in animals.

Having struggled with cases of wild-type polio over the last decade, **CAMEROON** introduced an inactivated polio vaccine, conducted vaccination campaigns, and intensified case investigation to improve detection and reporting of poliovirus infections.
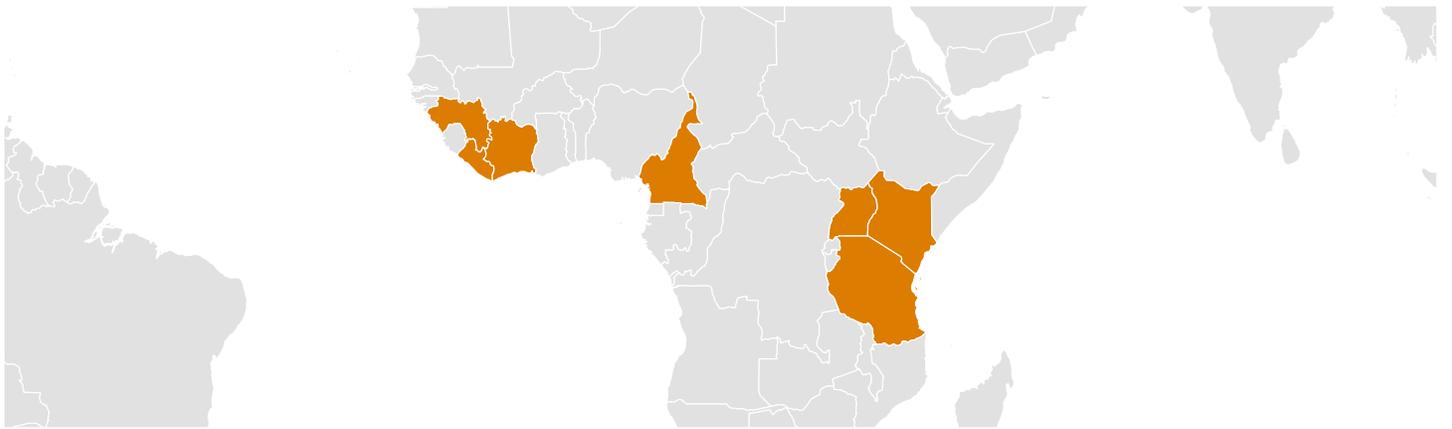
ZOONOTIC DISEASES
16 COUNTRIES

KENYA finalized strategic plans to strengthen the surveillance and control of anthrax and brucellosis, both priority zoonotic diseases for the country.

LIBERIA revitalized their community event-based surveillance system in 3 counties thereby improving its public health systems to combat deadly zoonotic diseases.

BIOSAFETY AND BIOSECURITY
8 COUNTRIES

GUINEA developed a manual and Standard Operating Procedures (SOPs) for the safe management of central and regional veterinary laboratories. In addition, Guinea developed SOPs for waste management and the disinfection of live poultry markets and farms.

CÔTE D'IVOIRE developed and implemented national workplace safety regulations to protect lab workers from COVID-19 and increased testing to more than 1,000 COVID-19 samples per day at their central laboratory.

ANTI-MICROBIAL RESISTANCE
18 COUNTRIES

TANZANIA updated Infection Prevention and Control (IPC) guidelines and trained health care workers in ten regions on strengthening IPC in health facilities, reaching over 500 staff.

UGANDA surveyed 42 acute care health facilities to improve the national IPC program and promote regular, local self-assessments of IPC and hand hygiene activity, successfully implementing the national AMR action plan.

DETECT

NATIONAL LABORATORY SYSTEM
18 COUNTRIES

SIERRA LEONE trained staff from the Central Veterinary Lab on advanced diagnostic techniques (serological and molecular tests). As a result, laboratory technicians have successfully diagnosed brucellosis; rabies virus (using fluorescent antibody test); and avian influenza (through identification of antibodies in poultry sera).

Past investments in laboratories allowed **ETHIOPIA** to work more quickly to respond to the COVID-19 pandemic, rapidly expanding testing to thousands of specimens per day and increasing from one to more than 50 testing sites.

HUMAN RESOURCES
14 COUNTRIES

UGANDA officials refined the National Animal Health Workforce Profile, revealing a trained animal health workforce of more than 1250 (public) and 550 (private) professionals. This includes veterinary officers, assistant veterinary officers, animal production officers, community animal health workers, and laboratory technicians. Uganda has trained staff in each of its 135 districts.

GUINEA's "disease detectives" quickly responded to the COVID-19 pandemic, utilizing their outbreak management and response expertise, and played a leading role in surveillance and contact tracing.
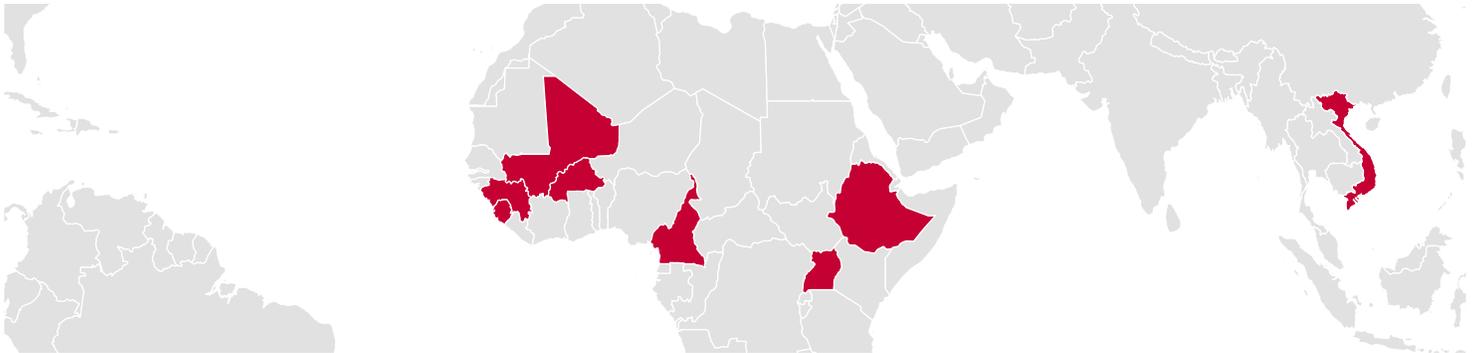
REPORTING
14 COUNTRIES

MALI authorities trained public and private veterinary field workers in six regions on the surveillance and the reporting of priority zoonotic diseases. With this training, the reporting rate of priority diseases, including those of zoonotic origin, increased more than 50 percent in the administrative regions of Mali.

CAMEROON is now able to report outbreaks of polio, cholera, and monkeypox within 24 hours to the World Health Organization following established standard protocols.

SURVEILLANCE
13 COUNTRIES

BURKINA FASO officials developed and validated SOPs for the real-time surveillance of highly pathogenic avian influenza (HPAI), anthrax, and brucellosis.

VIETNAM's Administration of Medical Services, Department of Animal Health, and regional Public Health Institutes supported training on sample collection, biosafety, and laboratory testing of COVID-19 for 24 provincial CDCs, 61 hospitals, and nine animal health laboratories.

RESPOND

LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES
10 COUNTRIES

In **BANGLADESH**, the development of a "roadmap for law enforcement engagement in the response of the COVID-19" strengthened collaboration between public health and security authorities.

