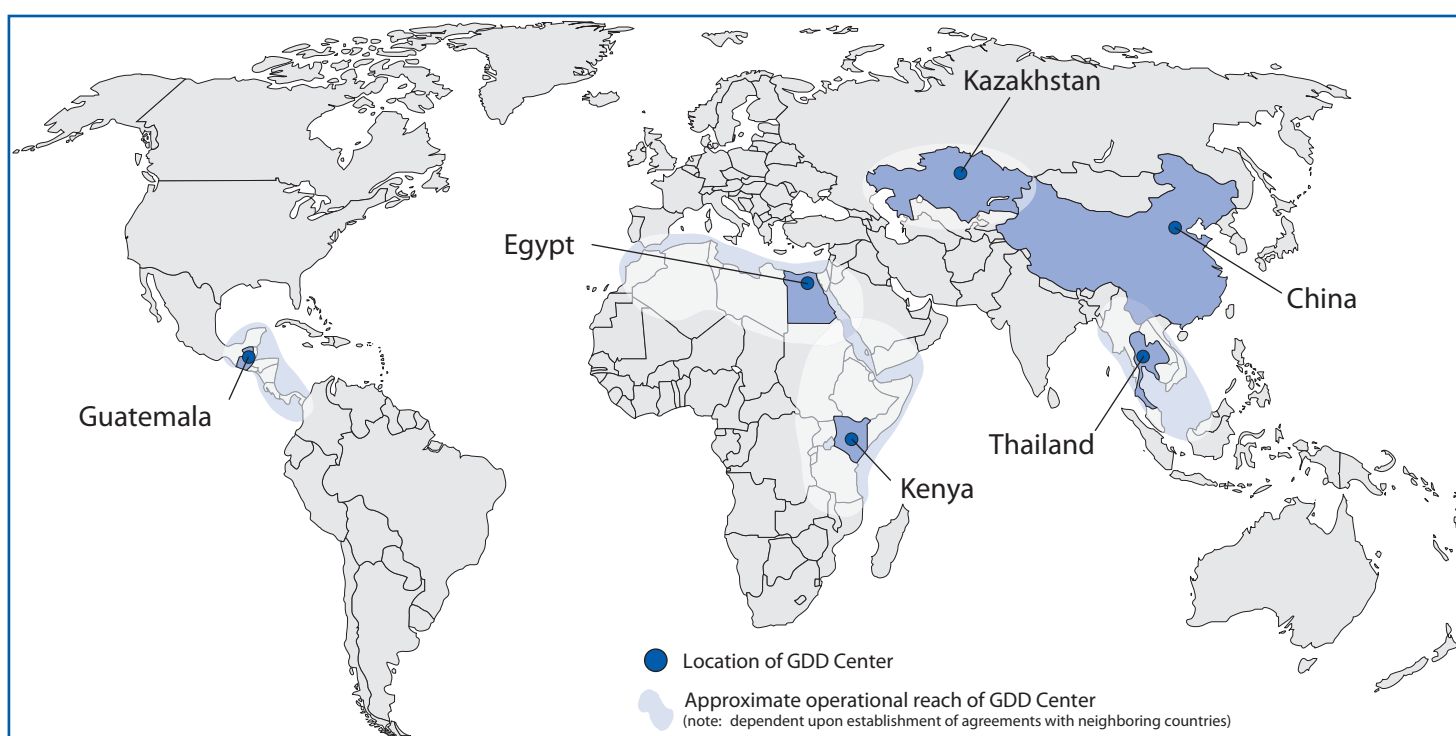


Global Disease Detection

CDC-Funded Global Disease Detection Centers



“Since the 1970’s, newly emerging diseases have been identified at the unprecedented rate of one or more per year...It would be extremely naïve and complacent to assume that there will not be another disease like AIDS, another Ebola, or another SARS, sooner or later.”

The World Health Report 2007 - A Safer Future: Global Public Health Security In the 21st Century.

UPDATED: JUNE 2008

What is Global Disease Detection?

