



CHAPTER 1



Veterinary Services Strategic Program Highlights

As part of the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS) carries out USDA's animal health safeguarding mission and facilitates safe agricultural trade. As an animal health organization, VS is engaged and vigilant across the full spectrum of animal health issues.

Through its surveillance and emergency response activities, and enhanced by an expanding network of partners, VS safeguards the Nation's animals, animal products, and veterinary biologics by preventing, controlling, and/or eliminating animal diseases, and monitoring and promoting animal health and productivity.

In addition, APHIS-VS has identified a number of specific focus areas as central to its mission. In this chapter, we will explore these areas in addition to significant animal health events that occurred in 2007. These focus areas include

- Emergency Planning and Preparedness,
- Avian Influenza Surveillance,
- The National Aquatic Animal Health Plan,
- The National Animal Identification System, and
- The National Animal Health Surveillance System.

Emergency Planning and Preparedness

Animal health emergencies (AHEs) have a major impact on the Nation's agricultural infrastructure, animal and public health, food safety, economy, and export markets. AHEs can include foreign animal disease (FAD) incursions, natural disasters, emerging

disease incidents, and agroterrorism. USDA-APHIS is designated the lead Federal agency for prevention or mitigation of AHEs in the United States.

APHIS-VS' National Center for Animal Health Emergency Management (NCAHEM) provides leadership in ensuring rapid detection of FADs, should they occur, and responding effectively to control or eradicate them. NCAHEM develops strategies and policies for effective incident management and coordination of incident responses. During an emergency, NCAHEM is responsible for deployment of critical veterinary supplies and personal protective equipment from the National Veterinary Stockpile (NVS) to responders within 24 hours.

Four Pillars of Emergency Management

NCAHEM creates partnerships among Federal, State, Tribal, local, and international entities to continually improve its approach to emergency management. NCAHEM's strategic approach comprises tactics aligned with the four pillars: preparedness and communication, surveillance and detection, response and containment, and recovery and continuity of animal agriculture operations.

Pillar 1: Preparedness and Communication—

Preparedness for a rapid response to disease outbreaks is increasingly important in our global environment. NCAHEM develops flexible guidance and response plans that can readily be adapted to address any animal disease or pest situation. To ensure that these plans reflect current thinking, NCAHEM builds and maintains a communications structure involving various entities and organizations—ranging from Federal and State agencies to national and regional animal health associations.

APHIS has the authority to coordinate response efforts for incidents involving animal diseases. If a disease agent threatens human health or U.S. critical infrastructure, or if the characteristics of the incident suggest agroterrorism, USDA's Office of Homeland Security will call upon the U.S. Department of Homeland Security (DHS) to assist APHIS.

Pillar 2: Surveillance and Detection—Despite all prevention efforts, agents that cause an FAD may enter the United States. Effective surveillance and rapid detection provide for the most expedient response to disease agents. NCAHEM personnel work closely with those responsible for disease surveillance, diagnostic services, and onsite investigations to facilitate information exchange and establish whether an FAD is present.

When a potential FAD is reported, foreign animal disease diagnosticians are rapidly deployed through area or State offices to conduct an investigation and procure samples, usually for next-day laboratory analysis. About 400 such investigations are performed annually, with only a small number resulting in an assessment that indicates a possible FAD. (See Chapter 2 for more information on FADs.) Awareness and reporting of suspect FADs by producers, livestock owners, and veterinarians play an important role in surveillance and the initiation of appropriate response and control actions.

To further support national emergency response planning, NCAHEM has taken a leadership role on the APHIS Emergency Management Leadership Council (EMLC). The EMLC was established to provide cross-unit coordination, direction, and priority setting for agency-wide emergency management activities. Its efforts to adapt and refine automated systems that track and ensure availability of needed personnel, equipment, and supplies will facilitate an effective and coordinated emergency response in the future.

Pillar 3: Response and Containment—When an FAD is detected in the United States, NCAHEM takes immediate action to eradicate it. Responding to quickly contain the disease agent is central to the VS mission. During an FAD incident, APHIS-VS provides

leadership and coordination with field operations to contain the disease agent through the use of animal movement control, premises quarantines, biosecurity measures, vector control, depopulation, and, if warranted, vaccination.

