



BIOLOGICAL AND TOXIN WEAPONS CONVENTION

United States Assistance Programs
Submitted for Inclusion in the Article X
Database

Updated July 2012

United States Department of State

Biosecurity Engagement Program



Organizational Description:

The U.S. Department of State manages America's relationships with foreign governments, international organizations, and nongovernmental organizations. Within the Department of State, The Biosecurity Engagement Program (BEP) seeks to engage biological scientists and combat biological threats worldwide by providing assistance to improve biosecurity and biosafety, conducting cooperative research, and improving infectious disease detection and control. BEP's programs are aligned with President Obama's *National Strategy for Countering Biological Threats* and support compliance with the Biological Weapons Convention, United Nations Security Council Resolution 1540, and the International Health Regulations. Biorisk reduction is achieved through improving laboratory biosafety and biosecurity programs, improving a country or region's ability to detect and control disease outbreaks, and actively engaging biological scientists. While working toward these objectives, BEP supports the legitimate use of biological materials and equipment necessary to combat infectious disease and enhance public and animal health worldwide.

BEP leverages technical resources and experts from numerous U.S. agencies, universities, international organizations, nongovernmental organizations, and the National Academies of Science to meet its core objectives. In addition to interagency and organizational collaborations, BEP works closely with host-country governments, U.S. Embassies, and other nations to identify needs and implement assistance necessary to ensure safe, secure, and sustainable bioscience capacity, while achieving the larger goal of reducing global biological risks. BEP efforts are designed to prevent, detect, and respond to both existing and emerging global biological threats.

Specifically, the State Department's Biosecurity Engagement Program provides assistance across the following areas:

- **Biosafety/Biosecurity:** Improve laboratory biosafety and biosecurity through technical consultations, risk assessments, and training courses; build the human capacity and internal expertise to create a sustainable culture of laboratory biorisk management.
- **Disease Detection and Control:** Strengthen the capacity for public health and veterinary health systems to detect, report, and control infectious disease outbreaks.
- **Cooperative Research and Development:** Enhance global health security and foster safe, secure, and sustainable bioscience capacity through joint scientific collaborations designed to help prevent and detect biological threats.

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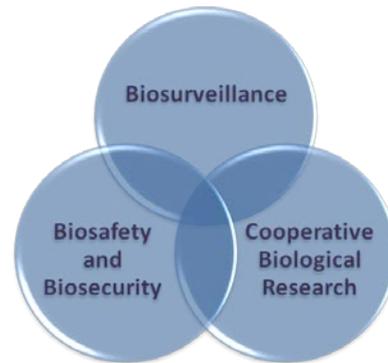


United States Department of Defense Cooperative Biological Engagement Program

The Department of Defense Cooperative Biological Engagement Program (CBEP) reduces the threat posed by especially dangerous pathogens and related materials and expertise, as well as other emerging infectious disease risks. Its goal is to prevent these agents from reaching terrorists, states or non-state actors who may use them against the United States and its allies.

The Cooperative Biological Engagement Program provides assistance across the following areas:

- **Biosurveillance:** Strengthen the capacity for public health and veterinary health systems to detect, diagnose and report infectious disease outbreaks in accordance with the World Health Organization's (WHO) International Health Regulations (IHR), the World Organization for Animal Health's (OIE) and the United Nation's Food and Agricultural Organization's (FAO) reporting guidelines.
- **Biosafety and Biosecurity:** Increase biosafety and biosecurity by securing collections of especially dangerous pathogens into a minimal number of safe and secure facilities that support transparent practices and research. Provide technical consultations, risk assessments, and training courses to build human capacity and internal expertise to create a sustainable culture of laboratory biorisk management.
- **Cooperative Biological Research:** Enhance global health security and foster safe, secure and sustainable bioscience capacity through joint scientific collaborations designed to help prevent, detect, and respond to biological threats. The research is focused on understanding and reducing biological risk posed by especially dangerous pathogens and emerging infectious diseases relevant to global health security.



All CBEP assistance focuses on long-term sustainability and capacity building that creates human capital, infrastructure and culture in support of international nonproliferation agreements, such as the Biological and Toxin Weapons Convention and United Nations Security Council Resolution 1540.

The Cooperative Biological Engagement Program supports peaceful uses of biological science and technology with partner countries and the international community.

