

Updates from the Field

Fall, 2020 | Issue 30

Responding to COVID-19 Through Strengthened
Public Health Systems

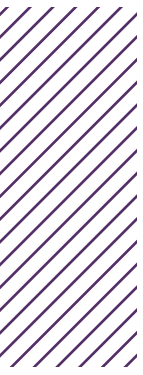


Division of Global Health Protection



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Photo: Jubair Bin Iqbal - Dhaka, Bangladesh



Message from the Director

Over the years, I've talked with senior leaders in the public and private sectors around the world about Disease X, the unknown pathogen that would require rigorous investigation and a significant global response.

In January 2020, Disease X emerged in Wuhan, China, as COVID-19. Since then, we have seen the global benefits of our existing strengths in public health and identified the response capabilities we need to keep improving. Our partners in other countries tell me CDC's global health security investments have built the foundation for their current fight against COVID-19 by tapping into global cooperation and support in areas like ending TB, controlling HIV and malaria, and eradicating polio. My staff in the Division of Global Health Protection (DGHP) have long worked with countries to develop the "CORE 4" components of their public health systems: workforce, surveillance, laboratory, and emergency management and response. By building these capacities, CDC's partners are now better able to respond to COVID-19 as well as future public health emergencies.

Many of our Division's flagship programs have also been integral to the COVID-19 emergency response. Since 2011, CDC has helped more than 25 countries develop national public health institutes (NPHIs). These CDC-like agencies consolidate national public health functions, bring data and expertise together, and coordinate response efforts to enable efficient outbreak detection and response. Many Public

Health Institutes are leading countries' and regions' COVID-19 public health preparedness and response activities, including Africa CDC, the public health arm of the African Union. We're also seeing our Field Epidemiology Training Program (FETP) graduates fill vital roles in country responses. A survey conducted in spring 2020 with 65 active FETPs showed that trainees in 85% of these programs are supporting COVID-19 responses. Moreover, FETP graduates from 100% of these programs are involved in COVID-19-related work such as data collection and analysis, contact tracing, and community education and outreach.

In addition, DGHP's Global Rapid Response Team (GRRT) has been leveraged to assist with CDC's domestic response to COVID-19. GRRT keeps a roster of 350-400 trained, expert CDC staff who can deploy anywhere in the world within 72 hours. With over 1,440 deployments and 45,000+ cumulative field support days in more than 85 countries since 2015, GRRT is the agency's first line of defense for infectious disease outbreaks around the world. In January of this year, GRRT was quickly mobilized to deploy trained responders into CDC's Emergency Operation Center (EOC) and out to U.S. states and territories to support increased domestic needs. This year, for COVID-19 alone, GRRT has provided more than 500 deployments for a total of nearly 16,000 person-days.

As of early December, our Division has been actively engaged in four concurrent emergency responses throughout 2020 – COVID-19, Ebola, polio, and measles. In CDC country offices, more than 90% of DGHP staff are working on COVID-19; more than half of those folks dedicate over 80% of their time to the response. Among headquarters staff, 93% have supported all four responses. While we are proud of these contributions and accomplishments, we recognize that there is still a lot of work to be done. We will continue to partner with countries around the world — to not only address COVID-19 — but also to strengthen our global health security approach as we move forward.

Photo: Peter Thomson, La Crosse Tribune



Our partners...tell me **CDC's global health security investments have built the foundation for their current fight against COVID-19** by tapping into global cooperation and support...

In this issue of *Updates from the Field*, you will read stories about the ways that our programs and activities have built and strengthened public health systems to respond to COVID-19. These stories highlight the continued need for CDC's "CORE 4" investments to safeguard our ability to respond to public health crises into the future. The next Disease X is out there, and we will be better prepared to respond to it with continued support for global health security.

RADM Nancy Knight, MD
Director, Division of Global Health Protection
Center for Global Health

CONTENTS

Updates from the Field - Fall 2020



"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

4

Global Rapid Response Team Expands Scope to U.S. Response

11

Mobile Phone Surveys Transform Data Collection

6

Laboratory Commitments and Innovations Pay Off

13

Pregnancy Wheel Adaptations Empower Community Health Workers

9

Africa CDC Launches Continent-wide Response

16

Global Health Security Investments Prepare Guinea and Uganda for COVID-19

Global Rapid Response Team Expands Scope to U.S. Response

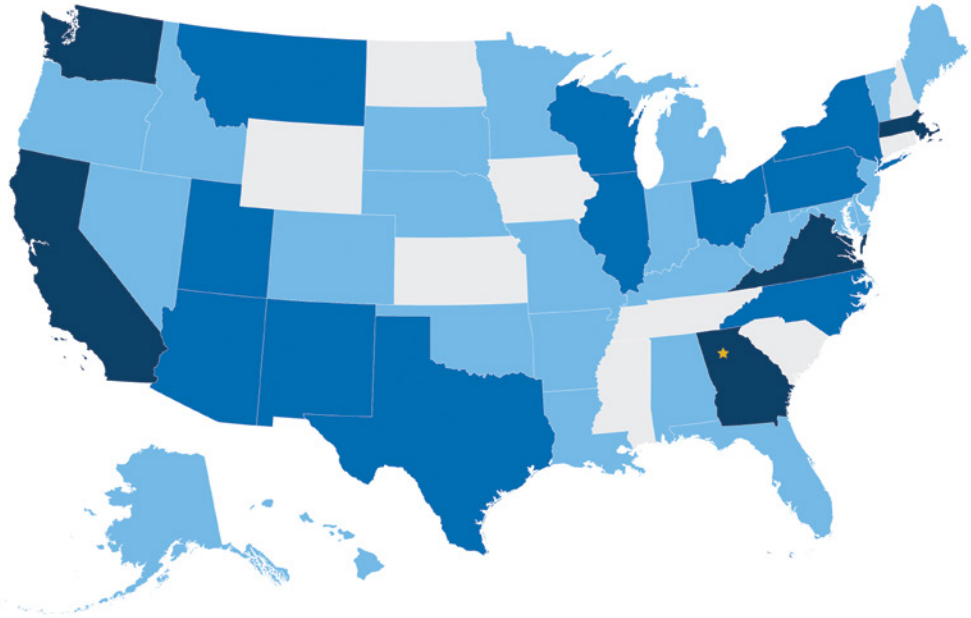
GRRT COVID-19 Domestic Response

(January 6-November 4, 2020)

498 Total Deployments*



★ Emergency Operations Center (EOC)
200 Total Deployments



*Includes Washington D.C., Tribal Nations, Puerto Rico, Guam, U.S. Virgin Islands, and Commonwealth of the Northern Mariana Islands

To improve global health security and respond to public health crises, every country needs a dedicated team of trained emergency responders who can quickly mobilize and strengthen their emergency response capacity.