RISK COMMS
9 COUNTRIES

NIGERIA — in collaboration with Airtel — reached more than one million people per day with voice and text messages on social distancing, safe hygiene practices, and other non-pharmaceutical interventions related to COVID-19. In addition, similar messaging has broadcasted across 38 radio stations in 15 states.

PAKISTAN conducted community awareness sessions for more than 1,000 community leaders about best practices for COVID-19 prevention. 47 media talks were also arranged for public awareness of COVID-19 preventive measures.

MEDICAL COUNTERMEASURES (MCMs)
13 COUNTRIES

BURKINA FASO and **SIERRA LEONE** finalized Emergency Supply Chain Frameworks (capable of sending and receiving MCMs) that can be used, as needed, to respond to an infectious disease outbreak. **UGANDA** utilized its Emergency Supply Chain Framework in response to the COVID-19 pandemic, improving the availability of personal protective equipment (PPE) and other critical commodities.
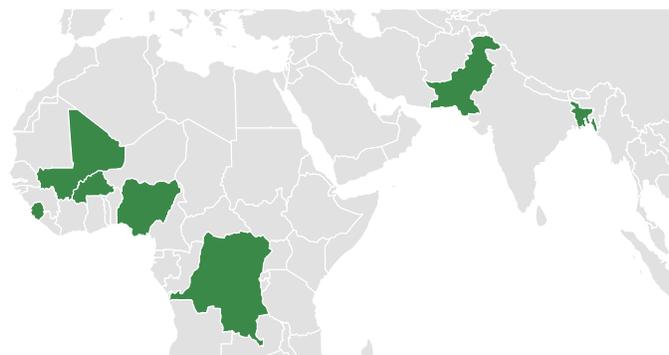
The **DRC**'s surveillance teams worked with community healthcare workers to monitor all people who came into contact with Ebola cases. Local health care workers were trained on personal protective equipment equipping and removal procedures.

EMERGENCY REPONSE OPERATIONS
15 COUNTRIES

PAKISTAN established District Disease Surveillance and Response Units (DDSRUs) in all 158 districts of the country to identify and monitor COVID-19 cases and to coordinate surveillance and outbreak response activities. In addition, all six Provincial Disease Surveillance and Response Units (PDSRUs) have been refurbished and strengthened.

The COVID-19 pandemic was the first true test of **BURKINA FASO**'s Emergency Operations Center (EOC). The EOC and the National Institute of Public Health rose to the challenge as both played essential roles in coordinating the COVID-19 response in the country.

EMERGENCY PREPAREDNESS
10 COUNTRIES

MALI conducted training on cholera prevention and established oral rehydration points in high-risk communities. The trainings culminated in simulations to test roles, responsibilities and coordination mechanisms in the event of a suspected cholera outbreak.

PAKISTAN's National Public Health Institute (NPHI) has provided personal protective equipment, lab supplies, test kits, and infection prevention and control training to provincial COVID-19 labs throughout the country strengthening their COVID-19 response.

Evidence of GHSA Impact in 2020

While the COVID-19 pandemic remains the highest priority, other serious outbreaks have also occurred in the past year. These include the second largest Ebola outbreak in history in the Democratic Republic of the Congo (DRC), which was declared over in June 2020. New Ebola outbreaks emerged in Guinea and the DRC in 2021. In 2020, there were also outbreaks of cholera, measles, vaccine-derived poliovirus, Lassa fever, Rift Valley Fever, plague, Crimean-Congo hemorrhagic fever (CCHF), and dengue virus. In some regions, these diseases resulted in higher mortality rates than COVID-19.

Most of the responses to the outbreaks described below were led by partner countries leveraging the improved capacities built with the help of GHSA, the U.S. Government, and other partners.

Laboratory scientists processes and test COVID-19 specimens at the Ethiopian Public Health Institute. Photo: Anne Purfield, CDC Ethiopia

PREVIOUS GHSA INVESTMENTS WERE LEVERAGED FOR COVID-19 RESPONSE IN PARTNER COUNTRIES

With the onset of the COVID-19 pandemic, all countries needed to take measures to contain and mitigate the spread and impact of the virus. The 19 GHSA Intensive Support partner countries were able to build upon the health security platforms and programs developed with the help of GHSA support to mount their COVID-19 responses. Here are a few examples:

- **Emergency Operations Centers** (EOCs) played central roles in the national responses to the COVID-19 pandemic in more than 15 of the 19 GHSA partner countries. For example, in Ethiopia, the EOC led active case search and contact tracing, outbreak response screening at points of entry, call center management, and the development of guidelines and protocols.

- **Risk communication programs** were utilized to inform populations about the threat of infection from COVID-19 and the public health measures needed to reduce the risk of transmission as well as to counter misinformation in 15 GHSA partner countries. For example, in July 2020, Bangladesh risk communication programs reached more than 20 million individuals via FM radio and more than 56 million via television with COVID-19 public service announcements to dispel myths and disseminate correct information.

- **Infection prevention and control** (IPC) programs were significantly expanded to help improve triage and isolation; water, sanitation, and hygiene (WASH); and waste management in key health facilities across 13 of the 19 GHSA partner countries. For example, IPC capacity in hospitals in Dakar, Senegal positioned the Ministry of Health to better manage the first wave of suspected COVID-19 cases in the capital city.

- **National laboratory systems** helped strengthen COVID-19 diagnostic testing capacity, including specimen transport, across 14 partner countries. For example, Mali extended its specimen transport system to more regions, helping to transport thousands of samples for COVID-19 testing. In Senegal, GHSA investments in three laboratories enabled them to serve as reference laboratories for COVID-19 testing.

- **Workforce:** Sixteen partner countries documented universal engagement of Field Epidemiology Training Program (FETP) graduates and significant engagement of trainees across multiple response activities. These included data collection, response, and investigation of COVID-19 cases and contacts, as well as support for border screenings, risk communication, and response coordination at national, regional, and district levels. Graduates also frequently filled coordination and leadership roles. In addition, trainees of the One Health University networks in Asia and Africa supported COVID-19 response efforts in Risk Communication and Community Engagement (RCCE), IPC, and case management across nine intensive focus countries.

- **Rapid response and contact tracing:** Rapid response teams and contact tracing programs mobilized to help meet the challenge of COVID-19. For example, Côte d'Ivoire developed an electronic alert management and data collection tool to strengthen case investigation, contact tracing, and management of surveillance data at the national and sub-national levels which helped improve the ratio of identified contacts to cases from January 1, 2020 to July 1, 2020.

- **Community-based surveillance:** Ongoing GHSA support for community-based surveillance helped partner countries to expand these and similar activities. For example, Cameroon trained community volunteers on the use of mobile cinema as a tool to inform people how to identify, report and prevent COVID-19 and other health threats.

- **Points-of-entry** work in several GHSA countries was expanded to address COVID-19. For example, in Cameroon the PHEOC was used to strengthen surveillance systems at ports-of-entry (PoEs) by providing technical assistance with surveillance tools, case definition and reporting forms, and guidelines for COVID-19 at PoEs.

