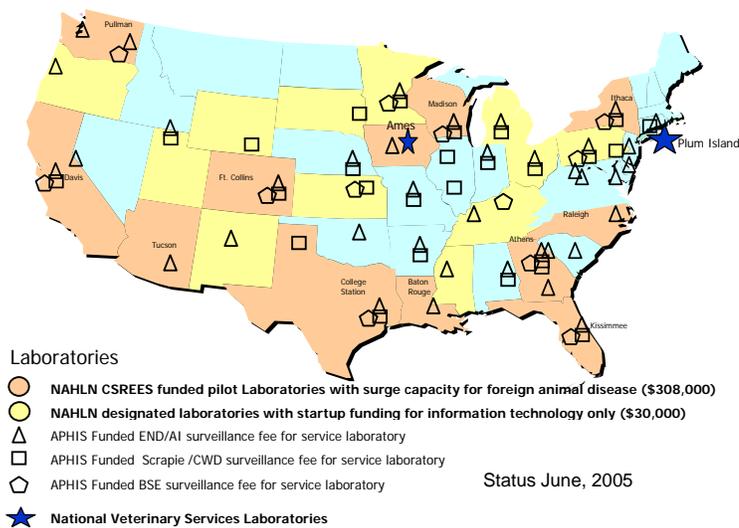


GROWING THE NATIONAL ANIMAL HEALTH Laboratory Network



Progress and Plans- June 2005

The job of national animal disease surveillance works best when responsibility is shared between publicly-funded state animal health laboratories, represented by the American Association of Veterinary Laboratory Diagnosticians (AAVLD), and federal animal health laboratories administered through the USDA's Animal and Plant Health Inspection Service (APHIS). This partnership safeguards the health of our nation's livestock and poultry, companion animals and wildlife, and protects the public from diseases common to animals and humans. A national strategy combining the nation's federal, state, and local resources has begun to function in response to animal health emergencies, including bioterrorist events, as well as newly emerging and foreign animal diseases. The USDA Safeguarding Review identified the need for a state-of-the-art **National Animal Health Laboratory Network (NAHLN)**. In 2002 funding was made available through CSREES to 12 pilot state laboratories for foreign animal disease testing (see map). It is now time to expand the network by funding additional laboratories so that the national network can be completed.

Benefits and Risk

The nation's public health and food supply is at constant risk from accidental or malicious introduction of exotic animal diseases. The threats include obvious ones like foot and mouth disease (FMD), as well as agents that affect animals and humans, such as avian influenza,

anthrax, bovine spongiform encephalopathy (BSE) and West Nile virus. Animal industries, regulatory agencies, and public health benefit from the communications and proficiency fostered by this network. Full implementation will ensure rapid detection of agroterrorist events, natural or accidental contamination of our food supply, animal disease outbreaks involving agents that impact human health, and early recognition of new or economically important diseases. Since 2002 the US has seen the introduction of exotic Newcastle disease, avian influenza and BSE. They were controlled by the collaborative interaction of the NAHLN with the USDA. Importantly, the NAHLN strengthens current state-based laboratory testing for export of animals and live animal products, and ensures that tests meet international quality standards to guarantee access of animals and their products to global markets.

What is needed?

In 1999 the United States responded to human public health threats by creating and funding a comprehensive public health laboratory response network coordinated by the Centers for Disease Control. A parallel response network was organized in 2002 to deal with animal disease threats. The **National Animal Health Laboratory Network** is being assembled as federal resources are made available. Its goal is to address biological and chemical threats to animal agriculture and the security of our food supply. Critical features of the NAHLN that are under development include:

- Expanded capacity for laboratories to respond to unusual and emergency animal diseases, including bioterrorism events, through rapid diagnostic tests.
- Standardized diagnostic techniques that can be used at state, regional, and national levels
- Secure communication, reporting and alert system
- Modern equipment and experienced personnel trained to detect unusual, foreign, and bioterrorist agents
- National training, proficiency testing, and quality assurance to ensure uniform test results
- Federal and state facility upgrades to meet biocontainment requirements
- Regional and national emergency scenario testing of the network communications and reporting protocols