In June 2015, during the height of the 2014-2016 Ebola epidemic in West Africa, CDC established the Global Rapid Response Team (GRRT) to support the agency's response to international emergencies. GRRT brings together well-trained CDC subject matter experts who stand ready to strengthen emergency response capacity whenever and wherever needed and can deploy anywhere in the world within 72 hours.

Due to the increased number and gravity of domestic public health emergencies, CDC expanded GRRT's scope in 2016 to include emergency responses in the United States (U.S.). Since then, GRRT has responded to several domestic public health emergencies

including Hurricane Maria in Puerto Rico, Hepatitis A in Appalachia, and the ongoing COVID-19 pandemic. Since 2015, 554 GRRT members have been deployed over 1,300 times for 50,000+ person-days to support 54 countries, including the U.S., during public health emergencies.

GRRT'S RESPONSE TO COVID-19

At the onset of the COVID-19 pandemic, GRRT members deployed to support surveillance activities in China, repatriation flights from Japan, as well as preparedness and response activities in Asia and Africa. As COVID-19 cases and deaths increased in the U.S., GRRT pivoted from international efforts to support domestic efforts. GRRT COVID-19 responses included screening incoming travelers at U.S. quarantine stations, conducting outbreak investigations at long-term healthcare facilities, food packing plants, and correctional facilities, and providing technical assistance to state health departments and tribal nations.

Since CDC activated its emergency operations center (EOC) to respond to COVID-19 on January 6th 2020, GRRT has deployed over 250 responders on 498



Former GRRT responder Jonny Andia (left) and current responder Edgar Monterosso (right) in Richmond, VA, where they conducted contract tracing and determined the current level of COVID knowledge and prevention within Latinx communities (June 2020). Photo: CDC GRRT

deployments for more than 19,000 person-days to 40 states, Washington D.C., tribal nations, and four territories, as well as CDC's EOC in Atlanta, Georgia.

GRRT SUPPORTS HEALTH DEPARTMENTS IN LATINX COMMUNITIES

As the number of COVID-19 cases continued to rise within the U.S., some communities were unable to bear the burden. CDC identified these disparities and provided community-oriented solutions to reduce illness and death. One example from Virginia involves the Chesterfield County and City of Richmond Health Departments, which noticed many new COVID-19 cases in the Latinx community. To address this public health challenge, GRRT deployed six bilingual emergency responders to support Virginia's state and local health departments. In Richmond, responders identified economic pressure put people in situations that increased their infection risk. A large portion of the Latinx community worked in service or domestic industries, where they were exposed to other people for long time periods; many lacked health insurance or paid sick leave and feared missing work. To improve health outcomes, GRRT responders helped expand testing and shared health protection and prevention resources in Spanish. GRRT also partnered with local

community leaders and associations, providing masks and resources to help those testing positive recover without spreading COVID-19. "Before COVID-19, I spent 15 years, more than half of my public health career, doing international work... it was COVID-19 that brought all of my international years to bear... [leading me to] investigate COVID-19 transmission dynamics in Latino/Hispanic communities across the USA. My international work and GRRT deployments helped me develop the sensitivities and awareness [needed] to approach affected [domestic] communities. For me, a valuable lesson has been to once again realize that all public health is local; responses and action start at the local level in the U.S. and wherever we may be asked to respond." – Dr. Edgar Monterroso, MD MPH

VALUE AND FUTURE DIRECTIONS OF GRRT

Today, as COVID-19 and other public health crises continue to emerge and strain even the most established public health systems, GRRT's capacity to rapidly mobilize and pivot from international to domestic response exponentially increases its value to global health security. Moving forward, GRRT's priorities for the 2021-2022 calendar year include increasing GRRT's surge roster of as-needed responders by 50%, and continuing to provide expertise in epidemiology, community engagement, laboratory, logistics, and more to address health disparities worldwide and ensure a safer, more equitable future for all. Dr. Henry Walke said, "GRRT responders never hesitate to deploy at short notice... I appreciate their dedication and enthusiasm to protecting public health domestically and internationally."

"The broad skill set and flexibility of GRRT staff is one of CDC's biggest assets in response to both international and domestic outbreaks,"

Dr. Henry Walke, COVID-19 Incident Manager and former Ebola Virus Disease Incident Manager

Laboratory Commitments and Innovations Pay Off

WHY INVEST IN LABORATORIES?

As the COVID-19 pandemic continues to surge around the world, it is essential to quickly test and diagnose illness. Now more than ever, laboratories are a critical component of every country's core capacity for emergency response. To improve global health security, CDC works with over 45 countries and regions, developing and supporting quicker, safer, and more effective laboratories for rapid response during public health emergencies.

CDC's expertise, investments, and alliances with partners make it possible for laboratories across the globe to respond to infectious disease outbreaks. Through training and innovations in diagnostic testing, infrastructure development, biosafety and

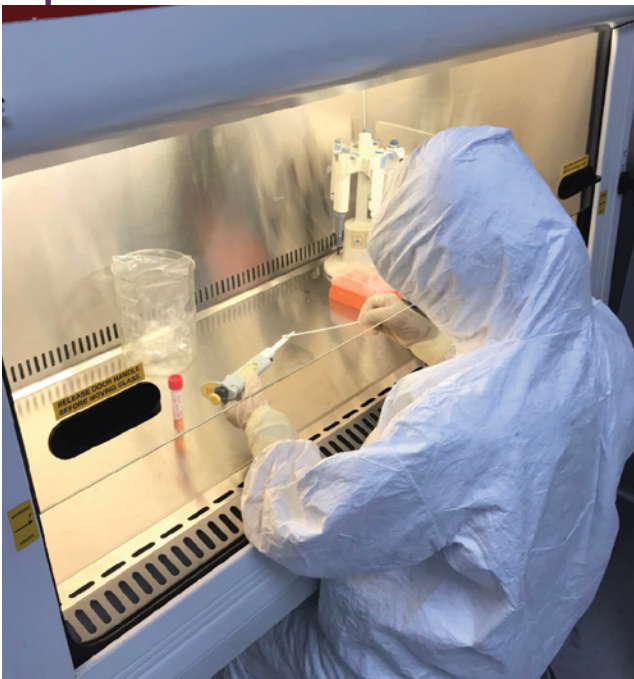
biosecurity, countries like Vietnam, Ethiopia, and Bangladesh are better able to meet the challenges of COVID-19.