Africa CDC Contributes to a Continent-Wide Response: The Africa Centres for Disease Control and Prevention (Africa CDC) is coordinating a continent-wide response to COVID-19, thanks in part to critical support and past investments from the United States. On January 27, 2020, before the first recorded case, Africa CDC activated its emergency management system. On February 14, 2020, Africa recorded its first case of COVID-19, exactly three years and 14 days after the launch of the Africa CDC in Addis Ababa, Ethiopia. On February 22, 2020, Africa CDC convened an emergency meeting of all ministers of health to develop a Joint Continental Strategy for COVID-19. By March 2020, all African heads of state adopted this strategy. Following the strategy, the Africa CDC began six pandemic response initiatives across the continent focused on surveillance and testing, medical supply availability, health and social measures, travel and economies, genomics, and vaccines. In early 2020, the African continent had just three countries with COVID-19 diagnostic capacity, by mid-summer it reached 49. The Africa CDC linked surveillance systems across Africa to build a continent-wide view of the pandemic, created groups for experts to share data and best practices,

and worked to speed up procurement of vaccines. The Africa CDC's efforts to slow the spread of COVID-19 have been significant for a continent with more than 1.3 billion people and significant health system challenges. While the pandemic is not over, the Africa CDC is quickly becoming an example of how U.S. Government investments internationally can help build capacity to manage infectious disease outbreaks across the world.

Uganda's Proactive Response to COVID-19: Uganda's EOC activated its national task force to prepare for the COVID-19 pandemic and established an incident management structure before any cases were detected in the country. U.S. Government GHSA investments also helped improve Uganda's laboratory capacity, including the safe transport of samples, and helped the country set up two mobile laboratories along with a new team to support increased COVID-19 testing. From March 21, 2020 to December 1, 2020, Uganda processed over 625,000 COVID-19 samples. Countrywide testing for COVID-19 was made possible by a sample-and-result-return network that monitors samples from collection facilities to testing labs and returns results through an electronic download system.

Practical session during the In-Service Applied Veterinary Epidemiology Training programme in Senegal. ©FAO/ Youssou Ndiaye

Event-Based Surveillance Tracks Down COVID-19: U.S. Government investments in partner countries' event-based surveillance (EBS) capacity, a critical component of early warning and response for health threats, were utilized for detection of COVID-19. The 'Training Curriculum for Event-Based Surveillance in Health Facilities and Communities' and accompanying online courses were made available in 2020 and offer guidance and instructions to public health practitioners to facilitate training for country-level EBS implementation in both health facilities and communities. Supporting the implementation of EBS systems in countries around the world will enhance our collective ability for early detection and response of emerging health threats. For example, in Kenya existing EBS expanded to include COVID-19 detection in 230 communities and three health facilities. The number of trained public health staff and community health workers increased fivefold from September 2018 to June 2020, totaling 2,028 persons trained in EBS in two counties. From June 2020 to November 2020, 696 COVID-19 cases were detected through EBS. Similarly, Cameroon trained 3,852 people in EBS at the community level from 2018 to 2020. EBS was implemented in 48 health districts across three regions and expanded to include COVID-19 surveillance in 2020. From March to September 2020, 193 COVID-19 events were reported, 25% of which were identified as potential clusters.

Expanding Polio and Measles Surveillance to include Priority Zoonotic Diseases: In areas at high risk of infectious diseases, both Ethiopia and Kenya expanded their polio and measles active surveillance systems to include priority zoonotic diseases. In Ethiopia, the additional focus was on rabies, anthrax, and brucellosis. To accomplish this, the Government of Ethiopia trained trainers and then conducted a cascade training of more than 10,000 community volunteers, health extension workers, health development leaders, and animal health assistants on active surveillance techniques. The national community-based surveillance (CBS) manual was revised to include the three zoonotic diseases, and 10,000 posters were distributed in three languages to raise awareness of the target diseases. In the past year, 35 rabies, 12 anthrax, and 11 brucellosis cases in animals were detected and reported, as well as 22 rabies and one anthrax case in humans. A similar effort in Kenya integrated anthrax, rabies, brucellosis, and Rift Valley Fever into its active CBS program. This was accomplished by training more than 1,000 veterinary officers, animal health assistants,

"We must do everything for our citizens," say MediPIET fellow Dr. Arayik Papoyan, pictured above. Dr. Papoyan screens passengers boarding a repatriation flight with Armenian compatriots stranded in Rome, Italy (March 2020). Photo: MediPIET

community mobilizers, and health workers on CBS, the priority zoonotic diseases, and risk communication. In addition, the Government of Kenya conducted more than 4,900 community zoonotic disease sensitization events, reaching more than 1.2 million people. During 2020, the Kenya CBS program reported 367 animal alerts, 70 clusters of animal deaths, 12 animal deaths with unusual bleeding, as well as other events.

Investigation of a Series of Camel Deaths of Unknown Etiology in Kenya: In May 2020, Kenya investigated and diagnosed the cause of a series of camel deaths of unknown cause using a One Health approach. The unknown disease mainly affected young camels and presented clinically as a respiratory syndrome characterized by nasal discharges, coughing and breathing difficulty, followed by sudden death. In light of evidence of Middle East respiratory syndrome coronavirus (MERS-CoV) infection in Kenya, and the zoonotic nature of MERS-CoV, the investigation was conducted using a multi-sectoral approach, drawing on the experience of the Ministry of Health, the Department of Veterinary Services, the Zoonotic Disease Unit (ZDU), and government staff of the affected counties. Samples were collected from more than 120 camels, with post-mortems on four carcasses. Key informant interviews were conducted with veterinary staff, local leaders, camel owners, and camel herders to understand the epidemiology of the outbreak. The medical officers conducted interviews with affected households to establish if similar respiratory syndromes affected household members during the outbreak period. Sera and whole blood samples were tested at the Kenya Central Veterinary Laboratory and the International Livestock Research Institute, which ruled out peste des petits ruminants (PPR), Rift Valley Fever, and hemorrhagic septicemia as the cause of the unknown illness. Laboratory diagnosis based on the collected samples identified Mannheimia haemolytica as the potential cause of the mortalities. This coordinated investigation and follow-up in Northern Kenya provides an excellent example of a concerted, multi-sectoral response to a potential public health threat.

Cameroon Rapidly Addresses Monkeypox Threat: Following the notification and confirmation of two human cases of monkeypox in the Ayos district on January 8, 2020, the Cameroon Ministry of Livestock, Fisheries, and Animal Industries (MINEPIA), the Ministry of Health (MOH), and the National Program to Combat Emerging and Reemerging Zoonotic Diseases (NCPZD) jointly conducted a field investigation. A total of 49 rodents from ten different species were captured and samples were collected for laboratory analysis, all of which tested negative for the suspected monkeypox virus. MINEPIA, with the help of the MOH and NPCZD, organized an awareness-raising meeting with local community members and health professionals from both the human and animal sectors around the subjects of the case definition of monkeypox, biosafety, infection control, isolation of cases, and how to avoid risky behaviors related to the virus (e.g., cooking and safe handling of bush meat). It was the first time that these three national entities planned and implemented a joint multi-sectoral disease investigation and community-based outbreak response. This coordinated operation has helped consolidate the One Health approach in Cameroon. No further cases of monkeypox have been detected in the district.