Through collaboration with other U.S. Government agencies and international partners, our program directly contributes to U.S. implementation of Article X of the Biological and Toxin Weapons Convention. CBEP enhances situational awareness and promotes understanding of new and emerging human and animal disease threats of natural and deliberate origin by supporting international communication and integration of animal and human health surveillance of especially dangerous pathogens and other emerging infectious disease threats. We train personnel on safe laboratory practices, molecular diagnostic techniques, and pathogen characterization through DNA sequencing. CBEP supports annual science conferences to reduce global biological risks by promoting the open sharing of knowledge, innovation, and ideas gained through CBEP-sponsored research.

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USAID
FROM THE AMERICAN PEOPLE

Emerging Pandemic Threats

Background

Nearly 75 percent of all new, emerging, or reemerging diseases affecting humans at the beginning of the 21st century have originated in animals. Notable reminders of how vulnerable the increasingly interconnected world is to the global impact of new emergent diseases include HIV/AIDS, severe acute respiratory syndrome (SARS), H5N1 avian influenza, and the pandemic 2009 H1N1 influenza virus. The speed with which these diseases can emerge and spread presents serious public health, economic, and development concerns. It also underscores the need for the development of comprehensive disease detection and response capacities, particularly in those geographic areas where disease threats are likely to emerge. Recognizing this need, the U.S. Agency for International Development (USAID) has launched an Emerging Pandemic Threats (EPT) program that seeks to aggressively preempt or combat diseases that could spark future pandemics.

Strategic Approach

The EPT program emphasizes early identification of and response to dangerous pathogens in animals before they can become significant threats to human health. Using a risk-based approach, the EPT program builds on USAID's successes in disease surveillance, training, and outbreak response to focus on geographic areas where these threats are most likely to emerge. The EPT program draws on expertise from across the animal- and human-health sectors to build regional, national, and local capacities for early disease detection, laboratory-based disease diagnosis, rapid disease response and containment, and risk reduction. These efforts target a limited number of geographic areas, known as "hot spots," where new disease threats have emerged in the past. The EPT program focuses on "hot spots" in the Congo Basin of East and Central Africa, the Mekong region and other "hot spots" in Southeast Asia, the Amazon region of South America, and the Gangetic Plain of South Asia. EPT emphasizes five key areas: **wildlife pathogen detection, risk determination, institutionalization of a 'one health' approach, outbreak response capacity and risk reduction.**

Partnerships and International Assistance

USAID is implementing the EPT program with a coalition of partners to ensure a coordinated, comprehensive international effort to preempt the emergence of future pandemic diseases. These partners include organizations with specialized expertise in wildlife monitoring, field epidemiology and training, laboratory strengthening, and behavior change communications.

The EPT program consists of four projects known as **PREDICT, RESPOND, IDENTIFY, and PREVENT.**

- Through **PREDICT**, USAID and partners monitor for and increase local capacities in geographic "hot spots" to identify the emergence of new infectious diseases in high-risk wildlife, such as bats, rodents, and non-human primates, that could pose a major threat to human health.
- **RESPOND** is a project that twins schools of public health and veterinary medicine in the "hot spot" regions with U.S. counterpart institutions to strengthen the capacities of countries to train cadres of professionals in field epidemiology in order to identify and respond to disease outbreaks in a timely and sustainable manner. This project develops outbreak investigation and response trainings that merge animal- and human-health approaches toward a comprehensive capacity for disease detection and control.
- The **IDENTIFY** project represents a USAID partnership with the World Health Organization, the U.N. Food and Agriculture Organization, and the World Organization for Animal Health. The project aims to help develop laboratory networks and strengthen diagnostic capacities in geographic "hot spots".
- The **PREVENT** project builds upon USAID's ongoing H5N1 avian influenza efforts to identify behaviors and practices that increase the potential for new disease threats of animal origin to spread. **PREVENT** activities include the formulation of strategies for effective behavior change and communication approaches that address the challenges posed by emerging pandemic disease threats
- USAID's existing **DELIVER** project supports the EPT program by providing commodity procurement and logistics assistance for emerging pandemic threats.

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Armed Forces Health Surveillance Center Division of Global Emerging Infection Surveillance and Response (GEIS)

Organizational Description:

The Division of Global Emerging Infections Surveillance and Response (GEIS) of the Armed Forces Health Surveillance Center (AFHSC) coordinates a global program of infectious disease surveillance including the 5 militarily relevant areas of respiratory infections, gastrointestinal infections, antimicrobial resistant organisms, febrile and vector-borne infections, and sexually transmitted infections. Capacity building, training, and communication among partners and with international public health offices are important dimensions to the program. The majority of public health activities are performed through the Department of Defense overseas laboratories in Egypt, Kenya, Thailand, Peru, Georgia and Cambodia, as well as US Army, Navy and Air Force reference laboratories in the United States. In total, the GEIS program partnered with 72 countries in 2011.