Increased Investments in Laboratories Prepare Countries for Future Emergencies

As the COVID-19 pandemic continues to affect people across the globe, countries working with CDC are using laboratory innovations to save lives. Quickly changing work efforts to address current needs and creating sustainable laboratory programs can protect lives through disease detection, testing, and monitoring. Continued investment in laboratory preparedness, diagnostics, and safety also helps countries more effectively respond to future public health emergencies."



VIETNAM: Laboratory Testing Strategy Increases Testing Capacity



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

From the onset of the COVID-19 pandemic, Vietnam quickly developed and put into place a laboratory testing strategy to protect communities and prevent the spread of the virus. Building on 22 years of cooperation, CDC experts worked with the Ministry of Health to enhance Vietnam's laboratory capacity through guidance and research on COVID-19 testing methods and resources. Through this partnership, CDC worked with the National Institute of Hygiene and Epidemiology (NIHE) to establish the National Public Health Reference Laboratory in Vietnam. This collaboration also supported training on COVID-19 sample collection and testing for staff at regional public health institutes, hospitals, and animal health laboratories.

Vietnam's laboratory strategy successfully limited the spread of COVID-19 in the country to just over 1,305 cases reported on November 24th. Additionally, Vietnam was able to expand diagnostic testing, which helped reduce transmission within high-risk communities. Vietnam's accomplishments demonstrate how laboratory investments help prepare countries to develop and implement a rapid response during a public health emergency.



BANGLADESH: Ensures Laboratory Safety and Sustainability



Laboratory scientists (pictured in 2016) receive training in biosafety cabinet certification, which has contributed to the sustainability of laboratories in Bangladesh during the COVID-19 pandemic. Photo: Pawan Angra, CDC

Since 2013, CDC, in partnership with Bangladesh's government and the Bangladesh Biosafety and Biosecurity Society (BBBS), has provided funding and technical expertise for the country's biosafety and biosecurity program, which prepares laboratories for global health threats.

Through this program, certifying biosafety cabinets (BSCs) assures the safety and protection of laboratory technicians and staff, specimens and other infectious materials, the environment, and the public at large. Previous investments, including training and

equipment for biosafety cabinet certifiers, allowed for continued maintenance and annual certifications, furthering program sustainability to support the COVID-19 response. This continuity led to rapid national certification of BSC, which resulted in the expansion of Bangladesh testing laboratories to 52 sites within a few weeks of the COVID-19 outbreak. Sustainable laboratory programs like BSC certification ensure that work remains uninterrupted during public health emergencies, as witnessed during the current COVID-19 pandemic, and prepares countries for future outbreaks.



ETHIOPIA: Infrastructure Investments Expand Ethiopia's Laboratory Response

In the wake of the COVID-19 pandemic, previous investments in global laboratories have become invaluable. For more than two decades, CDC has worked with the Government of Ethiopia to enhance laboratory capacity and strengthen the country's overall public health infrastructure.

In response to COVID-19, CDC supported Ethiopia's diagnostic testing efforts and strengthened a National Public Health Reference Laboratory by verifying test kits, establishing a laboratory quality assurance program, and facilitating the procurement of emergency supplies. Additionally, CDC

laboratory staff in Ethiopia helped develop testing strategies and indicators to compare performance across laboratories.

While Ethiopia initially sent COVID-19 samples abroad for testing, the country now tests thousands of specimens per day through its own laboratories. These activities led to the rapid expansion of testing and increased the country's laboratory capacity from one to more than 50 sites throughout affected regions. CDC's investment in Ethiopia's laboratory infrastructure contributed to the country's ability to work more quickly in responding to the COVID-19 pandemic.



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

Africa CDC Launches Continent-wide Response



Volunteers from the Democratic Republic of Congo deploying to support COVID-19 response in other French-speaking African countries.
Photo: Africa CDC

On February 14, 2020, Africa recorded its first case of COVID-19.

This occurred exactly 3 years and 14 days after the launch of the Africa Centres for Disease Control and Prevention (Africa CDC) in Addis Ababa, Ethiopia. In a global pandemic that has tested even the most seasoned public health agencies, Africa CDC is coordinating a continent-wide response to the disease, with critical support from the United States Centers for Disease Control and Prevention (U.S. CDC). This partnership and Africa CDC's efforts to slow the spread of COVID-19 have been remarkable for a continent with more than 1.3 billion people and significant health system challenges.

As the public health arm of the African Union (AU), Africa CDC's operating model relies on national public health institutes (NPHIs) and ministries of health to coordinate public health activities at the national level. Five regional collaborating centers (RCCs) coordinated national COVID-19 response efforts with Africa CDC headquarters, based at the AU in Ethiopia. Thanks to its structure, relationships, and reputation, Africa CDC became the agency that Africa turned to for the COVID-19 response.

ACCELERATING RESPONSE EFFORTS THROUGH PARTNERSHIP WITH U.S.

A continent-wide response to COVID-19 required cooperation with networks and global partnerships. U.S. CDC has been a critical partner in many of these initiatives, just as it has supported Africa CDC's development from its inception. These efforts included early investments in equipping Africa CDC's emergency operations center, training staff in emergency management principles, helping to develop an advanced fellowship for many of Africa CDC's technical leaders, and providing technical assistance for establishing a surveillance system at the continent-level that links with national systems to identify potential global health threats.