The Need for Full Implementation

HR3448 (Public Health Security and Bioterrorism Preparedness and Response Act of 2002 - section 335 a.6) authorizes the Secretary of Agriculture to develop an agricultural early warning surveillance system. Congress has the authority to appropriate funding directed toward this effort. Special funds for Homeland

security were awarded by the Cooperative State Research, Education & Extension System (CSREES) identified as the **Food and Agriculture Defense Initiative** within the CSREES Budget. Funds were provided in May 2002 to 12 State/University diagnostic laboratory facilities for a 2-year period to develop capacity and surveillance programs for eight high priority foreign animal diseases. Assays for two important avian diseases have now been deployed. Validation of rapid high volume tests for major three major diseases of swine, cattle and horses (CSF, FMD, and VS, respectively) is nearly complete. Rift Valley Fever (RVF) was added recently as a 9th high priority disease. The NAHLN is committed to improving the capacity, sensitivity and turnaround times of tests for emerging and introduced animal diseases. The pilot laboratories are building new approaches to sharing diagnostic data across a common electronic reporting platform.

APHIS provides laboratories in the network with equipment, diagnostic training, proficiency test samples, reference reagents, and electronic communication and reporting tools. The pilot NAHLN laboratories have enhanced their laboratory biosecurity and physical security. The network is developing reporting tools and, with AAVLD facilitation, ensuring that tests for high impact diseases like FMD meet a uniform national standard.

Critical Need for Increased Funding

It is time to move the NAHLN from its current pilot stage to a truly national network. This is critical if the country is to have a national surveillance system that can rapidly, reliably, and uniformly detect zoonotic, foreign animal disease and agroterrorism threats in all parts of the United States.

In 2002 and 2003, APHIS established contracts with 26 laboratories to test for chronic wasting disease and scrapie. Agreements were made in 2004 with 30 laboratories for END surveillance testing and with 12 laboratories for bovine spongiform encephalopathy (BSE) surveillance. Thirty-seven states now have laboratories assisting NVSL in providing Federal animal diagnostic services. Although state animal health laboratories have accepted additional responsibilities, funding has not increased to bring them to NAHLN

standards established in the pilot program. Thirty seven states now have laboratories assisting NVSL in providing Federal animal diagnostic services. Only the 12 original laboratories are receiving the ongoing infrastructure funding to ensure the laboratory capacity necessary for response and recovery from an animal disease outbreak.

Targeted surveillance for early detection of diseases can be safely conducted in BSL-2 laboratories. Once a highly contagious disease such as FMD has been confirmed, it is necessary to conduct testing in a more secure laboratory setting such as BSL-3. Having adequate BSL-3 space will ensure that large numbers of samples can be tested while minimizing the chance of spread into the environment.

Many laboratories need critical infrastructure, such as better building security, the ability to safely handle high-impact human pathogens under conditions of high volume testing, specialized diagnostic equipment, and proficiency-tested staff. Without them, the goals of a national laboratory network concept cannot be met. **This shortfall was recognized by the United States Animal Health Association (USAHA), which recently passed a resolution asking the USDA for full funding of the network, characterized by \$85 million to establish a fully-funded NAHLN. An additional \$30 million is needed for annual ongoing support of the network and its coordination by USDA's National Veterinary Services Laboratories (NVSL).** Groups supporting the NAHLN initiative include the American Veterinary Medical Association (AVMA) and the American Association of Veterinary Medical Colleges (AAVMC).

The NAHLN evolved quickly in the past 4 years. It holds the promise of enhancing food safety and the economic value of animals and food to the U.S. economy, which are worth \$100 billion in annual cash receipts. These assets are threatened by major or limited outbreaks of foreign or uncontrolled animal disease. Step 1 in responding to a national disease emergency is to diagnose what is taking place - quickly, accurately, and to a nationally agreed standard.

The response plan and protocols are in place. What remains now is to fund the NAHLN so that it can move from a successful pilot to a national system



A State and Federal Partnership to Safeguard Animal Health