International Assistance:

With projects throughout the world and an annual budget in excess of \$50M, many public health and surveillance activities are supported. Recent emphasis has been on standardization of laboratory and reporting methods, expanded military to military engagements, and fusion of surveillance activities into those of the Host Countries, thus enhancing capacity building efforts. Ensuring global health security and supporting compliance with IHR(2005) provides the framework for GEIS efforts, while fostering open, professional, and supportive relationships between USG and Host Country public health assets.

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United States Department of Agriculture
Research, Education, and Economics
Agricultural Research Service

Organizational Description:

The Agricultural Research Service (ARS) is the principal in-house research agency of the U.S. Department of Agriculture (USDA). It is one of the four component agencies of the Research, Education, and Economics (REE) mission area. Congress first authorized Federally-supported agricultural research in the Organic Act of 1862, which established the USDA. That statute directed the Commissioner of Agriculture "... To acquire and preserve in his Department all information he can obtain by means of books and correspondence and by practical and scientific experiments..." The scope of USDA's agricultural research programs has been expanded and extended more than 60 times since the Department was created. During World War II, USDA's various research components were brought together into the Agricultural Research Administration (ARA). In 1953, the ARA was reorganized into ARS. Today ARS has a workforce of approximately 8,000 employees including 2,000 scientists representing a wide range of disciplines. ARS has about 1,200 research projects being implemented at over 100 locations across the country and at 4 overseas laboratories.

International Assistance:

ARS is actively engaged in implementing research programs that support global disease surveillance initiatives for plants and animals, including emerging diseases and zoonotic agents that pose a threat to human health. ARS research programs support disease surveillance initiatives in several U.S. government departments and agencies such as the Animal and Plant Health Inspection Service, the U.S. Centers for Disease Control and Prevention, and the Department of State Biosecurity Engagement Program. In addition, ARS actively collaborates with international partners worldwide on research projects dedicated to support disease surveillance programs. ARS is one of the founding members of the Global Foot-and-Mouth Disease Research Alliance (GFRA), which has as its primary mission to support the United Nation's Food and Agricultural Organization (FAO) and World Organization for Animal Health (OIE) global efforts to control and eradicate FMD.

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**United States Department of Agriculture
Animal and Plant Health Inspection Service (APHIS)
Veterinary Services**

Organizational Description:

The Department of Agriculture (USDA) provides leadership on food, agriculture, natural resources, and related issues based on sound public policy, the best available science, and efficient management. Founded by President Abraham Lincoln in 1862, when more than half of the Nation's population lived and worked on farms, USDA's role has evolved with the economy. Today, the country looks to rural America to not only provide food and fiber, but also for crucial emerging economic opportunities in renewable energy, broadband, and recreation. The USDA also has a strong interest in promoting sustainable agricultural systems in the developing world. Failing agricultural systems and food shortages fuel political instability in countries worldwide. This problem undermines global stability and threatens national security. American agricultural resources and expertise play a significant role in increasing global food security by promoting technology- and science-based solutions and capacity-building activities in other countries.

International Assistance:

A cornerstone of this concept is enhanced coordination between the agriculture and public health sectors for disease surveillance, detection, and control. Agricultural organizations play a direct role in public health, especially our efforts to mitigate veterinary diseases and ensure the healthfulness of agricultural practices and products. Our programs are actively engaged in promoting enhanced food security by training local populations in state-of-the-art techniques, helping village populations develop local food supply chains from producer to consumer, and teaching local populations how to restore their watersheds. USDA has programs in disease detection and surveillance, disease exclusion, animal disease information systems, and emergency response. We deliver this technical expertise through, just to name a few, our Centers for Epidemiology and Animal Health, the National Surveillance Unit, the National Veterinary Services Laboratory and the National Animal Health Laboratory Network.

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U.S. Department of Health and Human Services

Centers for Disease Control and Prevention

Global Disease Detection Program (GDD)



Organizational Description:

GDD strengthens global capacity to rapidly detect, accurately identify, and promptly contain emerging infectious disease and bioterrorist threats that occur internationally. A central focus of GDD is the development and expansion of GDD Regional Centers in all World Health Organization (WHO) regions. Established Centers are presently located in China; Egypt; Guatemala; Kenya; India; South Africa; and Thailand. GDD oversees these seven Regional Centers and three Centers under development in Kazakhstan, Georgia, and Bangladesh. GDD promotes scientific discovery through partnership with host countries to identify new health threats and improve endemic burdens. Key to improved national and global health outcomes is the assimilation of five core activities measured and tracked in the field for: 1) outbreak response, 2) surveillance, 3) pathogen discovery, 4) training, and 5) networking.