In compliance with Federal and State guidelines, APHIS-VS implements the Incident Command System (ICS), a well-established command and control structure that serves as a management framework and provides standardized terminology, training, and qualified personnel—judged by training and experience—for emergency response. ICS is all-inclusive and allows people from various local agencies, private industry, and multiple Federal agencies to work together with a common goal and mission. In addition to coordinating incident response, NCAHEM provides guidance to all levels of government on the range of options for infection control and containment.

Pillar 4: Recovery and Continuity of Animal Agriculture Operations—After an AHE is confirmed and animal or animal-product movement control plans are developed, recovery is an ongoing priority for NCAHEM. Maintaining product movement in relatively unaffected sectors during an emergency and restoring movement to affected sectors are critical business concerns. Proposals for implementing movement control plans are being developed in collaboration with State, Federal, and industry partners.

In 2007, NCAHEM met with several industry groups to gather information and input to advance response efforts and improve existing processes on a commodity-by-commodity basis. The resulting response plans will consider the products or circumstances of each industry. For example, APHIS began working with egg producers after the exotic Newcastle disease (END) outbreak to develop movement protocols for eggs and egg products in the event of an avian influenza (AI) outbreak.

2007 Emergency Management Activities and Accomplishments

Disease outbreaks throughout the past several years have demonstrated the critical need for surge capacity personnel during an AHE. In 2000, APHIS created the National Animal Health Emergency Response Corps (NAHERC) to provide a volunteer reserve of veterinary professionals to assist Federal or State responders during an AHE. In 2001, 145 NAHERC responders deployed to the foot-and-mouth disease (FMD) outbreak in the United Kingdom. In 2003, 340 NAHERC personnel assisted in the END outbreak in California, and 71 NAHERC personnel responded to a Virginia low pathogenic avian influenza (LPAI) outbreak.

Recent improvements to this growing initiative include a simplified application process through USAJobs, an Internet Web site. NCAHEM's new program coordinator and an outreach contractor further promoted NAHERC, building strategic alliances with State response teams and veterinary schools.

National Veterinary Stockpile

In February 2004, President George W. Bush issued Homeland Security Presidential Directive–9 (HSPD–9), which established the NVS. HSPD–9 reflects concerns that terrorists could simultaneously, and in multiple locations, release catastrophic animal diseases. The mission of the NVS is to deliver critical veterinary supplies nationwide within 24 hours.

In 2007, NVS staff finished projects designed to expand capacity and decrease response time. These projects included completing contracts with vendors to provide qualified personnel, equipment, and supplies when existing resources are insufficient. The NVS added the following:

- Emergency air and ground transportation to ensure deployment within 24 hours; and,
 - Portable vaccine storage containers for field use.
- In April 2007, the NVS issued its first operational guide to help Federal, State, and local officials plan for NVS products and services. An exercise support package was developed to help States test their plans. In October 2007, the first full-scale physical exercise was held in Iowa.

Avian Influenza Preparedness

The outbreaks of highly pathogenic avian influenza (HPAI) subtype H5N1 in Asia, Europe, and Africa have increased attention on AI surveillance in the United States. Because of heightened animal- and public-health concerns, the poultry industry and State and Federal animal-health regulatory agencies are continuing efforts to increase biosecurity measures and conduct extensive surveillance for HPAI as well as H5/H7 LPAI in commercial poultry, live-bird markets, and poultry raised in nonconfinement operations.

For many years, APHIS has partnered with other Federal agencies, as well as States and the commercial poultry industry, to conduct surveillance efforts for notifiable avian influenza (NAI). By World Organization for Animal Health (OIE) definition, all H5/H7 subtypes and all HPAI strains are NAI. APHIS implemented strategies to strengthen existing NAI surveillance where necessary in 2006 and continued the enhanced surveillance efforts in 2007. (See Chapter 2 for more information on AI surveillance.)

In addition, in partnership with the U.S. Department of the Interior's (DOI) U.S. Geological Survey (USGS) and U.S. Fish and Wildlife Service (FWS), APHIS-Wildlife Services monitors wild birds for AI. Bird banding data are used in conjunction with U.S. Census of Agriculture data, compiled by USDA's National Agricultural Statistics Service (NASS), to rank counties with a high prevalence of domestic poultry production and relatively high numbers of migrant waterfowl. This allows APHIS to identify

areas of critical concern and to determine where there are concentrations of migratory waterfowl located near commercial poultry operations.