CDC's vision for the Global Disease Detection (GDD) Program is to protect the health of Americans and the global community by developing and strengthening public health capacity to rapidly detect and respond to emerging infectious diseases and bioterrorist threats. The GDD program was built from CDC's existing international expertise in public health surveillance, training, and laboratory methods, bringing together three established, proven programs:

- Field Epidemiology Training Program (FETP), which trains scientists and public health workers on field

GDD Centers

The central focus of the GDD program is the establishment and expansion of GDD sub-regional Centers (GDD Centers). Strategically positioned around the world within WHO Regions, the Centers are CDC-funded international centers of excellence in emerging infectious diseases that focus on five key activities: 1) outbreak response, 2) surveillance, 3) pathogen discovery, 4) training, and 5) networking.

CDC currently operates GDD Centers in Thailand, Kenya, Guatemala, China, Egypt and Kazakhstan. Each Center serves as a regional resource to assist the host country and neighboring countries that lack fully developed capacity of their own. Together with host and partner countries' Ministries or Departments of Health, GDD Centers provide support to national and regional laboratories and epidemiology programs. During emergencies, the Centers typically function as members of the Global Outbreak Alert and Response Network (GOARN) that is coordinated by the World Health Organization (WHO). In non-emergency settings, the Centers work with country partners to implement disease detection and response interventions.

Locations for GDD Centers are selected in consultation with invited countries, internal experts, and national and international partners, on the basis of these criteria:

- **Public health significance:** The country has a high population density or history of infectious diseases or expected potential for emerging diseases;
- **Country commitment:** The country supports and values partnership with CDC and will actively engage in collaborative activities and identify new partners with which to work;

epidemiology and laboratory methods;

- International Emerging Infections Program (IEIP), which integrates disease surveillance, applied research, prevention, and control activities; and
- Influenza activities related to influenza surveillance and detection.

The GDD program effectively coordinates these existing CDC resources to build in-country capacity and enhance rapid response capacity for emerging infectious diseases.

- **Established CDC presence:** The country has an established, effective working relationship with CDC and supports CDC staff in-country;
- **Established regional reach:** The country has the infrastructure and regional stature to serve as regional resource, or is already acting as a regional leader in other arenas;
- **International partner presence:** The country has other U.S. Government agencies and international partners operating in-country.

Global Disease Detection: A Public Health Issue

In June 2007, the revised International Health Regulations (IHR)—the international agreement designed to help contain or prevent serious risks to public health and discourage unnecessary or excessive restrictions on travel or trade—entered into force. The revised regulations acknowledge that public health incidents can pose threats beyond national borders and that Member States bear a responsibility to the global community to identify, report, and when possible, contain public health threats before they become “public health emergencies of international concern.”

Building on CDC's existing emerging infectious disease strategies, using lessons learned from SARS, and driven by concern about the threat of avian influenza or another virus that could lead to the next pandemic, GDD represents a major U.S. contribution to this new system of global disease protection.

An Urgent Threat: Pandemic Influenza

GDD Centers help detect, confirm, and contain a variety of emerging infectious diseases that pose a substantial threat to the people of the affected country, its regional neighbors, and the world. Foremost among such threats is a pandemic influenza.

In FY2006, GDD Centers trained more than 230 participants from more than 32 countries in pandemic influenza response. In addition, the Centers collectively helped respond to and contain 28 human cases of highly pathogenic avian influenza H5N1; all responses were initiated within the goal of 48 hours.

When avian influenza was detected in Nigeria in 2006, the Kenya GDD Center—with CDC's Global AIDS Program and the Influenza Division—organized an international training for more than 40 lab technicians and public health staff from 14 African nations. The training included rapid response capacity for containment and hands-on diagnostic training and was modeled after a prototype training developed by the Thailand GDD Center in 2006. The Kenya Center continues to work with countries in sub-Saharan Africa to further enhance this preparedness.

GDD Center Achievements

During 2006 and 2007, the GDD Centers and supporting programs at CDC Headquarters have conducted a variety of activities in support of the GDD mission.