Sierra Leone's One Health Approach Improves Wildlife Disease Surveillance: To expand disease surveillance and to promote a One Health approach, the Government of Sierra Leone (GoSL), with U.S. support, established a Wildlife Unit and a National Wildlife Surveillance System in the Ministry of Agriculture and Forestry (MAF). The GoSL also designed a National Wildlife Surveillance Strategic Plan (2020–2025). These efforts have made a difference in Sierra Leone's ability to address infectious disease threats. For example, in 2020, the government sensitized six communities bordering wildlife areas on infectious disease transmission routes, prevention and control of priority zoonotic diseases, as well as how to live safely with animals (domestic and wild). The community sensitization meetings were conducted by the Ministry of Agriculture and Forestry (MAF), the National One Health Program, and the Tacugama Chimpanzee Sanctuary. In addition, 35 monitors (20 women and 15 men) were trained on surveillance and reporting of wildlife mortalities, morbidities, and abnormalities, and sample collection, safe handling, storage of laboratory samples, as well as biosafety and biosecurity. The monitors will be

instrumental in implementing active surveillance for testing for tuberculosis, salmonellosis, and other priority zoonotic diseases along the interface between wildlife and domestic animals. The involvement of the MAF and the Wildlife Unit will help build a stronger animal diseases surveillance network for Sierra Leone.

DRC Response to the second largest Ebola Outbreak in History: Between August 2018 and June 2020, the DRC experienced its tenth Ebola outbreak, the second largest in world history. With significant leadership of local health professionals and the national government, thousands of health workers were trained, 16,000 local frontline responders were mobilized, 250,000 contacts were registered, and more than 200,000 samples were tested. FELTP graduates and trainees were deployed in various Ebola-affected health zones where they led alerts investigations of Ebola suspected cases, supervised

contact tracing, and developed the daily reports that provided updates of the field situation of the outbreak (situational reports). Humanitarian partners played critical roles in supporting life-saving health, nutrition, protection, and water, sanitation, and hygiene (WASH) programs, as well as food assistance and activities in other sectors. In addition, the response featured the widespread use of advanced therapeutics for the first time and the most extensive use of an effective Ebola vaccine (rVSV-ZEBOV-GP), resulting in more than 300,000 persons vaccinated.[4] The responses were co-led by local health officials and response plans were developed with national leadership. While there were many challenges to this long outbreak (e.g., community resistance, insecurity), the DRC demonstrated capabilities in application of the basic public health measures (e.g., contact testing, testing, case finding) essential for effective response to future outbreaks.

Community Support Team (CST) volunteer speaking to a member of the public, as part of the CST initiative to slow the spread of COVID-19. ©FAO/Asif Jilani

Guinea's Experience Responding to Ebola in 2014 Improved its Health Security: Since the Ebola outbreak in 2014, the U.S. Government has worked with the Guinea Ministry of Health (MOH) and other partners to build capacity and improve outbreak response in five critical areas of health security: surveillance, workforce development, laboratories, risk communication, and emergency management and response.

- This included the development of a nationally coordinated network of EOCs, including one national and 38 district-level EOCs. Members of Guinea's MOH were able to train additional staff. Guinean officials also had risk communication plans, trained staff, and experience developing and disseminating infectious disease messaging.

- Guinea's national public health institute, the National Agency for Health Security (ANSS), was created to oversee critical public health functions and work in coordination with the EOC. The ANSS has provided strong leadership and management for the COVID-19 response.

- Established in Guinea in 2017, FETP trains "disease detectives" who serve as boots on the ground during outbreaks. Guinea's "disease detectives" quickly responded to the COVID-19 pandemic, using their outbreak management and response expertise, and played a leading role in surveillance and contact tracing.

- Investments in national and regional laboratory capacity made it possible for Guinea to test for COVID-19 in-country.

Taken together, the work in Guinea has dramatically improved health security capacity.

THE TABLE BELOW, PRESENTED BY ANSS DIRECTOR DR. SAKOBA IN MARCH 2021 AT THE HIGH LEVEL EVENT ON RESPONSE AND RESILIENCE TO EBOLA, HIGHLIGHTS THESE IMPROVEMENTS.

	Ebola Response in 2014	Ebola Response in 2021
Human Resources	International experts	179 FETP available in-country
Surveillance	Notification 4 months after 1st case	Notification 15 days after 1st case
Laboratory	• Absence of local capacity for confirmation • Results: 7 days	• Local capacity for confirmation • Results: 1 day
Data management	Excel database managed by partners	DHIS2 managed by the country
EOC	Temporary EOC managed by partners	Activation of existing EOCs by ANSS
Coordination	Disjointed	• Unified under national leadership • Computerized/internet/ video-conferencing

Laboratory testing for rabies in Sierra Leone. ©FAO/Uzman Ba

Leveraging the Whole of Government to Drive Progress

U.S. Government departments and agencies deploy their numerous programs and activities to help achieve the measurable outcomes described in this report. Examples below highlight how unique sectors have a role to play to operationalize the whole-of-government approach:

Improving Biosafety and Biosecurity in Indonesia through the One Health Laboratory Network (OHLN): The U.S. Department of State's Office of Cooperative Threat Reduction in the Bureau of International Security and Nonproliferation (ISN/CTR) works to counter biological threats. Through its Biosecurity Engagement Program (BEP), ISN/CTR implements capacity-building foreign assistance programs to prevent, detect, and mitigate emerging biological threats. An example of this programming is BEP's work with the Indonesian One Health University Network (INDOHUN), a national network of 35 universities, and the National Commission for Zoonosis Control, to help establish and strengthen OHLN diagnostic and surveillance capabilities, linking public and private laboratories. Under Government of Indonesia (GOI) regulations and systems, OHLN supports the rapid identification of zoonotic diseases emerging among human and animal populations and develops centers with regional expertise in the field of disease genomics. This project will help with the implementation of a five-year plan that links major Indonesian University laboratories and strengthens coordination with the GOI system for improved disease detection, and biosecurity and biosafety practices.

Department of Defense Global Health, Biosafety, and Biosecurity Engagement: The U.S. Department of Defense (DOD) has a long history of global health engagement and contributes to GHSA through existing funding mechanisms and activities that support force health protection, countering weapons of mass destruction, and security cooperation. These include Combatant Command initiatives such as the African Partner Outbreak Response Alliance (APORA), an African-led, U.S. Africa Command facilitated series of key leader engagements that focus on building health security capacities among partner nations while promoting effective military-civilian partnerships.

Since 2016, DOD has also worked with partner militaries, and through the GHSA Steering Group, to promote defense sector engagement in GHSA. During the 2020 GHSA Ministerial Meeting, the United States Indo-Pacific Command and the Australian Defence Force co-hosted a defense-focused side event, the latest in a series of such events held during the past three Ministerial Meetings to increase defense sector stakeholder participation, facilitate dialog between sectors, and increase awareness of defense sector contributions to GHSA objectives.

The Defense Sector is an Important Partner for Achieving Health Security

National security and global health security are inextricably linked. As the defense sector performs its missions around the world, it also brings unique capabilities to bear in support of civilian-led GHSA objectives. Military forces, including those responsible for health and medical readiness, are often uniquely positioned along borders and in remote or difficult to access areas, and their efforts to prevent, detect, and respond to disease outbreaks among military personnel can also contribute to the health security of surrounding communities. The defense sector conducts biosafety and biosecurity assessments and training to prevent accidental release or deliberate misuse of pathogens, conducts bio surveillance, and develops medical countermeasures and diagnostics to detect infectious disease threats as early as possible. In acute crises when civilian capacity to respond is overwhelmed, the defense sector can also bring command and control, logistical support, and other support to civilian authorities, including first responders and direct medical care, to response operations.