In 2007, APHIS' NCAHEM increased its AI preparedness by refining response plans and strengthening existing core programs. The APHIS National HPAI Response Plan was a key accomplishment. The new guidelines include an updated definition of HPAI, clarified payment-for-damages information, and guidance on the use of foam to safely depopulate affected animals. The National HPAI Response Plan is available on the APHIS Internet Web site, http://www.aphis.usda.gov/newsroom/hot_issues/avian_influenza/avian_influenza.shtml.

APHIS' AI efforts are organized to meet the preparedness, surveillance, and response goals specified in the National Strategy for Pandemic Influenza document published by the U.S. Homeland Security Council. APHIS has streamlined its domestic activities into three functional areas: domestic bird surveillance and diagnostics, wild bird surveillance, and preparedness. NCAHEM improved its continuity of business, mitigation, and recovery planning efforts for the poultry industry to ensure an integrated, synchronized emergency response in the event of an HPAI incident or outbreak.

Through the Joint Modeling Operations Center, funded by USDA and DHS, NCAHEM helps develop epidemiologic and economic models to study the potential impact of FAD outbreaks in U.S. livestock. Additional preparedness activities are designed to help AHE responders sharpen their skills and test their readiness for an HPAI outbreak.

In 2007, NCAHEM and regional VS staff provided logistical, operational, planning, financial, and administrative assistance to seven LPAI incidents in six States. NCAHEM demonstrated the ability to deploy PPE and disinfectants from the NVS within 24 hours. NCAHEM also deployed contractors to conduct depopulation, decontamination, and disposal functions to two of the incidents.

National Animal Identification System

From its inception, the National Animal Identification System (NAIS) has been a State-Federal-industry partnership that has evolved to meet producer needs. That partnership continued to grow in 2007. The goals of this voluntary, nationwide system are to limit the spread of animal diseases, minimize animal losses and economic impact, and protect producers' livelihoods.

NAIS has three components: premises registration, animal identification, and animal tracing. Through NAIS, APHIS' ultimate, long-term goal is to be able to retrieve traceback data within 48 hours of detection of an FAD or domestic animal disease of concern.

NAIS provides the opportunity for producers that are not part of the disease program to voluntarily participate in national animal health safeguarding efforts.



Premises Registration

Registering premises, or locations where livestock are housed or kept, provides animal health officials with the key information needed to conduct disease investigations quickly and efficiently. At the close of 2007, more than 439,000 premises in U.S. States, Tribes, and territories had been registered. This total represents more than 31 percent of the estimated number of premises nationwide.

In addition, by the end of 2007, 12 States had registered more than 50 percent of their estimated number of premises: Idaho, Indiana, Massachusetts, Michigan, Nebraska, Nevada, New York, North Dakota, Pennsylvania, Utah, West Virginia, and Wisconsin. Other States have made substantial progress in numbers of premises registered. They include Alabama, California, Georgia, Illinois, Iowa, Kentucky, Missouri, North Carolina, Ohio, Oklahoma, South Carolina, Tennessee, and Texas.

Animal Identification

Additional NAIS-compliant identification devices were approved in 2007, including the first injectable transponder for use in horses, llamas, and alpacas. There are now eight approved devices from five manufacturers. USDA has purchased 1.5 million NAIS-compliant tags for use in State/Federal animal disease program work.

Animal Tracing

In 2007, the animal tracing component moved from development to the operational stage. Two animal tracking databases were approved and became operational, while several others were in the review process.

Education and Outreach

Working with partners on outreach was key to NAIS success in 2007. Cooperative agreements to promote premises registration and animal identification were signed between NAIS and a number of influential agriculture groups. In addition, NAIS staff held meetings with underrepresented groups and began expanding outreach in those communities.

NAIS representatives also encourage outreach and communication through participation in a number of important industry meetings and trade shows.

For its State, Tribal, and industry partners, the NAIS program implemented some new tools, including monthly conference calls, a Web-based collaboration site, and training resources.

