



CHAPTER 9



International and Domestic Collaborations in Animal and Public Health

USDA–APHIS has traditionally looked beyond the U.S. borders in its efforts to control animal diseases. Recently, many factors have magnified the need for an international focus on animal disease control efforts. These factors include regionalization, worldwide movement toward more open market access, intensified animal production, the constant evolution of infectious agents, increased international passenger travel, interactions of wildlife with livestock, and the potential impact of biotechnology and bioterrorism. In light of the changing global environment and the increasing potential for disease spread, international collaborations must be forged and combined with domestic efforts to establish more effective animal health programs.

Within U.S. borders, collaborations are equally important; the domestic animal health infrastructure is a complex network that would not function without the combined efforts of Federal and State agencies, industry, and academic institutions. APHIS–VS continues to strengthen relationships and collaborations with traditional and nontraditional stakeholders such as the aquaculture industry, wildlife producers, and emergency response organizations to improve the service provided to U.S. animal agriculture.

This chapter describes some of USDA–APHIS' international and domestic collaborations, partnerships, and activities. While not a comprehensive list, the information here provides a brief overview of the agency's collaborative efforts abroad and at home to safeguard animal health on a global level.

APHIS International Activities

APHIS' safeguarding strategy includes controlling pest and disease risks at U.S. borders by working overseas to detect and prevent the spread of pests and diseases at their points of origin before they can become larger regional or global threats. APHIS works with foreign countries to monitor, control, or eradicate animal diseases and pests that pose a risk of being introduced into, and potentially established in, the United States, causing severe damage to U.S. agriculture. This includes diseases and pests such as screwworm, CSF, FMD, and TBT.

Animal health officials from Canada, Mexico, and the United States have created the North American Animal Health Committee, which meets regularly to discuss common animal health issues. Similarly, U.S. animal health officials meet regularly with their Australian, New Zealand, and Canadian counterparts in the Quadrilateral Animal Health Committee.

APHIS is initiating a new partnership with regional and international health organizations, the Government of France, and the Food and Agriculture Organization (FAO). The intent is to build a local field force of veterinary epidemiologists and para-epidemiologists to monitor animal diseases and disease syndromes; provide rapid laboratory access and diagnosis of diseases; assess and prioritize veterinary infrastructure; and, develop animal disease emergency response and management infrastructure.

Other international collaborative efforts are described below.

APHIS International Technical and Regulatory Capacity Building Center

APHIS' International Services program established the International Technical and Regulatory Capacity Building (ITRCB) Center in 2007 to coordinate the increasing number of international efforts undertaken by various APHIS units. The ITRCB Center handles all requests for APHIS international capacity building (domestic and foreign) as well as all requests to APHIS regarding international guests who wish to visit the Agency's facilities; APHIS is receiving increasing numbers of such requests. These contacts involve a wide range of topics, including biotechnology, regulatory processes and policy, pest risk analysis, epidemiology, wildlife control and surveillance, FAD, diagnostics, and animal and plant quarantine and inspection.

The goal of the APHIS ITRCB Center is to ensure that requests are handled in a timely and efficient manner, consistent with overall APHIS goals and priorities. Additional mid- to long-term goals include increasing the number and types of formal international technical and regulatory capacity-building training courses.

OIE Reference Laboratories and Collaborating Centers

The OIE has a global network of 160 reference laboratories that are disease specific and 20 collaborating centers that deal with specific spheres of competence, such as epidemiology or risk analysis. In the United States, the NVSL and CVB are recognized as OIE Collaborating Centers for the Diagnosis of Animal Diseases and Vaccine Evaluation in the Americas. APHIS-VS' CEAH is an OIE Collaborating Center for Animal Disease Surveillance Systems and Risk Analysis.

An OIE reference laboratory is expected to function as a center of expertise and standardization of diagnostic techniques for the specified disease. The reference laboratory must have a designated expert in the disease who is a leading and active researcher and can provide scientific advice and technical assistance on topics dealing with surveillance and disease control. The expert is expected to develop new procedures for the diagnosis

of the disease and provide biological reference products and diagnostic reagents to other laboratories. The expert may also be asked to provide technical training to personnel from OIE member countries, coordinate scientific and technical studies with other laboratories, and contribute to the preparation or review of reference documents. The designation of OIE reference laboratory is determined by the level of international activity conducted by the laboratory. Annual documentation of activities supporting the designation is required.