"The partnership with U.S. CDC has been an important factor in Africa CDC's response achievements," said Africa CDC Director Dr. John Nkengasong, who recently received the Bill & Melinda Gates Foundation's 2020 Global Goalkeeper Award. Many of the competencies and structures essential for success during this pandemic have been developed with the support of U.S. CDC."

U.S. CDC directly supported COVID-19 response

activities through staff embedded at Africa CDC. U.S. CDC also assigned additional staff for priority response initiatives supporting data analysis, communications, training, and various scientific activities.

CONTINENT-WIDE SURVEILLANCE

Data has remained at the core of decision-making during the COVID-19 pandemic. Africa CDC's continent-wide surveillance system—collecting and analyzing public health information from across Africa—has enabled AU member states, businesses, regional governing bodies, and others to make educated decisions during the pandemic. Well before Africa's first reported case, Africa CDC began preparedness and response activities by monitoring various information sources for global updates about COVID-19, using a system and skills established with U.S. CDC's support.

Africa CDC compiled countries' COVID-19 surveillance information into a continent-wide dashboard that launched in April 2020, with support from U.S. CDC. This dashboard is updated twice a day. Weekly outbreak briefs that use the dashboard helped to analyze disease trends and shape decisions, such as those around resource allocation.

EMPOWERING NATIONAL RESPONSES

Effective continent-wide response to COVID-19 has relied on country-level progress. Africa CDC led numerous efforts to equip NPHIs, ministries of health, and other national entities with training, information, and guidance to reinforce their country-level responses.

Through alliances with U.S. CDC, academia, scientific organizations, and other partners, Africa CDC developed and released trainings to address priority national response needs. For example, following Africa CDC-led regional and national trainings, COVID-19 laboratory testing capacity grew from two countries early in the outbreak to all 55 AU member states by August 2020.

Africa CDC sent almost 200 experts to 17 countries, as well as Africa CDC headquarters and the five RCCs. These professionals provided expertise in epidemiology, infection prevention and control, laboratory science, and communications.

LOOKING AHEAD

While Africa CDC made significant strides during a very short time, ongoing cooperation with networks and

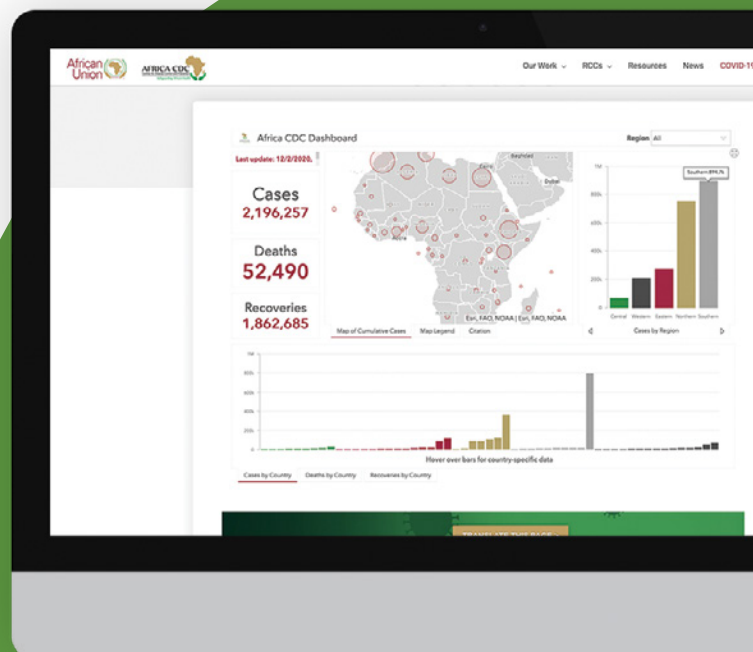
global partnerships, including U.S. CDC, continues. These partnership efforts include:

- Africa joint continent outbreak strategy
- Africa Task Force for Coronavirus
- Partnerships to accelerate COVID-19 testing in Africa
- A platform to more efficiently meet Africa's medical supply needs
- A consortium to promote vaccine availability in Africa
- Partnerships that apply data and science toward reopening efforts

The COVID-19 pandemic revealed that Africa needs a strong continent-wide public health system that is resilient and adaptive enough to cope with existing and emerging disease threats. As the continent's public health agency, Africa CDC's efforts to help countries strengthen their surveillance and laboratory systems, develop a robust public health workforce, and train countries in emergency response management prove critical to mount an effective COVID-19 defense strategy. Cultivating respectful local and international partnerships is also a crucial component of Africa CDC's work that can meet the challenges of a rapidly changing public health landscape.

"Going forward, Africa CDC will encourage projects that apply intellectual, manufacturing, and networking potential to meet Africa's health needs with COVID-19 and promote safe economic reopening," said Africa CDC Deputy Director Dr. Ahmed Ogwel. "Continued engagement with partners like U.S. CDC is essential for the success of this African-led response."

