APHIS Factsheet

Veterinary Services

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The Significance of Surveillance to Safeguarding American Animal Health

As part of the U.S. Department of Agriculture's (USDA) efforts to safeguard U.S. animal health, the Animal and Plant Health Inspection Service (APHIS) is constantly on guard and looking for signs of foreign and emerging animal diseases. In fact, APHIS considers surveillance to be the foundation for its Veterinary Services' (VS) program activities including: domestic disease control and eradication programs, emergency preparedness and response, and trade.

VS recognizes and demonstrates through its activities that a comprehensive, coordinated, integrated surveillance system is the cornerstone of animal health, public health, food safety, and environmental health. The vast array of detection and surveillance tools and programs developed and implemented by VS and its partners are moving steadily towards an integrated and flexible surveillance system.

But what does surveillance really mean? And what makes both monitoring and surveillance so important to safeguarding American agriculture?

Monitoring is the routine collection of information for a disease condition, characteristic, or state in an animal population. The purpose of collecting this information is to detect changes in the epidemiologic parameters affecting the population. Surveillance then involves the analysis of those collected data so that APHIS officials can plan and take the proper actions to ensure the safety of America's animal health.

The Role of Surveillance

By conducting routine monitoring and surveillance, APHIS is able to safeguard and improve the health, quality, and marketability of U.S. livestock and poultry—as well as their products—and veterinary biologics in the national and international marketplace.

Basically, monitoring and surveillance enables APHIS to accomplish the following:

- detect outbreaks of an infectious or foreign animal disease
- estimate the size of disease problems
- characterize changes in disease trends
- evaluate preventive programs
- assist with animal health program planning
- improve knowledge of animal health among health professionals, industry representatives, and producers
- identify animal health research needs,
- promote safe international trade of live animals, germplasm, and animal products, and
- provide scientifically sound evidence of regional prevalence for trade–significant diseases.

Current Animal Health Surveillance Programs

VS conducts surveillance programs for brucellosis, pseudorabies, classical swine fever, trichinosis, tuberculosis, bovine spongiform encephalopathy, Johne's disease, bluetongue, scrapie, chronic wasting disease, equine infectious anemia, equine viral arteritis, contagious equine metritis, equine encephalitis, low pathogenic avian influenza, salmonellosis, infectious salmonid anemia, and foreign animal diseases.

VS collaborates with other APHIS programs such as Plant Protection and Quarantine and Wildlife Services, as well as other State and Federal agencies, to conduct surveillance and enhance surveillance activities. Furthermore, VS' Centers for Epidemiology and Animal Health help VS to track emerging issues in the global arena, monitor current disease outbreaks both in the United States and abroad, and analyze the data that are collected to identify important animal disease trends.

Foreign Animal Disease Surveillance and Response

In addition to surveillance for eradication–program diseases, VS conducts foreign animal disease (FAD) surveillance to rapidly detect the introduction of exotic or foreign animal diseases that can affect U.S. livestock, poultry, and aquaculture and prevent the rapid spread of disease.

Throughout the United States, APHIS has foreign animal disease diagnosticians (FADD) who are available within a 4–hour drive of any continental

U.S. location. The FADDs are specially trained to recognize, test, and diagnose FADs. Once an investigation is initiated, a FADD is in contact with someone on the affected premises immediately. Tissue samples are sent to the U.S. Department of Homeland Security's (DHS) Plum Island Animal Disease Center located off Long Island, NY, or to the National Veterinary Services Laboratories in Ames, IA, to rule out the presence of a FAD. USDA then announces the results of the tests as soon as they are available.

The total number of FAD investigations in the United States has increased steadily over the past few years. This reflects an increased awareness and alertness on the part of producers and livestock owners. Should a FAD be introduced into U.S. livestock or poultry, it could be controlled more readily if detected rapidly.

In FY 2002, VS' FADDs conducted 837 investigations, an increase from 801 in FY 2001. The most common type of investigation was for encephalitic conditions, such as Venezuelan equine encephalitis, followed closely by vesicular conditions like foot–and–mouth disease, and then excessive deaths.