NVSL is an OIE reference laboratory for vesicular stomatitis; bluetongue; END; anthrax; PRV; leptospirosis; contagious equine metritis; Eastern, Western, and Venezuela equine encephalomyelitis; EIA; HPAI; and West Nile encephalitis. NVSL also provides reference assistance to other veterinary diagnostic laboratories with regard to certain areas of expertise.

The CVB is the sole confirmatory and investigatory testing laboratory involved in regulation of commercial veterinary biologics in the United States. The CVB provides support to the OIE through the following activities:

- Development, distribution, and use of worldwide standard protocols for biologics evaluation and the training of scientists throughout the world on these protocols;
- Validation and supply of standard reagents to biologics manufacturers and regulatory laboratories worldwide;
- Improvement of biological techniques for diseases of significance in the Americas through developmental projects;
- Review, development, and harmonization of testing protocols in collaboration with industry and other governmental laboratories;
- Active participation in international harmonization initiatives aimed at improving standards and testing procedures for veterinary biologics; and,
- Hosting of scientific meetings in the area of veterinary biologics (see Chapter 5 for more information).

For 10 years, CEAH has served as an OIE Collaborating Center for Animal Disease Surveillance Systems and Risk Analysis. Each year, the amount and type of support that CEAH provides in this capacity increases. Examples of CEAH's assistance to the OIE during 2007 included:

- Presentations and discussions at Johne's disease workshops in Japan and Switzerland;
- Review of and commentary on country surveillance protocols for FMD, rinderpest, and AI;
- International discussions on antimicrobial resistance and monitoring;
- Collaboration with an OIE working group on epidemiology to develop or review guidelines for compartmentalization and surveillance for AI, END, and rinderpest;
- Participation in the OIE–FAO AI steering committee;
- Provision to the OIE of information concerning possible emerging animal health events;
- Participation in the Global Livestock Early Warning System joint project between FAO–OIE–World Health Organization (WHO); and,
- Participation in an OIE followup mission to South America to assess the FMD situation there.

In addition, CEAH supported the OIE mission in 2007 by providing training courses relating to spatial analysis, epidemiology, and risk assessment. International courses on these topics were held in Indonesia, Mali, Taiwan, and Myanmar. In support of the HPAI identification and response initiatives of OIE and FAO, experts participated in training classes in Egypt, Senegal, Austria, and Indonesia. Many foreign visitors were welcomed by and trained at CEAH during 2007, including delegations from Ethiopia, Taiwan, Iraq, China, Russia, and Afghanistan.



In part because of the increasing opportunity to interact with OIE, FAO, and other OIE or FAO collaborating/reference centers, CEAH has created an Office for International Collaboration and Cooperation. The office will assist CEAH in identifying and prioritizing opportunities for international training, seminars, and collaborative projects in cooperation with APHIS International Services' ITRCB Initiative.



FAO Reference Laboratories and Collaborating Centers

The NVSL is an FAO reference laboratory for FMD, CSF, viral hemorrhagic disease of rabbits, malignant catarrhal fever, rinderpest, other vesicular diseases, African horse sickness, and ASF.

In the past, FAO has designated reference laboratories for specific diseases and collaborating centers for disciplines such as public health. These designations were formalized through appropriate exchanges of letters and other types of agreements. In October 2006, the FAO elected to have a more formal process that will reflect the agreed-upon terms of reference and concrete areas for collaboration as specified in a mutually agreed work plan. The term “FAO reference center” is used to designate both reference laboratories and collaborating centers and the designation will initially be good for a maximum of 4 years. There are currently 14 FAO reference laboratories and 25 FAO collaborative centers.

USDA International Coordination Group for Highly Pathogenic Avian Influenza

Recognizing the potential impact of HPAI, USDA formed an International Coordination Group for HPAI. With the continued spread of HPAI (H5N1) throughout the world, concern that the United States might become infected increases. USDA’s involvement in international HPAI efforts during disease outbreaks provides training and educational

opportunities in foreign countries to better prepare USDA to address the disease should it arrive here. More than 60 countries have now reported infection with HPAI (H5N1); in 2007, 6 new countries reported first-time infections, and 7 countries previously reported to be free of the virus reported new outbreaks.

Capacity-building initiatives in HPAI-affected countries will increase the overall likelihood of identification and control of HPAI and of other highly contagious and possibly zoonotic diseases. This, in turn, will help protect the United States by reducing the spread of these diseases worldwide.

Goals of the international partnership for avian and pandemic influenza include elevating the issue on national agendas; coordinating efforts among affected nations and those trying to provide help; mobilizing and leveraging resources; increasing transparency in disease reporting and surveillance; and, developing infrastructure and resources to identify, contain, and respond to avian influenza in birds and a potential human pandemic influenza.

