Advancing Global Health Security

For more than 25 years, RTI has been a global leader in the prevention and control of infectious diseases. We implement and evaluate complex multisector projects that strengthen national and local health systems and build resilience against pandemic threats. We support countries to advance global health security with our broad multidisciplinary expertise and deep bench of experts, and our work has played a vital role countering the threats associated with coronavirus disease 2019 (COVID-19), Ebola, Middle East respiratory syndrome (MERS), Zika, and other highly infectious diseases.

Areas of Expertise:
- Antimicrobial Resistance (AMR)
- Border Health
- Disease Surveillance
- Health Information Systems
- Health Economics
- Health Systems Strengthening
- Immunization
- Laboratory Capacity Building
- Monitoring and Evaluation
- Public Health Workforce Development
- Rapid Response
- Research and Data Management
- Risk Communication and Community Engagement
- Zoonotic Diseases
Antimicrobial Resistance
• Developing the prototype for a centralized AMR database and dashboard that will support the implementation of a national AMR data coordination center for veterinary medicine in the United States. Client: RTI/Iowa State University

Zoonotic Diseases
• Leading a One Health assessment in Southeast Asia to understand the priorities of the Association of Southeast Asian Nations (ASEAN), determining how the One Health approach can help (1) adjust existing policy frameworks to address the risk of zoonotic disease spillover and (2) identify entry points to facilitate ecosystem health and counter wildlife trafficking programming. Client: U.S. Agency for International Development (USAID)
• Helped the Democratic Republic of the Congo (DRC) strengthen surveillance of priority zoonotic diseases and conducted a multilevel surveillance evaluation of institutional and individual capacity in two provinces. Client: Centers for Disease Control and Prevention (CDC)

Immunization
• Facilitating intra-action reviews in the DRC, a mechanism for conducting a systematic review of the national COVID-19 response. Adapting this methodology at the provincial level empowers health authorities to identify ways to improve local COVID-19 vaccine distribution. Client: CDC
• Supporting the COVID-19 vaccine rollout in the Philippines, including developing public messaging, supporting health facility planning and preparation, and deploying mobile vaccination teams. More than 2.8 million Filipinos have been fully vaccinated with our support. Client: USAID

Disease Surveillance
• Working in two provinces of the DRC to conduct a rapid assessment of community event-based surveillance (CEBS) capacity, develop community signals and surveillance tools, strengthen knowledge of surveillance focal points, and pilot test the CEBS approach. Client: CDC
• Supporting Thailand to eliminate malaria by strengthening surveillance systems, evaluating strategies and tools for elimination, and using strategic information to inform decision-making and policy development. Client: USAID
• Strengthening mainland Tanzania and Zanzibar’s ability to conduct malaria surveillance and use data for decision-making by promoting programmatic integration, local ownership, capacity strengthening, and data generation. Client: USAID
• Produced models to help predict the spread of Lyme disease in the northeastern United States, the effect of COVID-19 mitigation efforts and the spread of monkeypox in Saudi Arabia, the spread of monkeypox in European countries, and the spread of COVID-19 cases globally using Twitter data. Clients: Northeast Regional Center for Excellence in Vector-Borne Diseases, World Bank, RTI-funded
• Enhanced COVID-19 testing in Honduras and El Salvador by updating guidelines for infection prevention and control and case management; improving laboratory efficiency and testing effectiveness; providing staff with skills training; and developing information systems for sharing data. Client: USAID
Health Information Systems

- Testing the use of eIDSR (Electronic Integrated Disease Surveillance and Response system) in the DRC using DHIS2 (District Health Information Software 2) in 15 health zones and at two critical border points of entry.  
  Client: CDC

- Developed Coconut Surveillance, an open-source mobile application used to improve rapid response and reactive malaria case detection in Zanzibar. Client: USAID

- Working with the Caribbean Public Health Agency (CARPHA) to optimize their DHIS2 regional repository to strengthen disease surveillance, ensuring that relevant, timely, and accurate surveillance data are available to monitor the health status of member states and provide strategic information, thus enabling evidence-informed policymaking at national and regional levels. Client: CARPHA

- Supported Guinea to scale up from phone- and paper-based management of surveillance data to nationwide use of eIDSR using the DHIS2 platform. This quickened Guinea’s response to the COVID-19 outbreak in 2020 and led to rapid detection and containment of an Ebola outbreak in 2021. Client: CDC

- Led the integration of a laboratory information management system into Zimbabwe’s health information exchange. The system now runs at the Zimbabwe National Microbiology Reference Laboratory and five other key laboratories around the country. Client: CDC

Public Health Workforce Development

- Supporting the global Field Epidemiology Training Program (FETP) by developing case studies, piloting training materials, and conducting evaluations, including a worldwide evaluation of program graduates to assess their application of the skills learned in FETP. Also conducted an evaluation of the first two cohorts of FETP-Frontline (one tier of the program) in Guinea. Client: CDC

- Developed and pilot-tested timely COVID-19–related case studies for FETP teams in 28 countries; topics included comorbidities between noncommunicable diseases and COVID-19, COVID-19 surveillance, and excess mortality. Client: CDC

Rapid Response

- Supporting the national COVID-19 response in the Philippines, including rapid response, case management and prevention, community engagement, and vaccine roll-out. Client: USAID

- Supporting 13 countries to control and eliminate neglected tropical diseases (NTDs) by strengthening health systems to provide NTD treatment and care, supporting disease surveillance and detection, improving data reporting and management, and facilitating advocacy for greater integration of NTDs into national policy, planning, and budgeting processes. Client: USAID

- Improved health facility triage and screening protocols and increased health worker capacity in Guinea to detect and respond to Ebola outbreaks. Client: CDC

- Responded to the eighth Ebola outbreak in DRC’s Likati district by supporting the investigation of the chain of transmission and training community health workers on community case definitions, contact tracing, and surveillance data management. Client: CDC

- Conducted Zika virus monitoring throughout Latin America. Client: USAID

- Supported disaster response and disaster risk reduction in the Latin America and Caribbean region, including supporting H1N1 influenza monitoring in Costa Rica, Zika virus monitoring throughout the region, and mobilizing surge support to conduct a COVID-19 situation report in Ecuador. Client: Office of U.S. Foreign Disaster Assistance within USAID
KEY RESEARCH AND TOOLS

Coconut Surveillance. We developed an open-source mobile software application that can track and respond to real-time malaria cases at the facility and household level. This technology has greatly enhanced malaria surveillance and response in Zanzibar, and we are adapting it to fight Ebola and Zika.

RTI U.S. Synthetic Household Population™. We developed a database to aid emergency response, simulate infectious disease transmission, and calculate the effects of interventions. It provides an accurate representation of the complete household and person population across the United States, and we used it to forecast surge and capacity issues during the beginning of the COVID-19 pandemic by modelling patient movement through health care facilities.

Health Economic Costing Tools. We developed tools to facilitate the collection of data on resources and costs incurred by disease outbreaks in CDC’s global health security priority countries, to aid investigation and response. We also designed a tool field staff can use to estimate the cost of implementing CDC’s FETP-Frontline in their countries.

Research and Data Management. In partnership with Duke University, we serve as the operational hub for the Centers for Research in Emerging Infectious Diseases (CREID) Network, which is comprised of 10 research centers and a coordinating center. The Network’s multidisciplinary teams of investigators conduct pathogen surveillance; study pathogen transmission, pathogenesis, and immunologic responses in hosts; and develop reagents and diagnostic assays for improved detection of important emerging pathogens and their vectors.

Learn more about our work
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