GHSA is a multisectoral, One Health effort. In many developing countries, the defense sector is part of the first response to serious security threats to the country.

Improving Regional Scientific Collaboration in the Middle East: The DOD Cooperative Threat Reduction (CTR) Program, through the Biosciences Fellowship Program, began in 2018 to promote biological security and safety in the Middle East region by increasing the technical capabilities of researchers and establishing a regional scientific counter-threat network. The program supports 12 fellowships per year at host sites located in the U.S., Europe, Africa, Middle East, and Asia. Research topics include avian influenza, Rift Valley Fever, Crimean-Congo hemorrhagic fever, and other especially dangerous pathogens. This scientific collaboration promotes both technical capabilities and international best practices in biosecurity and ultimately reduces biological threats through sustainable research cooperation and regional networks.

Detection of Emerging Threats: USAID has supported the most comprehensive effort to date to detect, identify, and characterize known and new zoonotic viruses in the world's most vulnerable hotspots for disease emergence. From 2014 to 2020, the PREDICT project strengthened 42 laboratories across Africa and Asia to test more than 68,000 animals and 16,000 humans for high priority viral families which include viruses such as Ebola, Marburg, MERS-CoV, Nipah, and SARS-CoV that have caused high-impact outbreaks, epidemics, and pandemics. More than 1,100 unique viruses (958 new, 215 previously-known) were detected, some of which (e.g. the new Ebola Bombali) were prioritized for further characterization of their potential to spill over to humans. PREDICT also conducted in-depth studies of 1,687 individuals to identify high risk behaviors and practices associated

with spillover of zoonotic viruses. Following the start of the COVID-19 pandemic, PREDICT labs screened samples from Asia (collected between 2009 and 2019) for evidence of prior infections with coronaviruses. SARS-related coronaviruses were detected in nine animals (from Cambodia and Vietnam) and non-SARS-related coronaviruses were detected in 72 additional animals (from Cambodia, Laos, Thailand, and Vietnam); four of these viruses (two SARS-related, two non-SARS-related) had never been detected before. Among people tested, 35 had antibodies to SARS-related coronaviruses and three had antibodies to other non-SARS-related coronaviruses. In the first few months of the pandemic, PREDICT testing protocols were also used to detect active COVID-19 cases in people.

Prioritizing Zoonotic Diseases using a One Health Approach: CDC's One Health Zoonotic Disease Prioritization (OHZDP) Process brings together representatives from human, animal, and environmental health sectors, as well as other relevant partners in a country, region, or other area to prioritize zoonotic diseases of greatest concern and develop next steps and action plans to address the priority zoonoses in collaboration with One Health partners. The OHZDP process uses a transparent approach and incorporates equal input from all represented One Health sectors working at the human-animal-environment interface. The OHZDP has been implemented in 26 locations at the subnational, national, and regional levels.
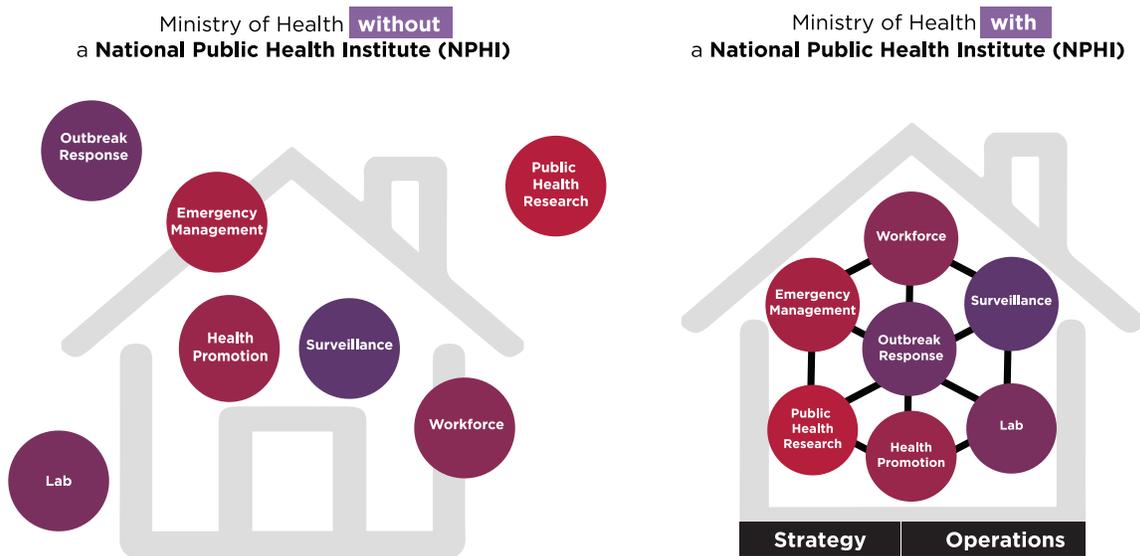
In 2020, CDC's One Health Office, in collaboration with trained facilitators from the Food and Agriculture Organization of the United Nations (FAO), conducted a virtual sensitization on the OHZDP in Indonesia for more than 100 ministerial representatives and partners. CDC and FAO facilitator trainers conducted a virtual introductory training session on the OHZDP process for 22 ministerial representatives from Indonesia.

Improving Country Animal Health Surveillance and Laboratory Systems: The USAID-FAO partnership has aided the development of animal health surveillance systems as a step toward developing coordinated surveillance systems for zoonotic diseases and pathogens identified as joint priorities for both public and animal health authorities. To improve these systems, FAO has used the Surveillance Evaluation Tool (SET) in 14 countries in Africa to develop country-specific action plans. The SET is a comprehensive, standardized assessment of animal health disease surveillance focused on approximately 90 indicators.
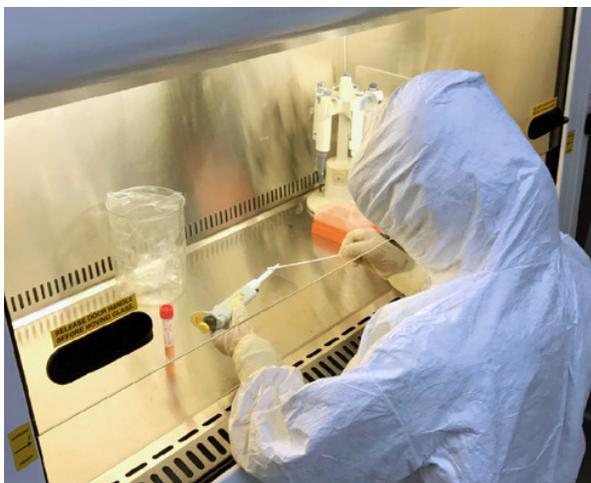
Disinfecting a pipette surface within a biosafety cabinet after processing and testing a sample at the Pasteur Institute of Nha Trang (PINT) laboratory in Vietnam. Photo: Mr. Truong Tien Dat, CDC Vietnam

Ministry of Health **without**
a **National Public Health Institute (NPHI)**

- Outbreak Response
- Emergency Management
- Public Health Research
- Health Promotion
- Surveillance
- Workforce
- Lab

Ministry of Health **with**
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- Lab
- Health Promotion

Strategy | **Operations**

In this participatory approach, National Veterinary Services are involved in all phases of these assessments. SET results are automatically generated, providing immediate recommended steps for improvement. In addition, with USAID support, FAO has assisted seven African countries to put in place a Laboratory Information Management System (LIMS), a powerful tool to improve the management of laboratory data and external reporting to enable early detection and targeted, cost-effective response to zoonotic disease outbreaks. LIMS is now linked with the laboratory infrastructure network analytic systems in many of these countries. These systems optimize the laboratory system by providing interactive lab capacity maps, sample transport routing, and capacity development analysis. Together, these tools are helping to improve the detection of zoonotic disease threats in many African countries.