USDA involvement focuses on

- Rapid reaction to the first signs of accelerated transmission of H5N1 and other highly pathogenic influenza strains in birds so that appropriate international and national resources can be allocated;
- Prevention and containment of an incipient epidemic through capacity building and in-country collaboration with international partners;
- Support expanded cooperation with appropriate multilateral organizations such as WHO, FAO, and OIE;
- Timely coordination of bilateral and multilateral resource allocations, dedication of domestic resources (human and financial), improvements in public awareness, and development of economic and trade contingency plans;
- Increased coordination and harmonization among nations of preparedness, prevention, response, and containment activities, complementing domestic and regional preparedness initiatives, and encouraging appropriate development of strategic regional initiatives; and,

- Use of the best available science for decisionmaking.

In 2007, USDA activities in support of these goals were spread across the globe and fell into the primary categories of preparedness and communication, surveillance and detection, and response and containment. USDA conducted workshops on animal health communications, epidemiology, surveillance technology, and LBMS sampling. In addition, diagnostic test kits and real-time PCR machines were provided to some countries to enhance their ability to rapidly diagnose AI.

Domestic Partnerships and Collaborations

As with international collaborations, domestic partnerships and collaborations are becoming increasingly important to APHIS–VS. Traditional stakeholders, such as the various livestock industries and State animal health officials, have long worked in partnership with VS to achieve successes in animal disease eradication and control programs. More recently, it has become apparent that VS' role in emergency preparedness and response and in veterinary public health requires additional collaborations, as described below, to enhance effectiveness.

In addition, the growing recognition of the interdependencies among animal, human, and environmental health necessitates a new view of health partnerships and has led to development of a “one health” concept.

Public Health and Agriculture Partnerships

Worldwide, veterinarians and human health care professionals recognize the need to improve collaborations among organizations within the agriculture and public health sectors. The increasing frequency of outbreaks of emerging and re-emerging zoonoses (for example, severe acute respiratory syndrome, monkeypox, West Nile virus, Nipah virus, etc.) have heightened the

public's awareness of zoonotic diseases and, in the United States, have resulted in a number of formal efforts to improve cooperation among government agencies. Policy reforms—such as the 2001 Animal Health Safeguarding Review, the 2002 Public Health Security and Bioterrorism Act, and Homeland Security Presidential Directives 5-10—call for an integration of agriculture, public health, and food safety surveillance to defend against both natural and intentional disease threats. In addition, WHO's technical report “Future Trends in Veterinary Public Health” and article “Converging Issues in Veterinary and Public Health” underscore the mutual need for and benefit of developing and strengthening the partnership between veterinary medicine and human health care.

The following sections describe some of the collaborative domestic projects in the United States related to public health and agriculture.

Interagency Working Group for the Coordination of Zoonotic Disease Surveillance

The Interagency Working Group for the Coordination of Zoonotic Disease Surveillance (IWGCZDS) was created in 2002 and tasked to address coordination of human and animal disease surveillance systems. This group is working to (1) identify essential partners and their needs; (2) develop a system of communication and action triggers; (3) divide the workload to maximize efficiency and identify roles and responsibilities; and, (4) incorporate animal health surveillance into existing systems. The IWGCZDS membership includes representatives from VS, CDC, FDA, the National Assembly of State Animal Health Officials, and the National Association of State Public Health Veterinarians.

One of the IWGCZDS group's efforts is a survey of all State agriculture and public health veterinarians. This survey, developed and administered in partnership with the USAHA, will provide a better understanding of current reporting and response methods and jurisdictional complexities at the State level. The IWGCZDS plans to use the survey results to develop examples of “best practices” among agriculture and public health departments. In

addition, the IWGCZDS intends to use bioterrorism preparedness exercises to identify obstacles to coordinating efforts.

Laboratory Networks

Laboratory networks provide promising potential for coordinating zoonotic disease surveillance. Networks include the NAHLN, the Laboratory Response Network (LRN), and the Food Emergency Response Network (FERN). NAHLN, a USDA-coordinated network of Federal and State veterinary diagnostic laboratories, is being developed to conduct targeted surveillance for early detection of disease outbreaks and to ensure rapid and sufficient laboratory capacity in response to animal health emergencies (see Chapter 5 for more information on NAHLN). The LRN, a CDC-coordinated network of Federal and State laboratories, is working to expand its membership to include one animal disease diagnostic laboratory in each State to provide preparedness and integrated response capacity for bioterrorism or other public health emergencies. The FERN, coordinated jointly by FDA and USDA–FSIS is a national network of food-testing laboratories designed to integrate the detection of threat agents in the food supply. NAHLN, LRN, and FERN are working to maximize efficiencies among the three networks; together, they represent a cornerstone in the development of comprehensive agriculture, public health, and food safety monitoring systems.