Data as of December 2, 2020

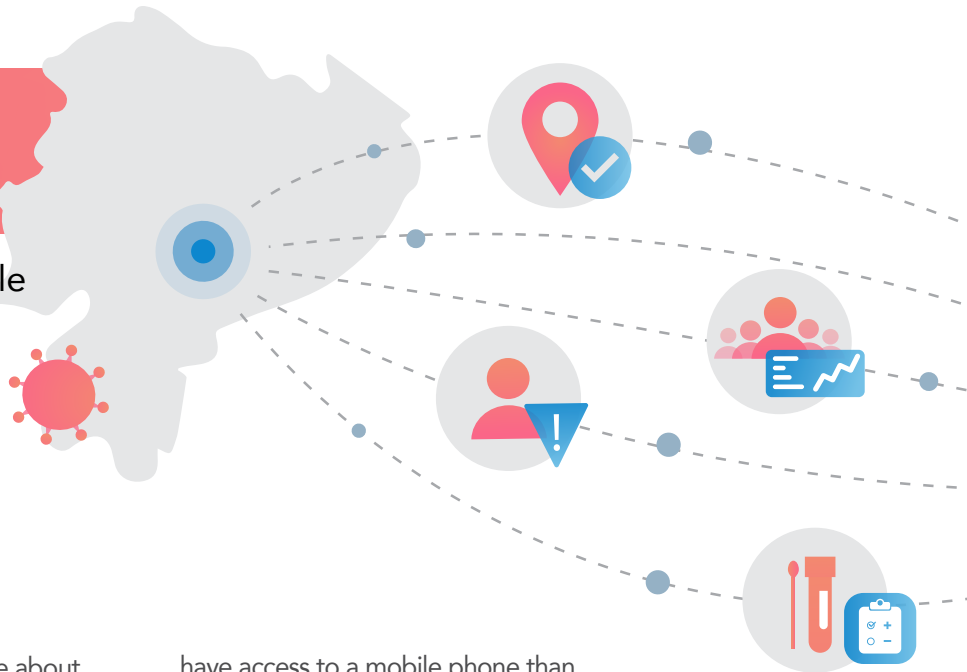


Mobile Phone Surveys Transform Data Collection

In early 2020, the world watched COVID-19 spread across borders and circle the globe. One crucial area of CDC's COVID-19 response included assisting partner countries with disease surveillance and supporting data collection.

1 Mobile Phone Survey in Ecuador

Collected responses from people on their COVID-19 knowledge, attitudes, and practices



Surveillance is an important part of learning more about diseases, especially new diseases — how they spread, and who is most at risk. Disease surveillance can also help guide response plans and identify ways to prevent future outbreaks. Before COVID-19, gathering this type of information in low and middle-income countries was often done in person, in clinics or through house-to-house surveys.

Due to how rapidly COVID-19 spread across the world, infectious disease experts had to find a way to quickly gather and analyze a lot of data across populations, without putting communities and “disease detectives” at risk. One method that met all the criteria was mobile phone surveys (MPS).

MOBILE PHONES AND TECHNOLOGY INCREASE ACCESS TO INFORMATION

In the early 2000s, few people in developing countries could access mobile technology. Ten years later, as mobile phones and data plans became more affordable, households in these same countries were more likely to

have access to a mobile phone than to clean water or electricity.¹ Today, it is estimated that more than 5 billion people — or roughly two-thirds of the world's population — have access to technology like cell phones and smartphones,² though that access may not be distributed equally.

As a result of this growth, mobile phone surveys presented a fast and affordable way to gather accurate health data and monitor disease trends. Automated surveys can use text messages, voice calls, or mobile web to reach people, and messaging can be changed easily to fit local needs. In places where MPS have been used before, teams could develop and roll out COVID-19-related surveys quickly through existing survey networks and templates. New projects were easier in areas where people were already somewhat familiar with the process, since communities needed less support to access and respond to surveys. Examples from Sri Lanka and Ecuador highlight how these two countries benefitted from applying existing MPS networks for data collection during the COVID-19 pandemic.

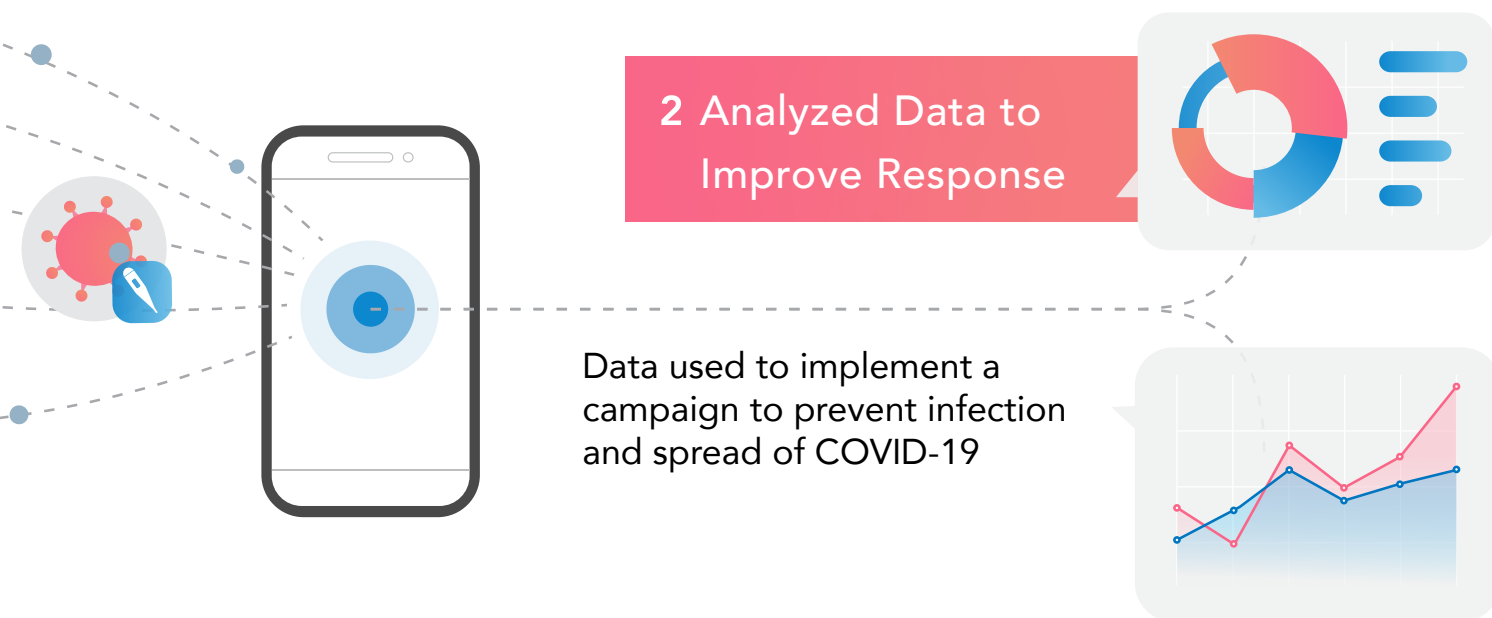
SRI LANKA AND ECUADOR EXPAND SURVEILLANCE THROUGH MOBILE PHONE SURVEYS

Before the COVID-19 pandemic, CDC's Global Noncommunicable Diseases Surveillance Team worked with the Bloomberg Data for Health Initiative to gather health data in several countries through mobile phone surveys. In Sri Lanka and Ecuador, the CDC Surveillance Team responded to public health officials' pandemic support requests by repurposing current MPS frameworks for national COVID-19 surveys.