VS' monitoring and surveillance programs also enable APHIS to identify new and emerging diseases or disease conditions both internationally and in the United States. VS' Center for Epidemiology and Animal Health partners with the Office International des Epizooties (OIE), the international animal health standard setting organization, and its member countries, to improve international disease surveillance capabilities and analytic methods supporting trade decisions. Thus, surveillance enables VS to safeguard the health status of imported animals and animal products to prevent the introduction of FADs.

In the event of an agri–terror attack on our homeland, and APHIS would work as partners to safeguard America's food and agricultural resources. DHS would lead the team of first responders to contain and manage the threat while APHIS would provide crucial scientific and diagnostic expertise. This expertise would be critical in managing a potential disease outbreak as well as in assisting DHS in its investigative and intelligence–gathering efforts to find those responsible for the terrorist attack. Today's world presents new threats to U.S. agriculture. This partnership creates a stronger line of defense to protect our Nation's agricultural resources.

How APHIS Conducts Surveillance

The primary method through which APHIS conducts surveillance to ensure the safety of America's food supply is testing for animal pathogens. APHIS conducts testing of animals and animal products from countries at risk for diseases to ensure that these products do not introduce disease into American agriculture. In addition, APHIS, in partnership with State animal health agencies, conducts surveillance of U.S. animals and animal products to ensure that a disease has not been introduced and cannot spread to other U.S. animal populations. Surveillance includes:

- pre–entry and post–entry animal testing and monitoring of animals imported into the United States
- field testing of animals prior to movement from the farm either for export or sale
- sample collection at slaughter facilities to detect disease or to confirm the absence of diseases in carcasses
- routine testing in States classified as free of diseases for which APHIS has eradication programs. States must maintain a level of surveillance that is documented and reviewed prior to renewal of free status.

Continued Enhancement of Animal Health Surveillance

Animal health surveillance systems are being faced with significant new demands constantly. It is important, therefore, for surveillance systems to be flexible and dynamic. APHIS must be able to detect foreign and emerging animal diseases, monitor disease trends and threats in the United States and abroad, detect and estimate risk, evaluate control programs, and provide adequate animal health information to various audiences.

To meet these goals, APHIS is moving toward a national surveillance system. This comprehensive, integrated, and coordinated system will detect animal–health–related events and trends for use by all stakeholders involved in public, animal, and environmental health.

As a part of this move toward an integrated national surveillance system, APHIS recently has appointed a national surveillance system coordinator. The role of the coordinator is to enhance and integrate national animal health surveillance and to implement the enhancements recommended in the National Association of State Departments of Agriculture Animal Health Safeguarding Review. In addition, the coordinator facilitates effective interaction between APHIS staffs and programs, other Federal agencies, and stakeholders with a role in surveillance.

The Importance of a Strong Laboratory Network to the National Surveillance System

Diagnostic capability is an essential element of the national surveillance system. VS' National Veterinary Services Laboratories (NVSL) are the only Federal laboratories dedicated to the testing of diagnostic specimens for domestic and foreign animal

diseases. NVSL also is recognized as an international reference facility by the OIE. NVSL provides assistance to State and other Federal agencies and laboratories, educational institutions, and foreign governments in the diagnosis of animal diseases through training and reagents and conducts developmental projects for rapidly advancing technologies.

NVSL has taken the lead in the development of a National Animal Health Laboratory Network (NAHLN) that addresses diagnostic needs for routine animal disease surveillance as well as diagnostic capacity for investigations and control and eradication programs.

Under the NAHLN concept, State laboratories could provide a significant surge capacity during a disease outbreak. State laboratories could assist in defining herds for depopulation, delimiting the extent of the outbreak, and conducting follow–up surveillance to determine "free status."

The network, currently in a pilot phase, is modeled after the comprehensive response network in place for public health threats. Among the elements of the planned NAHLN system are: the development of standardized, rapid diagnostic techniques that can be used at the State, regional, and national level; modern equipment and experienced personnel trained in the detection of emergent, foreign, and bioterrorist agents; national training, proficiency testing, and quality assurance; and upgraded facilities meeting biocontainment requirements.

Additional Information

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