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# Emerging Pandemic Threats

## Program Overview

### Background

Nearly 75 percent of all new, emerging, or reemerging diseases affecting humans at the beginning of the 21<sup>st</sup> 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. These efforts are critical to the sustainability of long-term pandemic prevention and preparedness. They will help develop better predictive models for identification of future viral and other biological threats.

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. In its first year, the EPT program will focus on "hot spots" in the Congo Basin of East and Central Africa and in the Mekong region of Southeast Asia. In subsequent years, this focus will expand to include other "hot spots" in Southeast Asia, the Amazon region of South America, and the Gangetic Plain of South Asia.

Five key areas of emphasis comprise the EPT program:

1. **Wildlife pathogen detection:** Identification of target pathogens in wildlife that threaten humans
2. **Risk determination:** Characterization of the potential risk and method of transmission for specific diseases of animal origin
3. **Institutionalization of a "one health" approach:** Integration of a multi-sector approach to public health objectives
4. **Outbreak response capacity:** Support for sustainable, country-level response
5. **Risk reduction:** Promotion of actions that minimize or eliminate the potential for the emergence and spread of new disease threats

### Partnerships

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, behavior change communications, and national planning. The EPT program also receives technical support from the U.S. Centers for Disease Control and Prevention and the U.S. Department of Agriculture.

The EPT program consists of five projects known as PREDICT, RESPOND, IDENTIFY, PREVENT, and PREPARE.

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. These activities build on USAID-supported surveillance of wild birds for H5N1 avian influenza and address more broadly the role of wildlife in facilitating the emergence and spread of new disease threats. PREDICT partners include the University of California Davis School of Veterinary Medicine, Wildlife Conservation Society, Wildlife Trust, The Smithsonian Institute, and Global Viral Forecasting, Inc.

**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 to identify and respond to outbreaks of newly emergent diseases 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. RESPOND partners include Development Alternatives, Inc., the University of Minnesota, Tufts University, Training and Resources Group, and Ecology and Environment, Inc.

The **IDENTIFY** project represents a USAID partnership with the World Health Organization (WHO), the U.N. Food and Agriculture Organization (FAO), and the World Organization for Animal Health (OIE). The project aims to help develop laboratory networks and strengthen diagnostic capacities in geographic “hot spots” for new emergent diseases.

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. PREVENT partners include the Academy for Educational Development and Global Viral Forecasting, Inc.

Through the **PREPARE** project, USAID works with the International Medical Corps to improve multi-sectoral disaster management strategies and practices in target countries and regions as a foundation for stronger response capacity and resilience against emerging pandemic threats. The project will support preparedness planning and policy development as well as indigenous, iterative capacity to develop and plan disaster and outbreak simulations of preparedness plans. It will also strengthen disaster/pandemic response skills at various targeted levels.

USAID’s existing **DELIVER** project will support these projects by providing commodity procurement and logistics assistance for preparedness and response to emerging pandemic threats. Partners include John Snow, Inc., PATH, UPS Supply Chain Solutions, Crown Agents Consultancy, and Fuel Logistics Group.

### Program Expectations

USAID anticipates that the EPT program will help develop better predictive models for early identification of viral and other biological threats in resource-poor “hot spot” regions and that it will enhance regional, national, and local capacities for surveillance, laboratory diagnosis, and field epidemiology in both the animal- and human-health sectors in these areas. These efforts will ultimately minimize the risk for the emergence and spread of new pandemic disease threats. The most immediate benefit of the EPT program’s investments in disease detection and response, however, will be reflected in their routine application in the management of more normative diseases in these areas, such as malaria, cholera, and meningitis. These contributions more broadly support the tenets outlined in the WHO’s International Health Regulations and equivalent international health standards of the C-9’