GDD core capacities include:

- Training in field epidemiology and laboratory methods
- Surveillance and response for emerging infectious disease threats
- Assistance with pandemic influenza preparedness
- Promotion of zoonotic disease investigations and control efforts
- Risk communications and emergency preparedness
- Laboratory biosafety and improved laboratory systems

Since 2006, at the request of host nations, GDD Centers have assisted in responding to over 900 outbreaks. GDD Regional Centers work within the region to develop local ability to detect and respond effectively to both known and unknown disease events with the potential for international spread. GDD activities are conducted in alignment with Article 44 of the IHR, which directs State Parties to collaborate with each other to detect, assess, and respond to events, and to develop, strengthen, and maintain public health capacities. GDD Regional Centers also function as members of the Global Outbreak Alert Response Network (GOARN) during emergencies.

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U.S. Department of Health and Human Services

Centers for Disease Control and Prevention

Global Disease Detection (GDD) Operations Center



Organizational Description:

The GDD Operations Center is an innovative epidemic intelligence and response unit that is physically located in the Emergency Operations Center (EOC) at CDC Headquarters in Atlanta, Georgia. The Center was established in 2006 and is recognized by WHO and other partners as one of the leading resources for successful protocols that track and identify “mysterious illnesses”, where disease etiology is unknown at the onset of the event. Subject matter experts in infectious disease, veterinary medicine, medical microbiology, epidemiology, information technology, and emergency coordination are responsible for:

- Detection and verification of international disease events and threats
- Operational support for rapid deployment of CDC assets and field teams
- U.S. compliance with the revised International Health Regulations (IHR 2005)
- CDC’s liaison role with Global Outbreak Alert Response Network (GOARN)

The GDD Operations Center utilizes event-based surveillance, a system of organized and rapid capture of information about potential disease events that pose a risk to public health. This system of risk assessment is particularly effective in detecting disease occurrences in countries that have weak surveillance and reporting. Since July 2007, over 1,000 events, and 3,350 updates to

these events, have been entered into the system. This historic database allows analysts to track outbreaks over time and rapidly recall outbreak sequence and chronology.

To ensure that a CDC international response is not delayed because of financial limitations of any CDC program, the GDD Operations Center has an outbreak contingency fund to support travel of CDC experts, supplies, and shipping of specimens as needed. Since 2006, the GDD Operations Center has responded to over 60 requests for assistance in over 35 countries, including outbreaks of: Anthrax, Avian Influenza, Botulism, Cholera, Dengue, Ebola, Marburg, Monkeypox, Polio, Rift Valley fever, among others.

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U.S. Department of Health and Human Services

Centers for Disease Control and Prevention

Integrated Disease Surveillance and Response (IDSR)



Organizational Description:

Both communicable and non-communicable diseases remain among the leading causes of death, illness and disability in African communities. Because of this, in 1998, the World Health Organization Africa Regional Office (WHO-AFRO) instituted Integrated Disease Surveillance and Response (IDSR). Through technical assistance and development of guidelines and tools, CDC's IDSR Team works closely with the World Health Organization and African Ministries of Health towards developing strategies, approaches, and materials for designing, implementing, monitoring, and evaluating comprehensive disease surveillance systems. CDC has been a partner with WHO-AFRO in the development of the IDSR strategy since 1998 with support from USAID's Africa Bureau.

The IDSR Team works with WHO-AFRO to do the following:

- 1) Improve public health surveillance and response systems for prevention and control of priority diseases at all levels of national health systems,
- 2) Strengthen laboratory networks for laboratory confirmable diseases in support of IDSR,
- 3) Respond to health threats in a timely manner by using surveillance and laboratory data for decision-making and public health actions, and
- 4) Provide a platform for implementation of International Health Regulation (IHR) (2005) Annex 1 core capacities for surveillance and response.

Implementation of IDSR in a country begins with an assessment of the country's national surveillance system guided by a jointly developed WHO-CDC protocol. National capacities for surveillance, laboratory confirmation, and epidemic preparedness and response are assessed at all levels of the country's health system. The country's Ministry of Health uses these assessment results to develop a plan of action that integrates existing and expected resources and activities to achieve the benefits of a comprehensive public health surveillance and response system. This collaboration has resulted in 45 of the 46 countries in the African region adapting the IDSR technical guidelines and training materials to meet their country's needs. IDSR materials are also used outside of Africa in areas of crisis.

