

## **Lab Consortium Focuses on Optimizing Preparedness, Surveillance**

Written by Laura Beeman Chidister, USDA, APHIS, VS, NVSL

In August 2004, President Bush clarified the importance of surveillance to the health and safety of the United States in Homeland Security Presidential Directive 9 (HSPD-9). The directive challenged all “Secretaries of the Interior, Agriculture, Health and Human Services, the Administrator of the Environmental Protection Agency, and the heads of other appropriate Federal departments and agencies” to:

- Develop robust, comprehensive, and fully coordinated surveillance and monitoring systems, including international information for animal disease, plant disease, wildlife disease, food, public health, and water quality that provides early detection and awareness of disease, pest, or poisonous agents; and
- Develop nationwide laboratory networks for food, veterinary, plant health, and water quality that integrate existing Federal and State laboratory resources, are interconnected, and utilize standardized diagnostic protocols and procedures.

HSPD-9 gave further impetus to developing networks to coordinate the specific skills and resources of laboratories nationwide for the complete, rapid, and effective facilitation of disease surveillance and response to bioterrorism-related health emergencies. The Integrated Consortium of Laboratory Networks (ICLN) is designed to establish communication and consistency among the diverse laboratory systems. The ICLN is comprised of five major laboratory networks as well as the Federal systems specifically responsible for laboratory preparedness and response. Today, the environmental Laboratory Response Network (eLRN), Food Emergency Response Network (FERN), Laboratory Response Network (LRN), National Animal Health Laboratory Network (NAHLN), and the National Plant Diagnostic Network (NPDN) collaborate to form the Nation’s strongest weapon against bioterrorism: a system of laboratory networks capable of integrated and coordinated response to compound incidents.

### **eLRN**

The eLRN is led by the Environmental Protection Agency (EPA). The network relies on a combination of agency, State environmental, commercial, and other Federal laboratories. The eLRN is in its formative stage, and its current strength is in evaluating environmental contamination caused by toxic industrial chemicals. The overall goal is to operate an integrated, fully equipped network of Federal, State, and commercial laboratories that will focus on quick response to environmental chemical, biological, or radiological events, including chemical warfare agents. The program envisions a limited sentinel role for drinking water, and expansive response and remediation capabilities in environmental media. The EPA and Department of Homeland Security (DHS) have lead roles in funding and establishing this network in partnerships with Centers for Disease Control (CDC), Food and Drug Administration, Department of Defense (DOD), and the Federal Bureau of Investigation (FBI).

### **FERN**

The FERN is a federally-funded organization consisting of State and Federal laboratories equipped to analyze food samples in the event of a biological, chemical, or radiological attack on the United States. To date, the FERN consists of 119 laboratories (26 Federal and 93 State and local) representing 48 States and Puerto Rico. Each laboratory is dedicated to prevention, preparedness, response, and recovery in the event of an attack on the U.S. food supply. In cooperation with other laboratory networks, the FERN continues to advance support programs such as lab outreach, method development/validation, training, proficiency testing, monitoring, and electronic communications.

### **LRN**

The biological sector of the FERN overlaps somewhat with another important laboratory network developed to increase laboratory capacity for response to health emergencies caused by select agents. The LRN was established 5 years prior to HSPD-9 by the FBI and the Association of Public Health Laboratories in response to the call for anti-terrorism action set out in Presidential Decision Directive 39. The LRN continues to play an instrumental role in improving the public-health laboratory infrastructure in today's atmosphere of increased preparedness for biological and chemical terrorism. The CDC serves as the lead agency for the LRN.

### **NAHLN**

The NAHLN was established in 2002 when special funds were awarded by the Cooperative State Research, Education & Extension System (CSREES) in collaboration with the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service to develop laboratory capacity and surveillance programs for eight high priority foreign animal diseases. The NAHLN began with 12 State pilot laboratories and has expanded to encompass 52 State and Federal laboratories dedicated to providing accessible, timely, accurate, and consistent animal-disease laboratory services nationwide. Working in close coordination, these laboratories provide the increased laboratory capacity, standardized rapid diagnostic techniques, secure communication systems, modern equipment, experienced personnel, national training and proficiency testing, and biocontainment requirements necessary to respond efficiently to animal-disease outbreaks.

### **NPDN**

The NPDN is a significant component of the Animal & Plant Disease and Pest Surveillance & Detection Network established by CSREES. The purpose of the NPDN is to enhance national agricultural security through the rapid detection and reporting of deliberately-introduced, high-consequence plant pests and pathogens, utilizing U.S. Land Grant University plant disease and pest diagnostic facilities. The NPDN ensures that all participating university facilities are alerted of possible outbreaks and have the necessary equipment, technology, and skills to confront them.

### **ICLN**

The ICLN Memorandum of Agreement (MOA) was signed in spring 2005 by the EPA, USDA, DOD, DHS, Department of Commerce, Department of Health and Human Services, Department of Interior, Department of Justice, and Department of State. The MOA established a framework for building a national laboratory capability that is integrated and coordinated in response to

incidents involving multiple types of agents, matrices, and targets during all phases of incident management.

The mission of the ICLN is similar to that of the networks previously described; however, its scale is much larger. The ICLN was created with this vision: to establish “a U.S. homeland security infrastructure with a coordinated and operational system of laboratory networks that provide timely, high quality, and interpretable results for early detection and effective consequence management of acts of terrorism and other events requiring an integrated laboratory response.” With several independent networks working for one essential goal, the Nation recognized a great potential power that was not being employed—the power of a unified effort.

The ICLN commits to effectively utilize the distinct capabilities and focuses of its constituent laboratories/networks to optimize national laboratory preparedness and provide mutual support in the effort for more effective surveillance. The ICLN’s link to the laboratory networks is through the Network Coordinating Group (NCG) where representatives from the networks and departments collaborate under the aegis of DHS. Within the NCG structure, subcommittees are being developed to ensure coordination for effective agent prioritization; appropriate analytic methods for high quality, timely, and interpretable results; proficiency testing, quality assurance, and accreditation of participating laboratory testing entities; training across networks; and information management, including data exchange and knowledge management.

For more information on the ICLN, please contact Barbara Martin of National Veterinary Services Laboratory at [Barbara.M.Martin@aphis.usda.gov](mailto:Barbara.M.Martin@aphis.usda.gov) or (515)663-7731.