Building Strong National Public Health Institutes (NPHI): Establishing and strengthening NPHIs is integral to CDC's mission, as these institutes help connect a country's public health functions and play a pivotal role in their ability to address potential health threats. Simply put, they serve as the "home" for a country's public health activities. By creating a NPHI, countries can collect and use data more effectively, creating a better path for implementing and monitoring science-based programs. NPHIs sustain CDC's investment in global health security by creating permanent institutions that can coordinate public health efforts. This dedicated foundation helps countries build and strengthen public health

competencies and achieve compliance with, and domestic implementation of, the International Health Regulations (2005). CDC's support to more than 30 countries building and strengthening their own NPHIs has ranged from technical assistance provided from abroad, to more intensive hands-on and on-the-ground technical assistance. NPHIs can lead a country's effort to more effectively prevent, detect, and respond to public health threats that can cost lives, cause political and economic instability, and spread to neighboring countries.

Risk Communication and Community Engagement (RCCE) Program: Under the USAID RCCE project Breakthrough Action, functional coordination structures and risk communication country strategies to reduce exposure to priority zoonotic diseases (PZDs) have been built in Côte d'Ivoire, Sierra Leone, Ethiopia, Guinea, DRC, Senegal, and Mali. These countries were able to utilize their RCCE capacities to help respond to new and ongoing zoonotic disease threats, including Ebola and COVID-19. In Côte D'Ivoire, RCCE efforts developed a multifaceted rumor management system that tracked rumors through hotline calls and other means which were able to identify over 1,700 rumors, analyzing and providing regular responses to misinformation through media broadcasts, community action and other media. Similar rumor management systems have been set up in eight additional countries. RCCE activities are harnessing the power of mobile technology to provide on-demand information to address outbreaks. Additionally, in DRC an interactive voice response (IVR) platform was able

to provide critical, accessible information on the Ebola outbreak throughout the country's 24 provinces. In March, the platform incorporated COVID-19 messages that were heard more than 2 million times. RCCE activities have helped governments reach almost 5 million people on education on One Health and PZD content through mass media and community engagement across 11 countries. More than 35 One Health high-level guidance documents as well as 13 comprehensive message guidance packages have been developed. More than 4,230 people working in human health, animal health, and media sectors have been trained in One Health risk communication.

The Field Epidemiology Training Program: Since 1980, the FETP has helped train more than 19,000 disease detectives in over 80 countries. FETP provides expertise and technical support to help partner countries strengthen existing public health infrastructures and improve abilities to respond to health threats quickly and effectively. In 2020, FETPs trained over 600 disease detectives from 58 countries; an estimated 90% of graduates stay in their country, helping to strengthen their health systems. FETP trainees and graduates have been critical to the response to COVID-19 and other diseases.

- Cameroon, Kenya, Saudi Arabia, and Vietnam all have FETP graduates serving on COVID-19 in the areas of rapid response, contact tracing, points of entry screening, and conducting surveillance.

- FETP trainees have also been on the frontlines of Ebola response in the DRC, Guinea, and Uganda. Other FETP work has included acute flaccid paralysis (AFP) and poliomyelitis, Crimean-Congo hemorrhagic fever, HIV/AIDS, Lassa fever, and malaria.

- Finally, FETP graduates and trainees in Ethiopia support enhanced surveillance, mortality surveillance, and hospital-based pneumonia surveillance. Trainees lead data analysis, draft guidelines, and conduct virtual training. More than 100 trainees and 40 graduates have worked on active case search, contact tracing, point of entry screening, and laboratory testing at the national and regional levels.

These are just a few examples of many that demonstrate that FETPs:

1. Increase partner countries' ability to detect and respond to threats;

2. Address the severe worldwide shortage of skilled epidemiologists; and

3. Build critical relationships with other countries.

CDC-Cameroon's FETP RA, Dr. Adama N'Dir, and GHSA Coordinator Mr. Gordon Okpu participate in ToT of management of severe cases of COVID-19 with WHO/Afro expert at the General Hospital Littoral Region, Cameroon (March 2021). Photo: Daphne Moffett

Building a One Health Workforce: The USAID-supported One Health Workforce - Next Generation project (OHW-NG), in partnership with the Africa One Health University Network (AFROHUN) and the Southeast Asia One Health University Network (SEAOHUN), supports workforce development in 57 universities across 10 GHSA Intensive Support countries: Cameroon (3 universities), Côte d'Ivoire (1), DRC (2), Ethiopia (3), Indonesia (20), Kenya (2), Senegal (2), Tanzania (2), Uganda (2), and Vietnam (20). In 2020, within the 10 countries, the OHW-NG Global Team and Networks trained more than 18,900 current and future health professionals (including more than 17,500 students, 400 in-service professionals, and 240 faculty members) to further develop technical and collaborative One Health competencies, with topics ranging from zoonoses and infectious diseases to systems thinking, gender, risk communications, and policy. They also provided scholarships for four students to pursue advanced studies in One Health related programs. The Networks in the GHSA Intensive Support countries collectively developed 22 new training materials and curricula for future and current in-service professionals, supported more than 5,160 participants across 35 student One Health innovation clubs, and held activities at 43 One Health field sites for community-based education, research, and outreach to address One Health challenges.

The Networks helped to transform the workforce by placing 18 OHW-NG graduates into targeted sectors including government ministries, universities, and NGOs to gain practical experience in One Health.

Global Emergency Alert and Response Service (GEARS): CDC works around the clock to collect information about events that could pose serious public health threats. One element of this work is carried out by specialists in the Global Disease Detection Operations Center (GDDOC), who use event-based public health surveillance to track health threats across the globe and around the clock. These specialists gather information that public health experts use to quickly respond to outbreaks, before they become pandemics. Another element of this work is performed by the Global Rapid Response Team (GRRT), a team of more than 500 well-trained CDC subject matter experts, who stand ready to strengthen emergency response capacity whenever and wherever needed. Together, GDDOC and GRRT form the Global Emergency Alert and Response Service (GEARS), one functional unit that seamlessly transitions between disease detection and response activities. Every day, GDDOC experts monitor 30-40 public health threats around the world. In 2020, GEARS monitored more than 100 outbreaks of international importance in 224 countries and territories and mobilized more than 300 GRRT members for over

Dr. Abel Wade, LANAVET Director, shows Mr. Gordon Okpu, CDC GHSA coordinator, the incinerator funded by DTRA's investment in GHSA-Cameroon. This incinerator is one of few in Cameroon able to properly destroy infected large animal corpses. Photo: Daphne Moffett/CDC

Communicating safely with communities in the midst of COVID-19 remains a priority for USAID.
Credit: USAID, StopPalu+

Photo: AfricaCDC

700 distinct deployments in more than 20 countries. This team supported outbreak response and provided public health expertise, logging more than 31,800 combined days of deployment in responding to 242 outbreaks of 58 different diseases of international importance across 229 countries and territories.