One Health Initiative Task Force

In 2007, a One Health Initiative Task Force was formed, led jointly by the American Veterinary Medical Association (AVMA) and the American Medical Association (AMA). The task force is charged with strengthening the relationship between animal and human medicine and articulating a vision of one health that encompasses and integrates animal, human, and environmental health. The primary goal of the initiative is to help physicians and veterinarians recognize, monitor, and respond to outbreaks of zoonotic diseases.

The One Health Initiative began as a 2006 proposal by the AVMA to encourage better cooperation

between veterinary medicine and human medicine, including participation of schools, industry, associations, and individual practitioners. In June 2007, the AMA moved to support the One Health Initiative, and the AVMA selected task force members for the initiative. Task force members include representatives from VS, HHS (including CDC), AVMA, AMA, student AVMA and AMA chapters, State public health veterinarians, veterinary colleges, schools of public health, and industry.

The group will prepare a comprehensive report with recommendations and actions to support and sustain the One Health Initiative concept.

Wildlife Disease Surveillance

Surveillance and monitoring for wildlife disease is becoming increasingly important to public and animal health. New and emerging livestock and human diseases sometimes appear first in wildlife. Wildlife health also is important for conservation management and may serve as an indicator of environmental health.

For some diseases, programs that include wildlife surveillance may support domestic animal health, increase international trade and consumer confidence in products, and protect public health. For this reason, wildlife disease surveillance and monitoring needs to be approached through partnerships and cooperation among the appropriate Federal and State wildlife, agriculture, and public health agencies; industry; nongovernmental organizations such as the USAHA; and, academia.

Common disease surveillance objectives include

- Rapidly detecting FADs,
- Monitoring risk of introduction,
- Establishing baseline data on herd or population health,
- Estimating disease prevalence, and
- Assessing population health in the case of a human disease epidemic.

Three current examples of national collaborative efforts for disease surveillance in wildlife are the

interagency approaches for surveillance of CSF, HPAI, and CWD. These interagency efforts involve surveillance for a foreign animal or emerging disease and rely heavily on cooperative relationships at the local level, as well as diagnostic support through partnerships such as the NAHLN. (For more information on these efforts, see Chapters 2 and 5.)

Collaboration for Incident Response Preparedness

States have concurrent authorities and responsibilities that support the APHIS mission to protect the health and value of U.S. agriculture and natural resources. Consequently, State officials are often called upon to respond with APHIS to emergencies or incidents that threaten agricultural and natural resources. This includes responding to specific threats to agriculture and providing support during more general or “all hazards” incident responses such as hurricanes, large-scale fires, and other natural or human-caused disasters. APHIS and State officials recognize that strategic alliances and collaboration are imperative so that agencies can best prepare to respond appropriately.

APHIS and State agencies have a history of successful collaborative responses to animal and plant pest and disease outbreaks and are also building successes in the area of all-hazards response. Recent incidents that have been very large in scope and complexity include the 2003 END outbreak and 2005 hurricanes Katrina and Rita, which stretched State and APHIS resources. These experiences have confirmed the need for incident response preparedness principles and standards that are flexible, robust, and able to integrate APHIS and State personnel across multiple locations.

Although USDA has achieved successful outcomes resulting from the long-standing alliance between APHIS and States related to incident preparedness and response, there is still a need to further strengthen the alliances, and, in particular, the collaborations that support them. In 2007, these needs were examined by APHIS Policy and Program Development analysts with the assistance and concurrence of an Assessment Working Group, made up of

representatives of APHIS, the National Association of State Departments of Agriculture, and other members of the APHIS/State strategic alliance.

The assessment and subsequent reviews led to four recommendations, which resulted in the following goal statements for APHIS and States:

- To clarify and document roles and responsibilities;
- To institute good organizational practices that support collaboration;
- To institute mechanisms for providing additional support when needed;
- To develop, document, and monitor communication principles that support collaboration; and,
- To work to create a culture of collaboration across all boundaries.

To improve collaborations with States, APHIS recently created a State liaison position for State officials to contact regarding issues of concern, as recommended by the Assessment Working Group. Once the position has been filled, the liaison will be stationed in Riverdale, Maryland, as part of APHIS’ Legislative and Public Affairs program.