Outbreak Response

The GDD Centers collectively provided response support to more than 230 disease outbreaks and public health events during 2006 and 2007, including response to avian influenza, hemorrhagic fever, meningitis, cholera, Rift Valley fever, unknown respiratory disease, arsenic poisoning, and dengue hemorrhagic fever.

During 2007, outbreak responses included:

- Response to a Rift Valley fever outbreak in four countries, resulting in slaughter bans and livestock quarantines that led to a reduction of cases. (Kenya)
- Response to an outbreak of influenza on an HIV ward at one public hospital. The investigation resulted in a new Ministry of Health policy to purchase and begin using influenza vaccine for health care personnel. (Guatemala)
- Response to a cholera outbreak in a refugee camp, which resulted in screening and quarantine for US-bound refugees to assure that no exported cases occurred. (Thailand)

Surveillance

All Centers are conducting surveillance projects and 3 Centers are conducting active, population-based surveillance.

Centers are using surveillance data to detect outbreaks, make policy recommendations, evaluate new interventions, and measure public health impact. For example, the documentation of the burden, cost, and high-risk groups for influenza was very influential in support of a national policy in Thailand to provide influenza vaccine to persons age 65 years and older with chronic medical conditions.

Pathogen Discovery

During 2007, the GDD Centers collectively discovered 13 new pathogens. These pathogens were either identified for the first time anywhere in the world, or newly discovered within the GDD Center regions. Three pathogens were discovered during 2006.

During 2007, the GDD collectively established diagnostic testing capacity for in-country testing of 19 conditions. Capacity was established for more than 11 conditions in 2006. Because this capacity had previously been unavailable, it has enhanced disease detection and identification of appropriate response interventions.

Training

During 2007, the GDD Centers collectively helped to strengthen in-country and regional public health capacity for outbreak detection and response by graduating 51 FETP fellows (up from 27 in 2006); 116 graduates now hold public health leadership positions in their countries.

During 2007, GDD Centers collectively provided rapid response training for more than 2500 participants, and short-term public health training for more than 3600 participants.

Networking

During 2007, the Kenya GDD Center collaborated with the International Organization of Migration to develop outbreak response protocols for use in African Refugee Camps.

During 2007, the Thailand GDD Center collaborated with Vietnam, Laos, and Cambodia on National and regional multi-sectoral operational planning for avian influenza, pandemic influenza, and all-hazards response.

GDD Operations Center

The GDD Operations Center, located in the Emergency Operations Center at CDC Headquarters in Atlanta, serves as CDC's central coordination point for international outbreak information, and provides support to the GOARN. Information about outbreaks worldwide is collected from a variety of public and private sources, including, GDD Centers, CDC programs, WHO, the U.S. Department of State, the U.S. Agency for International Development (USAID), the U.S. Department

of Defense (DOD), and the Global Public Health Information Network. Information is analyzed using the expertise of scientists across the agency to help determine the level of threat to public health posed by a given event and guide the appropriate level of response. When a CDC field response is indicated, the GDD Operations Center utilizes its resources to maximize response efforts.

CDC and its Partners: Building a Global Network

GDD represents a partnership between CDC, the host country, and participating neighbor countries. To implement the GDD program, CDC also works with other domestic and international partners, including

WHO, the U.S. Department of State, USAID, DOD, the Training Programs in Public Health Interventions Network, UNICEF, the World Bank and non-governmental organizations.

Future Directions

CDC aims to build a global network of strategically located GDD Centers, capable of effectively addressing emerging infectious diseases. Ongoing and planned activities include:

- Continued support of currently funded GDD Centers in Thailand, Kenya, Guatemala, China, Egypt, and Kazakhstan.
- Expanded regional and global coverage through the strategic, incremental addition of new GDD Centers (as resources allow)
- Increased collaborations with WHO, DOD, and other key global and domestic partners
- Continued monitoring and evaluation of GDD Center activities to measure progress and assess impact



As part of the rapid response training, Dr. Patrick Blair from NAMRU-2 in Indonesia reviewed laboratory methods for sample collection, transport, and processing.

For more information about the projects and program described here, please contact:
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