USAID's Program Helps Combat COVID-19 through Strengthened Infection Prevention and Control (IPC): GHSA investments in IPC were leveraged in 2020 as the world sought to end COVID-19 transmission and protect healthcare workers and in-coming patients. USAID's Medicines, Technologies and Pharmaceutical Services (MTaPS) project strengthened IPC, supply chain management and health care waste management in over 3,100 health care facilities across 14 countries. More than 38,000 individual health care workers (22,000 women) received training on engineering controls, ensuring triage, early recognition, and source control, appropriate donning and doffing of PPE, adequate sanitation and handwashing methods, and COVID-19 specific IPC protocols. MTaPS assisted partner countries in developing IPC guidance for healthcare workers (HCW), health facility workers, patients, family members, caregivers, and visitors, and rolling out the guidance using a train-the-trainer model, including disseminating critical printed materials and guides. For example, in Kenya, MTaPS helped support the roll-out of the national guidance as well as training sessions in all 47 counties to improve IPC in health care and community settings through an innovative mix of online, webinar, and in-person instruction.

The Global Laboratory Leadership Programme (GLLP) Develops the Next Generation of Leaders: The Global Laboratory Leadership Programme (GLLP) is a unique workforce development initiative that fosters and mentors current and emerging laboratory leaders to build, strengthen, and sustain national laboratory systems. The GLLP is led through the collaboration of CDC, the Association of Public Health Laboratories, the European Centre for Disease Control and Prevention, the Food and Agriculture Organization of the United Nations, the World Organization for Animal Health, and the World Health Organization. The program combines learning with mentorship, practical experience, and a community of practice to support individual learning and laboratory systems strengthening, all with a One Health approach, which recognizes that the health of people is closely connected to the health of animals and the shared environment. As a result of the COVID-19 pandemic,

First vial of COVID-19 vaccines administered in Ghana. Credit: Aimee Ogunro/USAID
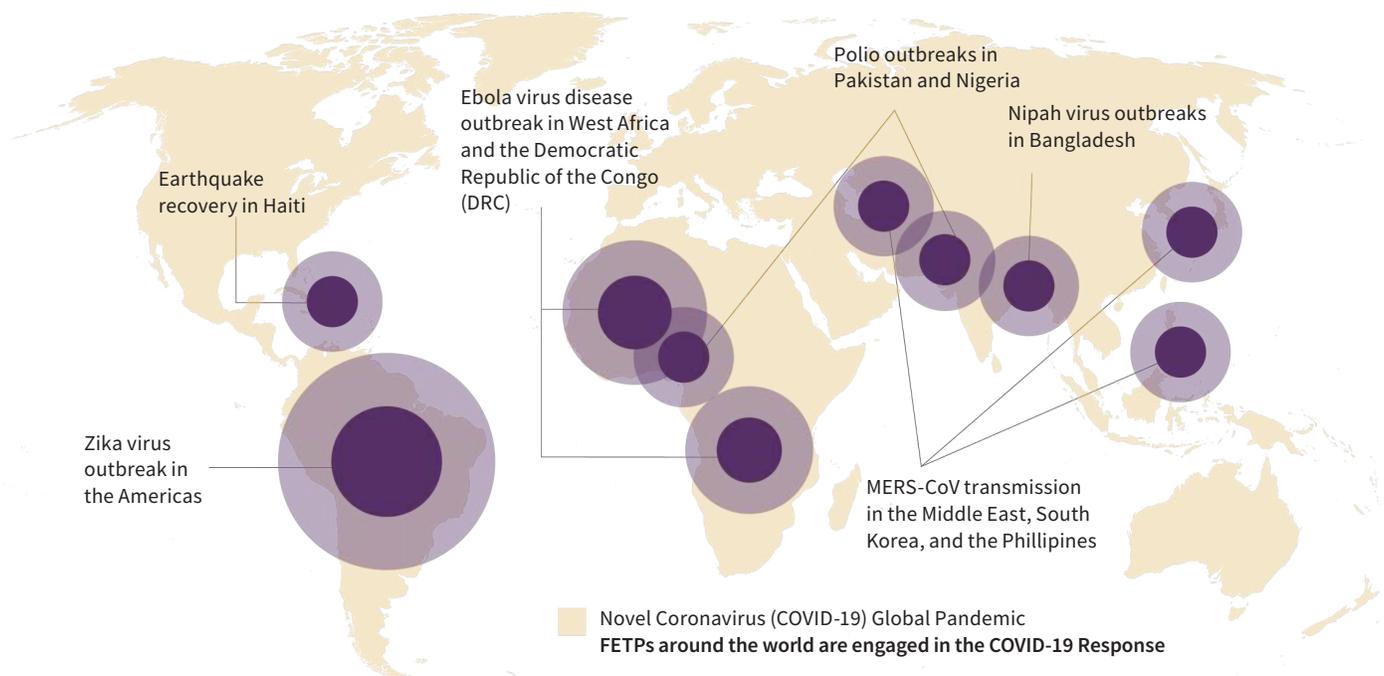
the program pivoted. In 2020, the program in Pakistan and Liberia was adapted for remote learning utilizing recorded presentations and virtual live class discussions delivered via online meeting platforms. The feedback from the new format will continue to assist with the development of the GLLP Learning Package, which serves as the curriculum and instructional guide for the program. The COVID-19 pandemic has highlighted that laboratories and their capacity to rapidly test and diagnose illness are essential to any public health response. Specialized training for laboratory leaders, such as the GLLP, support a country's ability to respond to future outbreaks and health emergencies.

Advancing Antimicrobial Stewardship (AMS):

USAID, through the Medicines, Technologies and Pharmaceuticals Services (MTaPS) program, has been helping countries develop policy frameworks to contain the threat of antimicrobial resistance (AMR) in a multi-sectoral fashion. Stopping AMR requires a One Health approach with agriculture, animal health, public health, and environmental sectors working together. With MTaPS support, Burkina Faso, Cameroon, Côte d'Ivoire, DRC, and Mali completed assessments

of AMR guidelines and policies in both the human and animal sectors. For example, MTaPS helped the MOH to conduct a situational analysis of policies and regulations on using antibiotics in the public health sector and supported the Ministry of Livestock and Animal Husbandry to conduct the same analysis for the animal sector. MTaPS subsequently helped the government to develop a multi-sectoral national AMS plan. In Ethiopia, MTaPS supported the revision of the national essential medicines list (EML), last updated in 2014, in line with the WHO recommendation to categorize antibiotics into access, watch, and reserve (AWaRe) groups to improve prescribing and use of antimicrobials. This is the first time in Ethiopia that antibiotics have been listed according to the AWaRe categorization. In addition, MTaPS supported the MOH to revise the national standard treatment guidelines (STGs), which also included the AWaRe categorization of antibiotics. In Kenya, MTaPS, in collaboration with the University of Nairobi School of Pharmacy, developed a pre-service AMS curriculum, which includes an introduction to AMS; effective AMS interventions; monitoring of AMS program; and planning and establishing an AMS program at a health facility.