In Sri Lanka, when COVID-19 meant that patients with noncommunicable diseases (NCDs) like

collection mobile phone surveys to learn about people's COVID-19 knowledge, practices, common symptoms, and testing availability. Ministry staff then used survey results to implement ¡Yo Me Cuido! ("I take care of myself"), a health campaign communicating guidelines for preventing infection and spread of COVID-19. The MOH also shared survey results with other organizations working to protect people's health and well-being, such as health professionals, national and local emergency response committees, local governments, and non-governmental organizations.

Due to CDC's support, the health ministries in Sri Lanka and Ecuador were able to quickly plan, design, and implement national surveys to



cancer, diabetes, and cardiovascular and chronic lung diseases couldn't leave their homes, the government set up a medicine delivery system. This system aimed to make sure patients did not run out of their medication; however, officials were not able to gauge system effectiveness without performing home visits. By using an existing survey network and updating earlier surveys on tobacco use, blood pressure, diabetes, and diet, mobile phone surveys provided a quick, convenient, and safe tool to assess a new medicine delivery service during the COVID-19 pandemic.

In Ecuador, the Ministry of Health (MOH) adapted the CDC and Bloomberg Philanthropies NCD data

collect real-time feedback during the COVID-19 pandemic. In addition to evaluating and improving programming, these surveys provided key information that will help develop future pandemic response guidelines.

Public health officials in both Sri Lanka and Ecuador expressed interest in launching more mobile phone surveys to gather COVID-19 data. As the global pandemic response continues, CDC experts will keep supporting COVID-19-specific mobile phone surveys and helping partner countries use innovative data collection methods to protect the health and well-being of their people.

1. World Bank Group, 2016. *Digital Dividends: World Development Report*.

2. Silver, L., 2020. *Smartphone Ownership Is Growing Rapidly Around The World, But Not Always Equally*.

Pregnancy Wheel Adaptations Empower Community Health Workers

For more than seven decades, Community Health Workers (CHWs) have served on the front lines of public health crises.



In 2019, before the COVID-19 pandemic, expectant parents receiving prenatal care counseling at home in Cox's Bazar, Bangladesh, where community-delivered services save lives. Photo: Endang Handzel

CHWs are well-trained, usually have an in-depth understanding of their community's culture and healthcare needs, and are often trusted members of the communities they serve. CHWs handle a range of functions and are valued as providers of health information and services who improve community health outcomes.

Much like the longstanding history and value of community health workers, the pregnancy wheel — a pocket-sized plastic device used to estimate key gestation dates — is an accepted public health tool which has long helped healthcare providers ensure better maternal and child health outcomes. In countries such as Bangladesh, however, the pregnancy wheel is not yet widely known among community

health workers. This training has given CHWs the confidence to effectively explain key messages about preparing for birth and being ready for complications. CHWs in Bangladesh can now better advise families on preparing to deliver during emergencies — an important aspect of health service delivery in humanitarian settings. Because COVID-19 is a new illness, CHWs around the world have been dealing with an overabundance of information that changes rapidly. Mixed messaging, along with shifting priorities in humanitarian maternal and child health needs, can create confusion for CHWs as well as strain community relationships. Therefore, CHWs need streamlined, accurate prevention messaging and tools to deliver pregnancy information in local communities in the context of COVID-19.

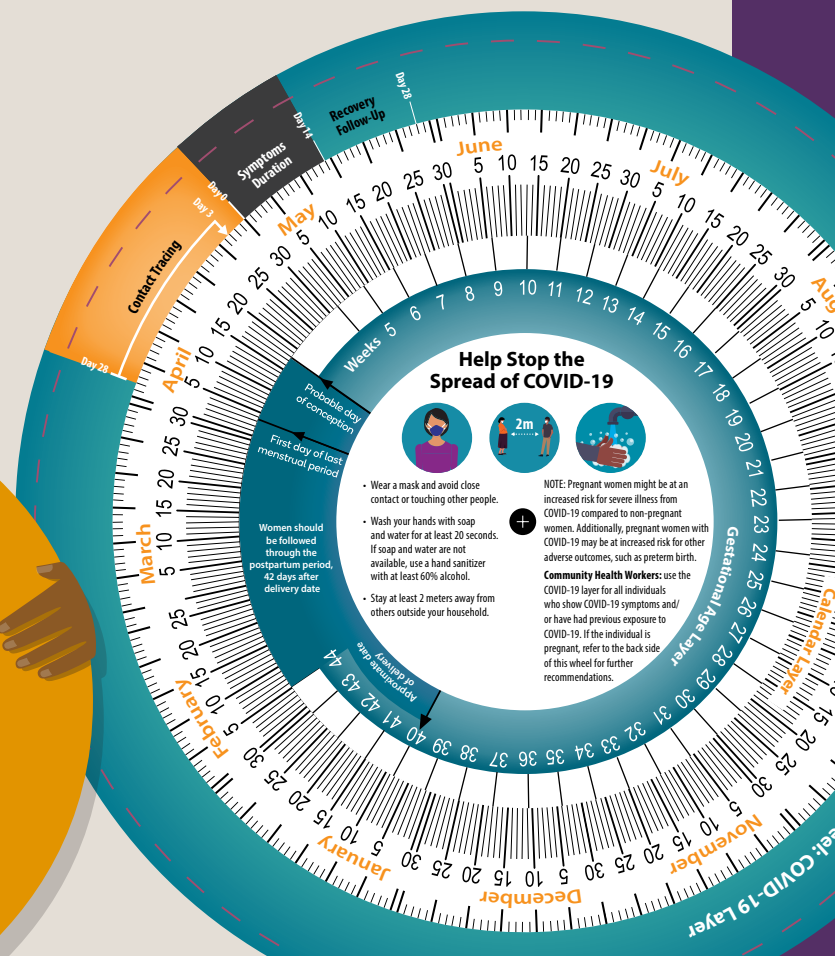
Right: A pregnant woman and the adapted pregnancy wheel, which includes COVID-19 prevention messages to help Community Health Workers (CHWs).