For more information and details regarding assistance, please contact:

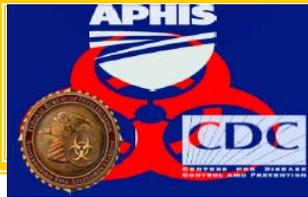
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U.S. Department of Health and Human Services

Centers for Disease Control and Prevention

Field Epidemiology Training Programs (FETP)



Established in 1980, CDC's Field Epidemiology Training Programs (FETP) help countries build sustainable capacity for detecting and responding to health threats and develop expertise so disease outbreaks can be detected locally and prevented from spreading. CDC works with foreign Ministries of Health (MOHs) to establish applied (or field) epidemiology training programs modeled after CDC's Epidemic Intelligence Service, an applied epidemiology training program created by CDC in 1951. FETPs provide actionable information so public health workers use science and data to detect and monitor disease outbreaks and determine public health policy and programming. As part of their mission to strengthen public health systems globally, FETPs also assist countries to meet their core capacity requirements for surveillance and response under the revised International Health Regulations (IHR, 2005).

FETPs are two-year full-time training and service programs. Residents enrolled in the programs typically are MOH employees with medical or scientific training. FETPs emphasize practical experience, with residents spending about 25% of their time in the classroom and the remaining 75% of time conducting mentored field work. The classroom instruction focuses on epidemiology, disease surveillance, outbreak investigation, and biostatistics. In the field, residents conduct epidemiologic investigations and field surveys, design and evaluate surveillance systems, collect and analyze data using appropriate statistical tools and methods, report their findings and make recommendations to decision- and policy-makers, and train other health workers. More than 80% of graduates stay in their home countries and many obtain leadership positions within the public health system.

CDC regularly collaborates with national and international organizations such as the U.S. Department of Defense, U.S. Department of State, U.S. Agency for International Development, the World Health Organization, the Bill and Melinda Gates Foundation, the World Bank, and MOHs around the world to help establish and support FETPs. Countries that set up programs also can collaborate with network organizations to share resources and best practices such as the global Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), and several regional networks.

Since 1980, CDC has helped develop 46 international Field Epidemiology Training Programs (FETP) serving 64 countries, graduating over 2600 epidemiologists prepared to detect and respond to health threats. CDC currently supports 24 programs covering 40 countries. During the last three years, CDC-supported FETPs responded to over 700 outbreaks and conducted 448 planned studies and 845 surveillance assessments. Through these activities, FETP residents and graduates strengthen critical public health systems, improve effectiveness of key public health programs, and address their country's public health priorities.

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U.S. Department of Health and Human Services

National Institutes of Health



National Biosafety and Biocontainment Training Program

The increase in the number of high (BSL-3) and maximum containment (BSL-4) laboratories (both in the US and abroad) creates unprecedented demand for consistent, reliable, and effective staff training delivered by highly qualified individuals through sources that are both nationally and internationally recognized.

Regulatory agencies, laboratory workers, and the surrounding community leaders insist on effective and efficient training programs to prepare personnel to work safely in these environments while ensuring biosecurity. However, training employees to work in BSL-3 and BSL-4 demands compliance with a unique set of requirements in addition to basic laboratory protocols.

Developing policies, guidelines and regulations with regard to high- and maximum containment laboratories also requires a thorough understanding of their respective environments and specific requirements of the associated workforce.

“Recognising that biosafety and biosecurity measures contribute to preventing the development, acquisition or use of biological and toxin weapons and are an appropriate means of implementing the Convention, States Parties agreed on the value of:

... National governments, supported by other relevant organisations as appropriate, using tools such as: accreditation, certification, audit or licensing for facilities, organizations or individuals; requirements for staff members to have appropriate training in biosafety and biosecurity; mechanisms to check qualifications, expertise and training of individuals; national criteria for relevant activities; and national lists of relevant agents, equipment and other resources...”-

Biological Weapons Convention, Report of the Meeting of States Parties, December 2008

The National Biosafety and Biocontainment Training Program (NBBTP), a partnership between the Division of Occupational Health and Safety and the National Institute of Allergy and Infectious Diseases (NIAID) at the National Institutes of Health (NIH) in Bethesda, MD, is responding to this need by providing:

- i) Professional Certificate Programs for Biosafety and Biocontainment (B&B) professionals as well as for Operations and Maintenance (O&M) personnel working in high containment facilities;
- ii) Professional Development Courses (on the 2 tracks: B&B and O&M; distance learning and on-site); and
- iii) NBBTP Fellowships (post baccalaureate and post-doctoral) of 2-year professional training in biosafety and biocontainment at immersing tomorrow’s biocontainment laboratory leadership in biosafety & biosecurity coursework, applied research, & experiential learning assignments.

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