Business Plan

In December 2007, NAIS released “A Business Plan to Advance Animal Disease Traceability.” The plan identifies seven key strategies for achieving a comprehensive traceability infrastructure:

Strategy 1: Prioritize NAIS Implementation by Species/Sectors—The establishment of priorities among species—and sectors within species—will ensure that resources are applied based on the need for traceability. Priority species include the primary commercial food animals: cattle, poultry (chickens and turkeys), swine, sheep, and goats. Sectors within each species have also been prioritized; for example, the beef and dairy sectors are the highest priorities within the cattle species. Additionally, horses that require either a Certificate of Veterinary Inspection or a test for equine infectious anemia are also included as a priority. Because of their frequent movements and potential for commingling, horses present an increased risk of disease transfer.

Strategy 2: Harmonize Animal Identification Programs—The need for unique animal identification in government and industry programs is widely recognized. As a result, producers are seeking improved and flexible identification methods and compatible processes. The harmonization of existing animal identification systems will result in more cost-effective options, benefiting producers while improving animal traceability.

Strategy 3: Standardize Data Elements of Disease Programs to Ensure Compatibility—USDA will standardize data elements in existing disease programs, including international and interstate commerce regulations. This improvement will greatly enhance animal disease tracing and



the development of each State's disease traceability infrastructure.

Strategy 6: Collaborate with Industry—USDA has entered into cooperative agreements with nonprofit industry organizations to promote premises registration within various species groups. Collaboration with USDA-accredited veterinarians will increase the delivery of accurate information from veterinarians to clients and encourage the adoption of NAIS at the producer level. Additional partnership efforts with industry alliances, service providers, auction markets, feedlots, harvesting facilities, and other industry sectors are a priority.

emergency response capabilities. A consistent data format will help identify premises that import and export livestock, locations that participate in official disease control programs, and origin and destination premises listed on interstate Certificates of Veterinary Inspection.

Strategy 4: Integrate Automated Data-Capture Technology with Existing Disease Programs—By using NAIS-compliant identification devices that support automated data-capture technology and handheld computers/readers to replace paper-based forms, animal health officials will be able to electronically record and submit essential data to the appropriate animal health databases. The electronic collection of data will increase volume and quality of data, minimize data errors, and speed data entry into a searchable database.

Strategy 5: Partner with States, Tribes, and Territories—State, Tribal, and territorial animal health authorities play a critical role in advancing national animal disease traceability. Working closely with these officials, USDA will continue to facilitate

Strategy 7: Advance Identification

Technologies—Continued advancements in traceability require practical, affordable technology solutions that improve the efficiency and accuracy of animal identification data collection. USDA will focus its efforts on establishing performance standards for identification devices and evaluating emerging technologies.

User Guide

In December 2007, USDA released the official version of the "NAIS User Guide." The user guide provides producers with up-to-date information on how NAIS works, how they can put it to use, and why participation benefits them and their animals.

The National Aquatic Animal Health Plan

The Joint Subcommittee on Aquaculture (JSA) is a Federal interagency group that convenes under the auspices of the Office of Science and Technology Policy of the Executive Office of the President (OSTP). The Secretary of Agriculture chairs the JSA, which serves to coordinate all Federal aquaculture-related activities.

In 2002, in response to requests by various aquaculture stakeholders, the JSA commissioned a new task force, the National Aquatic Animal Health Task Force on Aquaculture, to develop a National Aquatic Animal Health Plan (NAAHP).

The primary goals of the NAAHP are to

- Enhance the protection of U.S. wild and cultured aquatic animal resources from foreign aquatic pests, diseases, and their causative agents;
- Facilitate the safe and legal movement of aquatic animals and their products in interstate and international commerce; and,
- Ensure the availability of diagnostic and certification services equivalent to those provided to other sectors of agriculture.

From January 2003 through November 2006, 12 workshops were held to gather information for the NAAHP. Topics included aquatic diseases of concern; health issues for the salmonid industry, baitfish, ornamental and tropical fish, warm-water food fish, and cool-water food fish; diagnostic and laboratory issues related to aquatic animal health; technology and research needs in aquatic animal health; and, educational needs in aquatic animal health.

A key element of the recently completed first draft of the NAAHP is the chapter cataloging those aquatic animal pathogens that should be considered for reporting purposes or Federal programs. The list of pathogens reflects OIE-listed pathogens as well as pathogens of concern in the United States. Additionally, the NAAHP includes discussions on surveillance, education, research, and eventual implementation.