ADAPTING THE WHEEL TO EXPAND REACH

Facing new challenges with COVID-19, CDC and partners considered CHWs' strengths and abilities to expand pregnancy services in unstable settings. As a result, CDC adapted the pregnancy wheel at the beginning of the COVID-19 emergency response to include COVID-19 prevention messages. The goal of the adapted wheel is to empower CHWs to spread awareness and improve decision-making for pregnant women. With this improvement, CHWs can provide COVID-19 community outreach and education while continuing to support healthy pregnancies.

Before the COVID-19 pandemic, the Inter-Agency Working Group for Sexual and Reproductive Health in Humanitarian Emergencies and Crises developed the "Roadmap to Accelerate Progress for Every Newborn in Humanitarian Settings 2020-2024." Work on this strategy document was led by the World Health Organization (WHO), UNICEF, and other agencies including CDC, United Nations Children's Fund, United Nations High Commissioner for Refugees, and Save The Children. Following the April 2020 launch, CDC worked to implement the Roadmap in Cox's Bazar, Bangladesh, to improve the facility and community-based surveillance system using tools, including the pregnancy wheel.

The most recent adaptation to the pregnancy wheel includes COVID-19 messaging for the general population and pregnant women and provides risk-reducing triage recommendations for pregnant women with COVID-19 symptoms. The addition of a third, COVID-19 specific layer to the wheel allows CHWs to determine appropriate contact tracing periods and expected illness duration for individuals suspected to have COVID-19. These additional features help CHWs identify the start of symptoms in the community and align them with dates on the pregnancy wheel.





Before COVID-19, midwives in Bangladesh completed data training, with the help of experts in maternal, newborn, and child health and healthcare providers, while preparing for community health work. Photo: Endang Handzel

For example, CHWs may notice COVID-19 symptoms when examining pregnant women. Being aware of expected delivery dates, they can use the wheel to help providers pinpoint the virus' incubation period. If COVID-19 is detected during an examination, CHWs can use the wheel, along with their strong community connections, to conduct contact tracing.

The CDC-adapted pregnancy wheel has been piloted in emergency settings, including with the Rohingya population in Bangladesh. It has reached approximately 500 health facilities and been used by more than 1,000 community health workers.

PREGNANCY WHEEL ADAPTATION OUTLOOK AND FUTURE USE

As a result of CDC's Cooperative Agreement with CARE International, the pilot for the latest version of the pregnancy wheel will begin before the end

of 2020 and will be monitored across 1,500 village health teams in five districts in Uganda, reaching 29,000 pregnant women.

CDC is working to meet the increased demand for ongoing and thorough Maternal, Newborn, and Child Health, or MNCH services during the COVID-19 pandemic by sharing the adapted pregnancy wheel with countries like Burkina Faso, Chad, Cameroon, and Indonesia. CDC hopes that adaptations to the pregnancy wheel will help prevent premature deliveries, reduce maternal mortality and still births, empower a workforce, and strengthen surveillance. All together, these adaptations will ensure that mothers and newborns can receive lifesaving services in humanitarian settings as well as in countries with fragile health systems.



Global Health Security Investments Prepare Guinea and Uganda for COVID-19

CDC's technical and financial investments to build global health security capacity through the Global Health Security Agenda (GHSA), National Public Health Institutes (NPHI), and other programs have prepared countries such as Guinea and Uganda to quickly respond to public health threats.

In recent years, the world has seen the social and economic effects of highly infectious diseases, such as the Ebola epidemics in Africa and now COVID-19. As public health threats increase globally, every country needs core public health capacities to prevent, detect, and respond effectively to disease threats.

EBOLA HELPED GUINEA MOVE TOWARD PUBLIC HEALTH PREPAREDNESS


When the Ebola outbreak was declared in West Africa in 2014, Guinea's public health system was inadequately prepared to respond to the threat. Guinea had no formal emergency management system before 2015, and no skilled disease detective workforce to manage the outbreak. Ebola eventually spread across borders into Sierra Leone and Liberia, and then spread into Guinea's capital city of Conakry.

Since the Ebola outbreak, CDC has worked with the Guinea Ministry of Health (MOH) and other partners to use GHSA investments in four critical areas of public health—surveillance, workforce development, laboratories, and emergency management and response—to build capacity and improve outbreak response. For example, CDC and its partners developed a nationally coordinated network of emergency operations centers (EOCs) including one national and 38 district-level EOCs. Members of Guinea's MOH received CDC emergency management training and with CDC assistance were able to train network staff.

In July 2016, Guinea's NPHI, called the National Agency for Health Security (ANSS), was created to oversee critical public health functions, working in coordination with the EOC. The ANSS has provided

strong leadership and management skills to the COVID-19 response.

Another GHSA investment, Guinea's Field Epidemiology Training Program (FETP), established in 2017, trains "disease detectives" who serve as boots on the ground during outbreaks. For the COVID-19



"Uganda's continued commitment to data and science-backed decision-making is really key. CDC's position as a trusted partner...is the most important thing for us."

Dr. Amy Boore,
Division of Global Health Protection
Uganda Program Director

pandemic, they quickly responded and used their expertise in outbreak management and response to play leading roles, including surveillance and contact tracing. GHSA funding also helped improve Guinea's national and regional laboratory capacity, making it possible for Guinea to test in-country for COVID-19. Through GHSA resources, CDC supported the rollout of District Health Information Software 2 (DHIS2) as the key surveillance data platform. These improvements positioned Guinea to better manage the pandemic throughout the country.

GHSA INVESTMENTS IN UGANDA IMPROVE THE COVID-19 RESPONSE

Uganda, a “hot zone” for infectious diseases, is no stranger to public health outbreaks. In 2013, the Ugandan MOH began to discuss creating what is now the Uganda NPHI. CDC provided technical assistance to help develop the NPHI and assisted Uganda in organizing its response activities.

Through GHSA funding, CDC has provided over \$40 million since 2016 to help Uganda respond to Ebola and other infectious disease outbreaks.

Through GHSA funding, CDC has provided over \$40 million since 2016 to help Uganda respond to Ebola and other infectious disease outbreaks. This funding, coupled with other financial support from CDC, has helped Uganda improve its health systems.