SINCE 1980, CDC HAS HELPED TRAIN MORE THAN 18,300 DISEASE DETECTIVES IN OVER 80 COUNTRIES THROUGH ITS FLAGSHIP GLOBAL FETP

Polio outbreaks in Pakistan and Nigeria

Ebola virus disease outbreak in West Africa and the Democratic Republic of the Congo (DRC)

Nipah virus outbreaks in Bangladesh

Earthquake recovery in Haiti

Zika virus outbreak in the Americas

MERS-CoV transmission in the Middle East, South Korea, and the Phillipines

Novel Coronavirus (COVID-19) Global Pandemic
FETPs around the world are engaged in the COVID-19 Response

Public Health Emergency Management Fellowship (PHEMF): Developing Tomorrow's Global Emergency Management Leaders. CDC's PHEMF, a three-month field of study in Atlanta, provides participants with training and mentorship from CDC subject matter experts. CDC has trained 142 fellows from 36 countries and the African Union on emergency management. After returning to their home countries, fellows have been instrumental in establishing public health emergency operations centers (PHEOCs), contingency planning, training, and responding to public health emergencies. In 2020 PHEMF fellows:

- Helped develop Indonesia's first national response plan for COVID-19.

- Assisted in the development of Ethiopia's comprehensive capacity building plan for regional EOCs and emergency management training to improve workforce at the national, regional, and subregional levels.

- Worked on establishing six regional EOCs in Uganda and providing emergency management training to improve the PHEM workforce at the national, regional, and subregional levels.

- Served as the Incident Manager and health sector lead for their national COVID-19 response in Burkina Faso. PHEMF graduates have also served in key Incident Management System (IMS) functions such as logistics, planning, operations, and risk communications.

The PHEM fellows continue to develop sustainable capacity and serve as leaders, advisors, and influencers in their respective countries for multiple public health responses such as Ebola, measles, monkeypox, and COVID-19.

Photo: Dr. Tong Thi Ha, National Institute of Hygiene and Epidemiology

Public Diplomacy and Stakeholder Engagement

Collaboration across the U.S. Government, NGOs, and private sector partners from around the world is critical to the success of the GHSA. In 2020, the U.S. Government engaged in effective public diplomacy and active outreach through numerous international bilateral and multilateral initiatives to advance U.S. and broader GHSA objectives. The examples below highlight some of the collaborations and engagements that the United States undertook to advance global health security.

Encouraging Partner Commitments to Health Security: Since its inception, the United States has served on the GHSA Steering Group, helping to guide the effort and voicing strong support for meaningfully strengthening global health security. Steering Group members share experiences, lessons learned, and technical expertise with partners. In 2020, the United States helped launch the GHSA Commitment Tracker to collect, visualize, and track progress of commitments towards achieving the GHSA 2024 target. Leading by example, the United States documented commitments to identify and address health security gaps domestically, document progress and best practices, advance Steering Group priorities, and financially support GHSA implementation with select partner countries.

Amplifying U.S. Leadership at the GHSA Ministerial: The sixth GHSA Ministerial, hosted by the Royal Thai Government, November 18-20, 2020, offered a unique opportunity to promote the health security capacity improvements of our 19 GHSA partner countries achieved as a result of U.S. Government investments. The Departments of State, DHHS, CDC, DOD, and USAID collaborated on a variety of communications products for social and traditional media, including a fact sheet, blog posts, and social media messages highlighting examples of how U.S. Government training led to stronger, more robust health security to prevent, detect, and respond to infectious disease outbreaks. Examples included partnering with Airtel in Uganda on a public messaging campaign on social distancing and safe hygiene measures that reached over 1 million people per day. Other examples demonstrated how U.S. investments enabled the Senegal national public health laboratory network to test for COVID-19 and India's National Institute for Health and Family Welfare to provide Rapid Response Team training to 209 staff across 27 states.

International Visitor Leadership Program (IVLP) Combating Infectious Diseases: 2020 marked a shift in global health programming from in-person exchanges to virtual as the world responded to the COVID-19 pandemic. The U.S. Department of State's three-week IVLP program demonstrated extraordinary adaptability to these new conditions combining an initial in-person visit of 10 infectious disease experts from five West African countries with a follow-on virtual learning component after COVID-19 related events interrupted the trip. The United States and our GHSA partners recognize that stopping outbreaks at their source is crucial and must be addressed through a combination of policy, programs, and public awareness. IVLP introduces participants to a variety of information systems and public outreach programs that can strengthen local surveillance and response. The program focused on improving vector-borne disease control including: community outreach in communication; use information systems to improve disease surveillance; early warning and surveillance systems; and treatment of vector-borne diseases. The program featured meetings with representatives of NASA, DOD, and a variety of state, local, academic, and non-governmental partners in the United States' southern region where vector control surveillance and readiness are common practice. IVLP participants network with U.S. counterparts and apply for small grants projects via U.S. Embassies upon return to their home countries, in partnership with the U.S. Department of State's Bureau of Educational and Cultural Affairs.

Team of community mobilizers prepare for community sensitization activities shortly
after an Ebola outbreak was declared in Guinea. ©Breakthrough-ACTION

Looking Forward

The COVID-19 pandemic is one of the greatest international health crises in more than a century, with broad-ranging health, social, and economic consequences that will drastically change our world for years to come. With United States' support, the GHSA has been instrumental in building and sustaining countries' capacities to prevent, detect, and respond to numerous infectious disease threats. These capacities were leveraged across the world to respond to COVID-19, but despite significant progress, the world proved underprepared for the COVID-19 pandemic. More work still needs to be done, because strengthening health security also serves to strengthen overall health systems.

We must break the chronic cycle of panic and neglect that has long characterized the international community response to epidemics and pandemics. The world requires a sustained focus on global health security, ensuring that countries maintain health security as a high-level priority. Numerous epidemics have shown that the cost of response far exceeds the cost of preparedness. Ensuring sustained financing to build and maintain critical country capacities for health security is a necessity if we are to achieve the capacity needed to be prepared for future outbreaks. The GHSA, both through our bilateral programs and in the multilateral initiative, has been at the forefront of these efforts, including through the U.S. Government-led GHSA Sustainable Financing for Preparedness Action Package Working Group. For example, Thailand, the 2020 GHSA chair, is calling for concrete and measurable commitments to achieve the GHSA 2024 target for more than 100 countries to improve health security capacities in at least five technical areas. The United States will champion this call, continue to work with its partner countries to achieve the target, and call on other donors to do more.

Moving forward, we must draw on lessons from the global COVID-19 response so that the United States and the world are better positioned to cope with the current crisis and future epidemic and pandemic threats. The United States will work to strengthen implementation of the IHR (2005) and the relevant monitoring and evaluation tools. The United States recognizes the importance of multi-sectoral and multi-stakeholder collaboration to achieve health security capacity. The U.S. Government will continue to lead a whole-of-government, multi-sectoral approach to prevent, detect, and respond to future epidemics and pandemics. GHSA remains a premier model of global engagements on health security across all sectors and stakeholders.

It will take bold, decisive, equitable, and innovative policy to defeat COVID-19 and build a safer and more secure world. Strong and sustained U.S. Government leadership in GHSA remains essential. Emerging and reemerging infectious diseases are an imminent threat to global and national security that neither the United States nor the world can afford to ignore.

Photo: Malaysia FETP, TEPHINET/CDC

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