The NAAHP is not a regulation, but rather a framework for activities and programs needed to achieve a comprehensive approach to aquatic animal health in the United States. Implementation of the NAAHP by the various Federal agencies will require resources and continued input from aquaculture stakeholders. A key to implementation is establishing an advisory group to help Federal agencies prioritize aquatic animal health programs based on available resources. The advisory group will also ensure that the NAAHP continues to be relevant and responsive to stakeholders.

The NAAHP is a living document and will require periodic updating. Additionally, the task force must be flexible to implement needed programs as they arise, including programs for infectious salmon anemia, (ISA) spring viremia of carp, and viral hemorrhagic septicemia (VHS).

Comprehensive and Integrated National Animal Health Surveillance System

The National Animal Health Surveillance System (NAHSS) is a APHIS–VS initiative to (1) integrate existing animal health monitoring programs and surveillance activities into a national, comprehensive, and coordinated system and (2) develop new surveillance systems, methodology, and approaches. The system is an interdisciplinary network of partners working together to protect animal health and promote free trade through surveillance, control, and prevention of foreign, emerging, and endemic diseases.

The NAHSS strategic plan identifies four goals:

- Early detection and global risk surveillance for FADs;
- Early detection and global risk surveillance for emerging animal diseases;
- Enhanced surveillance for current program diseases; and,

- Monitoring and surveillance for diseases with a major impact on production and marketing. Chapters 2, 3, and 4 in this report provide information on specific activities and events in each of those areas.

In 2007, one specific focus of the NAHSS has been advancing comprehensive and integrated surveillance systems that cross species and diseases, rather than focusing on individual diseases. Building surveillance systems requires the coordination and standardization of methods, establishment of priorities, and implementation of objective-based surveillance plans. A central body, the National Surveillance Unit (NSU), encourages adherence to surveillance and data standards and recognition of opportunities for integration in the development and implementation of surveillance plans.

Each new national surveillance system is developed by modifying existing surveillance activities and infrastructure, where possible, and designing new components to address gaps and weaknesses that are identified. As disparate surveillance components are fused into national systems, areas of integration are identified to improve efficiency while continuing to provide accurate and scientifically defensible surveillance information. It is also important to understand the potential value that particular surveillance strategies could contribute to the overall national system. Measuring this value requires standardized, systematic methods and metrics.

APHIS has evaluated scrapie and brucellosis program surveillance and developed surveillance plans for bovine spongiform encephalopathy (BSE), VHS, and classical swine fever (CSF). In addition, APHIS has analyzed U.S. and Canadian BSE data to support the resumption of beef trade with Canada, leading to the development of the Minimal-Risk Regions Rule. As the NAHSS has developed, it has produced important surveillance information, including

- An online inventory of U.S. animal disease surveillance;
- BSE and AI surveillance summaries for the Secretary of Agriculture and APHIS managers;
- Ongoing reports to assist disease program management;

- Web site delivery of equine arboviral, vesicular stomatitis, and equine infectious anemia data; and,
- Reporting of OIE-listed diseases to trading partners through the National Animal Health Reporting System.

Enhancing the efficiency of surveillance has provided equivalent surveillance information at a lower cost per sample. For example, targeted sampling, applied to BSE and CSF surveillance, has generated analytic information that, if collected by traditional nontargeted sampling schemes, would require as many as 10 times more samples and an equivalent increase in cost. Fifty-two States and territories met the level of surveillance activity required by the cattle and swine surveillance programs. Samples were collected to test for these diseases on the farm, at livestock auction markets, and at slaughtering establishments.

Several foundational components support the NAHSS and its advancement toward a comprehensive and integrated system. These include stakeholder partnerships at multiple levels: producers; industry representatives; diagnostic laboratories; slaughter plants; wildlife biologists; State and Federal animal health officials; private veterinarians; surveillance system developers, including information technology professionals, epidemiologists, and program managers; and, stakeholders involved in implementation, decisionmaking, and policy formation.

Another foundational element of the NAHSS is the National Animal Health Laboratory Network (NAHLN), which combines Federal laboratory capacity with the facilities, professional expertise, and support of public, State, and university animal health laboratories. For more on NAHLN, see Chapter 5.

The NAHSS makes U.S. animal disease surveillance more effective and efficient. This, in turn, provides the Nation's livestock, poultry, aquaculture, and wildlife populations with greater protection from endemic, emerging, and foreign diseases.

