THE CHALLENGE

Good data are critical to effectively understand, manage, treat, and control infectious diseases and enhance animal, human, and environmental health; however, accurate and meaningful data are often difficult to obtain and can be overwhelming to process and analyze.

THE SOLUTION

To help address this challenge, the Institute for Infectious Animal Diseases (IIAD) has developed AgConnect™, a suite of customizable software products designed to enhance real-time situational awareness and support decision-making for emerging, zoonotic, and/or transboundary animal diseases.

This technology integrates authoritative information from disparate sources into a single, easy-to-use integrated display. It empowers real-time collection, access, distribution, and analysis of biosurveillance, veterinary diagnostic, animal movement, and other pertinent data (e.g., clinical observations, production information, genetics, and environmental/climate data). These data are integrated into a used-defined operational picture that allows users to make decisions based on common information that can be shared across echelons, organizations, locations, and roles/positions.

The end result is a sophisticated system that serves as a central point for multiple groups to collaborate and leverage their collective resources to monitor animal health status and disease events. AgConnect™ enhances situational awareness and decision support, facilitating efficient risk analysis and effective program design for disease intervention and control strategies. Ultimately, this tool allows for more effective resource allocation and interventions in the event of a disease outbreak.

AGCONNECT COMPONENTS:

Enhanced Passive Surveillance (EPS)
The EPS system is the biosurveillance perspective of the AgConnect™ suite of tools and has broad applications in the global health community, especially for monitoring and understanding movement of and relationships between transboundary, emerging, and zoonotic diseases. This system has been developed in collaboration with the U.S. Department of Homeland Security (DHS) and the U.S. Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS), as well as industry representatives and state animal health officials (SAHOs) to capture field information about livestock and poultry health status through a mobile tablet and smartphone interface. Info is aggregated with data from veterinary diagnostic labs, wildlife, livestock markets, slaughterhouses and environmental sources into an easy-to-use computer display for monitoring and analysis. By improving data collection capabilities and integrating information from multiple disparate sources, EPS provides a more comprehensive view of animal health over space and time to aid in early disease detection or monitor changes in animal health status.
Laboratory Capacity Estimation Model (LCEM)

LCEM was developed to support the USDA National Animal Health Laboratory Network (NAHLN) as a web-based tool to help increase the nation’s capability to prepare for, and respond to, a high-consequence emerging and/or zoonotic disease. This software system allows for the automated determination of diagnostic testing capacity estimates, supply and equipment usage, personnel requirements, associated costs, and any process limitations for individual and overall NAHLN laboratories and facilitates communication between laboratories and the NAHLN coordinator. All NAHLN laboratories currently have access to the system, and over 200 users at more than 60 facilities have entered data since June 2012. LCEM has been linked to the NAHLN Portal for easier data definition.

Bio-surveillance Field Entry System (BFES)

BFES is the mobile collection interface for field information brought into the EPS system. The smartphone and/or tablet interface allows veterinarians and inspectors to enter clinical animal health data from livestock and poultry premises, feedlots and markets, linking this data feed to the EPS analyst workstation for aggregation in real-time through the use of visual, geospatial and temporal analysis tools. The application also provides valuable information back to practitioners regarding other syndromic reports in their region, providing access to a unique information source to aid in animal diagnosis and treatment.

Emergency Response Support System (ERSS)

ERSS has been developed in collaboration with USDA's APHIS and SAHOs as a web-based tool for supporting large- and small-scale incident management. ERSS provides enhanced response capabilities by organizing relevant data from authoritative sources to facilitate rapid information sharing between industry and government during an animal disease event. ERSS has been included as part of the USDA APHIS Information Management Roadmap, making it a pivotal tool for the day-to-day operations and incident response performed by APHIS. The technology is also being piloted by multiple SAHOs and swine production systems to gain feedback on day-to-day and/or emergency use. Features to support business continuity have been developed to allow sensitive data to be distributed in a controlled manner during an emergency, and then integrated to support risk assessment, mitigation, and management. Through this approach, participating producers can establish freedom from disease and resume business operations more quickly by establishing advance linkages to key data.