

Global Health Security Portfolio

Connecting to Build a Safer and More Secure World



Our interconnected world is at increasing risk from infectious diseases. The 2016 global Zika virus epidemic and the 2014–15 Ebola outbreak in West Africa, as well as the 2018 outbreaks in the Democratic Republic of Congo (DRC), are stark reminders of our collective vulnerability. However, the global interconnectivity that creates the risk of epidemics also provides the means to collaborate on the systems and solutions that enable the world to prevent, detect, and respond to public health threats.

Global Health Security Partnership (GHSP)

In 2015, PATH joined the US Centers for Disease Control and Prevention (CDC) and other organizations to support countries to anticipate, prevent, and overcome infectious disease threats.

Through the GHSP, PATH and CDC are strengthening public health systems in DRC, India, Senegal, Tanzania, and Vietnam. PATH supports national governments and partners to leverage and improve interconnected health systems across laboratories, health facilities, and emergency operations centers; improves surveillance data quality; and promotes data use to effectively address outbreak threats.

Key to the GHSP's success is PATH's close collaboration with ministries of health, local organizations, and CDC country offices.

Through the GHSP, PATH supports the CDC and countries to:

- Improve **infectious disease surveillance** to ensure stronger and better linked systems that detect, and report threats rapidly, efficiently monitor trends, and produce actionable data for health programming.
- Strengthen **laboratory capacity** to utilize rapid, high-quality diagnostics; conduct integrated reporting; and build strong links with information systems.
- Foster **integrated and interoperable information** systems that apply immunization program data, surveillance reporting, and laboratory diagnostics to quickly identify threats and trigger an informed response.
- Strengthen **national and institutional capacity** to characterize the extent of antimicrobial resistance (AMR) and develop quality improvement plans to improve infection prevention and control (IPC).

Building Country Capacity

In the **DRC**, PATH supported the establishment and launch of the first emergency operations center (EOC) in the country. Acting as an epidemiological nerve center, the EOC supports the DRC Ministry of Health (MOH) to coordinate the prevention and detection of and rapid response to public health emergencies and outbreaks. Since its launch in 2017, the EOC has been put to the test during Ebola outbreaks and an ongoing cholera epidemic. The EOC's centralization of actionable surveillance data and outbreak maps has made response a faster and more targeted process. PATH is also currently working with the CDC to assess emergency management capacity, develop standard operating procedures, and conduct in-country trainings to further strengthen the DRC public health system's capacity to prevent, detect, and respond to outbreaks.

The GHSP began work in **India** in October 2017. Mumbai is home to the highest number of tuberculosis (TB) patients in the world, with an estimated 40,000–50,000 TB cases annually, of which nearly 4,500 cases are drug-resistant tuberculosis (DR-TB). The majority of TB patients seek care in the private sector, often leading to delays in diagnosis and treatment initiation, high out-of-pocket expenditures, and non-standard DR-TB treatment or non-adherence. PATH is working to link patients that are diagnosed with DR-TB in the private sector to the public sector for treatment. This will avert high expenditures and better ensure a completed treatment regimen, helping to curb the spread of DR-TB in the country and the region.

In **Senegal**, PATH is contributing to the development of a strategic plan for laboratories to strengthen biosafety and biosecurity capacity in order to improve disease surveillance and outbreak detection, including antimicrobial resistance. We are collaborating to develop a national laboratory network that will enhance coordination among diagnostic and surveillance laboratories. PATH, along with CDC, supported the Direction of Laboratories (DL) to map functional and non-functional laboratories in Senegal. To date, 129 laboratories have been mapped and their GPS coordinates are now available. PATH will work with the MOH to develop action plans to fill capacity gaps for labs and prioritize labs for improving quality assurance and accreditation. PATH also provides technical assistance to enhance infection prevention and control in health facilities and supports development of innovative technologies for monitoring and supervision, such as an e-learning tool for immunization. PATH has reported on an assessment of existing laboratory capacity nationally and organized several workshops on information systems, surveillance systems, and emergency

management. Determining the number and capacity of staff in laboratories also helps the DL to anticipate the quality of diagnosis and care available in a region and take steps to improve them.

In **Tanzania**, PATH is strengthening electronic integrated multi-disease surveillance and response (eIDSR) systems and supporting the development of a national strategic plan to strengthen surveillance. PATH works to identify and fill gaps in the current system's ability to detect and respond to outbreaks—for instance, providing technical support to implement eIDSR and conducting supportive supervision in health care facilities, thereby improving the average report completeness from less than 50 percent to more than 80 percent.

PATH is also working to improve water, sanitation, and hygiene conditions in Tanzania's health care facilities (HCF). The aim is to reduce HCF-acquired infections and decrease the spread of enteric diseases, which is linked to overprescribing and misusing antibiotics, both major drivers of AMR. To address this issue, PATH identified locally made handwashing stations and a chlorine distributor. We delivered these interventions and provided education on their use to HCF. Following implementation, we will be conducting an evaluation to monitor improvements.

In **Vietnam**, PATH is supporting the development of a centralized and regional data collection system and data visualization platform to facilitate rapid decision-making that is critical when threats emerge.

We collaborate with national and regional emergency operations networks and provide technical support for monitoring and evaluation for event-based surveillance (EBS). EBS was piloted by the Department of General Preventative Medicine in four provinces; within two months, 522 EBS trainings were cascaded from the national level to the community level, resulting in more than 7,000 trained village health workers, who often collect and report the first signals of an outbreak. The EBS resulted in a 93 percent response rate, with median time to respond to the events ranging from 0.75 hours to 12 hours. This rapid detection and response to signals ensured that resources were sent out into the community as fast as possible. Successes from the pilot have led the MOH to begin rolling EBS out nationally.

Other areas of focus include IPC in HCF, health care–associated infection surveillance, and antimicrobial resistance surveillance. In May 2017, a health care–associated surveillance system developed by PATH using CDC protocol was launched, capturing information on the incidence of blood

stream infections (BSIs) and urinary tract infections (UTIs) in HCF. The findings are being used to inform expansion of the BSI and UTI surveillance system in 2019. At the national level, PATH, with CDC, developed national guidelines for IPC in hospitals, as well as quality improvement plans in hospitals.



Strengthening laboratories and linking them to health information systems is one focus of the GHSP. Photo: PATH/Gabe Bienczycki

Infectious Disease Detection & Surveillance (IDDS) Project

PATH is the major sub-grantee under ICF International for surveillance activities in the new USAID IDDS project. The goal of IDDS is to operationalize global and U.S. Government initiatives and strategies to reduce global health threats posed by infectious diseases, focusing on strengthening of disease detection networks and surveillance systems, including One Health networks to address zoonotic and emerging diseases. IDDS will initially operate in 13 countries in Africa and Asia. The overall objectives of IDDS are to:

- Improve the detection of diseases of public health importance and identification of antimicrobial resistance (AMR) in priority infectious diseases through an accessible, accurate, adaptable, timely, and integrated diagnostic network system.
- Improve the quality of real-time surveillance systems for pathogens of greatest public health concern, including AMR and zoonotic diseases.
- Generate evidence-based guidance and innovative solutions to strengthen in-country diagnostic networks and surveillance system.

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PATH is a global organization that works to accelerate health equity by bringing together public institutions, businesses, social enterprises, and investors to solve the world's most pressing health challenges. With expertise in science, health, economics, technology, advocacy, and dozens of other specialties, PATH develops and scales solutions—including vaccines, drugs, devices, diagnostics, and innovative approaches to strengthening health systems worldwide.

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