With CDC’s assistance, 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. On March 21, 2020, the country’s preparedness was put to the test when the first COVID-19 case was confirmed. Uganda’s EOC, which was already responding to Ebola as well as five other outbreaks, quickly confronted the new threat.

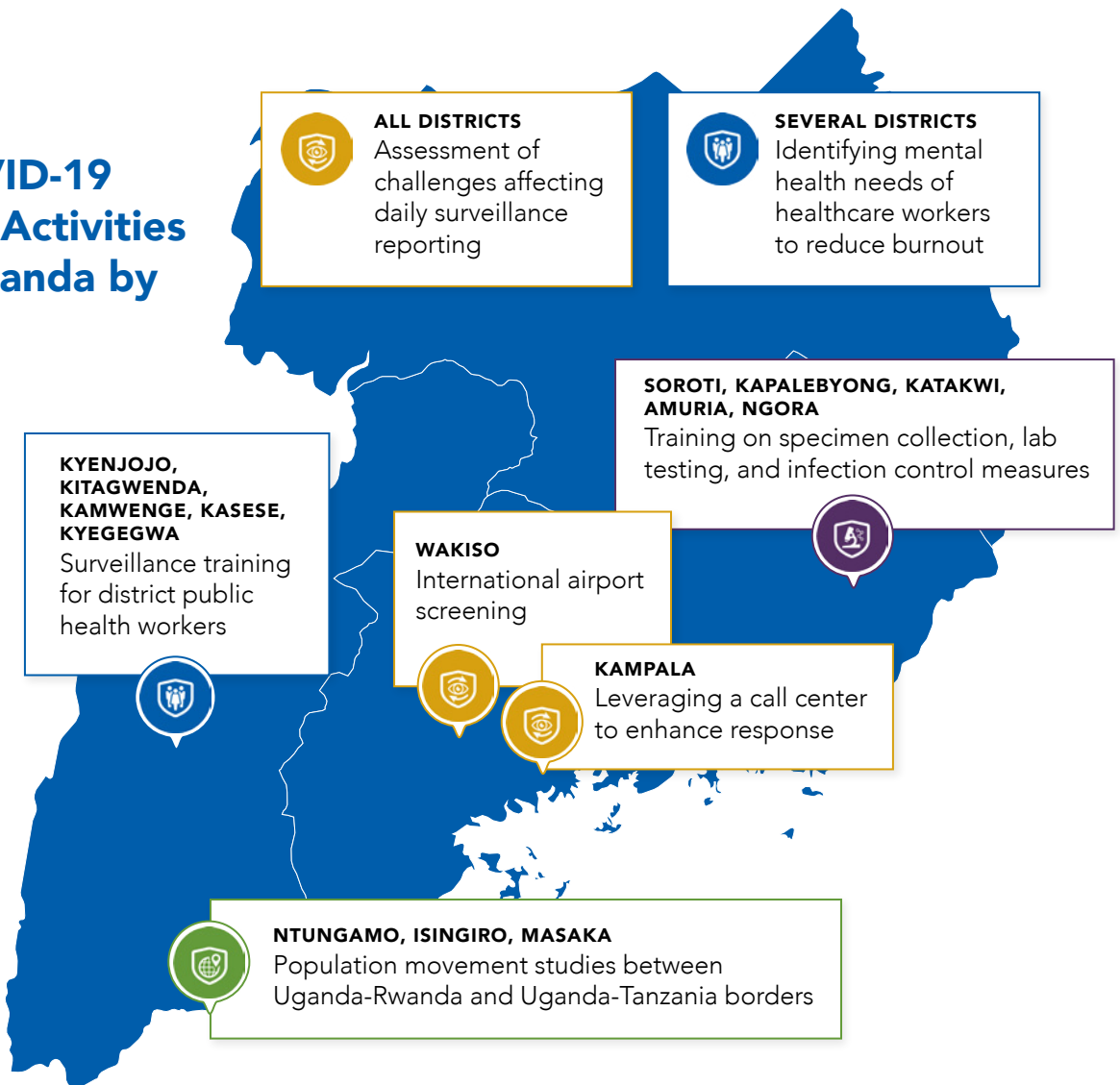
Like Guinea, Ugandan FETP disease detectives leapt into action and harnessed their outbreak response expertise at the start of the COVID-19 pandemic. They led key response activities across the country, including managing data collection and laboratory processes, setting up and carrying out 24/7 airport screening, and coordinating COVID-19 trainings in the districts.



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

FETP COVID-19 Response Activities Across Uganda by District

-  **Workforce Development**
-  **Laboratory Expertise**
-  **Surveillance Systems**
-  **Emergency Operations**



GHSA investments also improved Ugandan laboratory capacity and helped Uganda set up two mobile testing laboratories along with a new team to support increased COVID-19 testing. Through December 1, 2020, Uganda processed 625,752 COVID-19 samples using CDC-supported in-country labs. Countrywide testing for COVID-19 was made possible by the CDC-established sample-and-result-return network that allows sample movement from collection facilities to testing labs and return of results through the electronic results download system.

Additionally, CDC supported the reconfiguration of Uganda’s electronic Integrated Disease Surveillance and Response (IDSR) system, previously used for tracking and reporting other outbreaks, for the COVID-19 pandemic. IDSR handled case reporting in high-traffic points of entry such as airports and border crossings. These GHSA-supported advancements helped

curb the spread of COVID-19 for months after other countries felt its impact. The Lancet Journal rated Uganda in the top ten for countries suppressing COVID-19 within their borders in August.

THE FUTURE OF GHSA

Previous GHSA and NPHI investments helped countries be better prepared to respond to COVID-19. But even with these investments, the COVID-19 pandemic has shown there is much more work to be done. Today, more than two-thirds of the world remains underprepared to prevent, detect, and respond to a public health emergency. CDC investments in global health security strengthen the health systems that keep us all safe. To ensure that countries are better prepared to effectively manage current and future disease outbreaks before they become pandemics, investments in global health security must continue.

Photo: TEPHINET



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



Photo: TEPHINET



Photo: AfricaCDC

Division of Global Health Protection



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention