

USAHA/AAVLD COMMITTEE ON ANIMAL HEALTH SURVEILLANCE AND INFORMATION SYSTEMS

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The Committee met on October 9, 2020 virtually, from 2:30 to 4:30 p.m. (Eastern Standard Time) EST. There were approximately 198 individuals logged into the virtual meeting at the peak. The meeting was called to order at 2:32 pm by co-chair Maria Cooper. There were no resolutions from the previous year to discuss. The committee's mission statement was reviewed, attendees were reminded that any business would be accomplished using Robert's Rules of Order and only committee members, not guests, could cast a vote. All attendees were encouraged to participate in discussions.

Presentations and Reports

Use of Multiple Testing Modalities for Disease Surveillance in a Control Area

Marie Culhane, University of Minnesota, College of Veterinary Medicine

Early control of disease outbreaks is necessary to prevent further spread and damage. For example, early control of H5 or H7 low pathogenicity avian influenza (LPAI) is necessary to prevent possible mutations of the virus into highly pathogenic avian influenza (HPAI) virus. Therefore, pre-movement LPAIV testing to minimize chances of moving infected but undetected flocks may be desired for continuity of business during high-risk periods like fall and spring migration or when deciding the fate of populations in disease control areas. The combined use of both antigen and antibody detection tests can play a significant role during such LPAI surveillance and are applicable to

deploy as surveillance testing for any disease from which animals may recover. Proactive assessment of diagnostic test performances is necessary to standardize surveillance and testing protocols and should be included as part of any proactive risk assessments conducted. Diagnostic test results can be used to inform risk management decisions by indicating the stage of infection in the population. Evaluations of surveillance scenarios that include testing on two separate days have shown that such strategies can decrease uncertainty in the estimated within-population transmission rate and can improve the accuracy of predicted epidemiological outcomes. In studies conducted on LPAI both in the field and experimentally, performing PCR in addition to serology or AC testing on two separate days can further improve prediction accuracy. That pathogen detection can be improved when PCR is supplemented with a different type of test (serology or antigen capture) is worth exploring and may improve disease control during an outbreak, be it LPAI or another disease of consequence. Extensive evaluations of surveillance strategies have been performed to detect LPAI by combining serology and polymerase chain reaction (PCR) and have been used for estimating the time of introduction and time to stop shedding. There are many situations where multiple testing modalities can be applied to improve surveillance. For instance, HPAI infection in an upland gamebird flock can be detected via increased mortality and mortality-based triggers can be used to find HPAI. However, we have to balance early detection and false trigger rates and also determine optimum mortality triggers for HPAI suspicion in upland game bird flocks. Optimum mortality or morbidity triggers and surveillance strategies to provide a high probability of detection of any high-consequence disease must be determined to have effective, risk-based, outbreak management.

The Wildlife Health Information Sharing Partnership - Event Reporting System

Jonathan Sleeman, U.S. Geological Survey (USGS), National Wildlife Health Center

WHISPers, or the Wildlife Health Information Sharing Partnership - event reporting system is a partner-driven, web-based repository for sharing basic information about historic and ongoing wildlife mortality and/or morbidity events. The information, such as county-level locations, onset and ending dates, species affected, and diagnosis has been shared with the USGS National Wildlife Health Center over time by natural resource managers and stakeholders across the U.S. and beyond. The primary goal of the system is to provide natural resource management partners, other agencies, and the public with timely, accurate information on where wildlife disease events are occurring or have occurred for better situational awareness and decision making. The information is opportunistically collected and does not reflect all the mortality events that occur in North America.

WHISPers provides a place and a reporting structure for natural resource managers to enter event information and for anyone, including the public, to learn about verified (laboratory diagnosed) wildlife disease events. The records in WHISPers can be searched by species, disease, location (to county level), and event starting and ending dates.

Historically, information provided by partner agencies was summarized and managed by staff at the USGS National Wildlife Health Center. In response to partner needs for more timely understanding of wildlife disease occurrence, the refactored WHISPers will allow authenticated partners to directly enter event information for real-time display. They can also share information with colleagues within and across agencies for better communication and event response coordination.

The second phase of refactoring WHISPers is nearing completion, with several new features released. Key among these is the ability for registered system users to receive nightly email notifications for mortality events meeting user-specified criteria (e.g., species, disease, location, etc.). Collaboration features in WHISPers have also been enhanced whereby natural resource management agencies can invite other wildlife health professionals to collaborate on disease events in a secure environment. WHISPers was designed as a wildlife health collaboration platform where agency wildlife and disease managers can enter and track information regarding wildlife mortality and morbidity events in their jurisdictions, provide situational awareness to partner entities, help inform the biosecurity community with early detection/documentation of disease events, and request diagnostic and technical services from the USGS National Wildlife Health Center (NWHC). An example of WHISPers' situational awareness utility is tracking the ongoing rabbit hemorrhagic disease (RHDV, RHDV2) outbreak in the southwestern U.S. We are working closely with the Iowa Department of Natural Resources, the Kansas Department of Wildlife, Parks and Tourism, and the Florida Fish and Wildlife Conservation Commission on a WHISPers pilot. This effort, funded by the 2020 Multistate Conservation Grant Program, is allowing these agency partners to actively enter information about current and historic mortality events into WHISPers, and provide valuable feedback on system usability. In addition, the Science Gateways Community Institute (SGCI) recently completed a "user experience review" of the WHISPers interface. We are continuing work with SGCI to implement many of the suggestions resulting both from this review and from feedback provided by state and federal beta testers.

Finally, we continue to conduct WHISPers demonstrations for interested agencies and optimize WHISPers data structures to best meet their needs. To date, we are actively working to enroll users with the Southeastern Cooperative Wildlife Disease Study (SCWDS), the National Park Service, U.S. Fish and Wildlife Service, state agencies in the Midwest Association of Fish and Wildlife Agencies, and states currently impacted by RHDV2. To learn more about WHISPers and how to join please visit <https://whispers.usgs.gov/>. For more information contact WHISPers@usgs.gov.

Phased implementation of Standardized Veterinary Nomenclature Across Laboratories

Craig Carter, University of Kentucky, Veterinary Diagnostic Laboratory

It is no surprise that testing data generated by 60 American Association of Veterinary Laboratory Diagnosticians (AAVLD) accredited laboratories is of very high quality and quantity. Unfortunately, this data rarely used for

anything beyond confirming diagnoses for a single animal or a group of animals. Most accredited laboratories utilize a computer-based Laboratory Information Management System (LIMS) to capture accession, testing data and diagnoses to create an integrated case report for their clients. However, almost none of these laboratories adhere to a recognized veterinary terminology standard such as Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) or Logical Observation Identifiers Names and Codes (LOINC) to capture these data elements (diagnoses, etiologies, specimens). Because of this limitation, electronic summarization of multiple diagnostic laboratory data streams from more than one state or region is extremely difficult. The retrospective studies have been accomplished utilizing veterinary diagnostic laboratory data have been accomplished only through tedious manual manipulation and normalization of data sets collected from many laboratories, often taking 1-2 years. Therefore, National Animal Health Laboratory Network (NAHLN) LIMS data is currently unusable in its current form for conducting regional and national animal health studies that could lead to the discovery of new animal health knowledge leading to peer-reviewed scientific publications. Further, the data is also unusable in its raw state for alerting, disease monitoring and mapping systems and other near-real-time thematic products. I hereby propose that AAALD Accreditation Requirements be strengthened to require that accredited laboratories utilize a standardized veterinary terminology system to capture and share their data. This new requirement, which could be implemented over a number of years, would enable straight-forward summarization and analysis of high-quality diagnostic laboratory findings that would open many opportunities to advance animal and public health.

National List of Reportable Animal Diseases (NLRAD) and National Animal Health Reporting System (NAHRS) Updates

Mary Donahue, NLRAD

The development of the National List of Reportable Animal Diseases (NLRAD) began with initiatives and resolutions from USAHA and the National Assembly of State Animal Health Officials (NASAHO). Currently, State animal health officials voluntarily report in the National Animal Health Reporting System (NAHRS) monthly. During 2019, 23 States submitted all 12 monthly reports, 44 States submitted at least one report, and 503 reports were submitted in total. In April 2020, USDA, Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS) published the NLRAD proposed rule to the Federal Register for public comment. The comment period closed August 21, 2020, and the Center for Epidemiology and Animal Health (CEAH) is addressing the comments received. The intent of NLRAD is to harmonize and unify reportable diseases in animals to achieve accurate and timely disease reporting collaboratively within the U.S. and for reporting to the World Organization of Animal Health (OIE). NLRAD is structured with two main categories of reportable diseases: "Notifiable" and "Monitored."

"Notifiable" diseases require immediate reporting and "Monitored" diseases would be reported monthly to NLRAD. Reporting within NLRAD will be supported with 133 case definitions available on the NLRAD webpage. The proposed rule expands reporting responsibilities for "Notifiable" diseases

beyond State animal health officials to all animal health professionals. Collaboration between animal health professionals, State animal health officials and Federal animal health officials will improve data reporting to help streamline animal disease detection and the safeguarding of animal health. USDA-APHIS-VS is actively working to progress the proposed rule to the next steps in the federal rulemaking process.

Swine Hemorrhagic Fevers Surveillance – First Year Evaluation

Kevin Spiegel, USDA

VS conducted an evaluation of the effectiveness of USDA's swine hemorrhagic fevers: African swine fever (ASF) and classical swine fever (CSF) integrated surveillance system based on its ability to meet the predefined objectives at the end of its first year of implementation. In the plan, two objectives are outlined: 1) to strengthen detection capabilities and enhance outbreak preparedness, and 2) to support claims of disease freedom from ASF and CSF.

Three primary populations were targeted for surveillance: larger commercial swine, higher risk swine and feral swine. These populations were targeted through the implementation of five surveillance system components: sick pig veterinary diagnostic laboratory submissions (VDL), slaughter and aggregation point sampling, higher risk sampling, feral swine sampling, and foreign animal disease investigations.

The evaluation found that the surveillance objectives are being met. The investments in education and implementation of new data collection and data management systems have yielded benefits. These include improved data flexibility, timeliness, acceptability, and ease of analysis. With the help of private veterinarians, farm managers, State and Federal Field Operations staff, Federal regulatory staff, and NAHLN laboratory staff, we have achieved consistent field sample collection from all targeted surveillance components and reliable diagnostic results. During the first year of implementation, 6,520 specimens were tested for both ASF and CSF and 5,013 specimens were tested for CSF only, strengthening detection capabilities and supporting claims of disease freedom.

The evaluation also identified areas for improvement. These include 1) geographic coverage in sick pig VDL sampling and slaughter and aggregation point sampling and 2) slow adoption of the new electronic data submission system. Solutions to these improvement areas are currently being explored. The evaluation also noted substantial impacts of COVID-19 on all surveillance streams, with the greatest impacts on the Slaughter and Aggregation point sampling.

We anticipate that as a result of this presentation and subsequent release of the evaluation summary, VS will be able to continue improving our active ASF/CSF Integrated Surveillance system through targeted enhancements in sampling quotas, geographic coverage of surveillance components, and data integration.

Committee Business:

A motion was made by Bruce Akey and seconded by Marianne Ash to expand the mission scope of the Animal Health Surveillance and Information

Systems (AHSIS) Subcommittee on eCVI Data Standards to investigate and develop a set of data standards for emergency movement permits that would be utilized in the case of a high-consequence disease outbreak. The motion passed unanimously.

There was no further business and the committee meeting was adjourned at 4:37 p.m.

REPORT OF THE WORKING GROUP ON DATA STANDARDS

Michael Martin, SC

Justin Smith, KS

As the subcommittee continues to evaluate and enhance the Extensible Markup Language (XML) schema, there are two issues that have been identified that require input on a policy level. The subcommittee is requesting the support of the parent committee to engage the National Assembly of State Animal Health Officials (NASAHO or NA) to provide input and guidance. The first question involves the support of the Sovereign Tribal Nations and if certificate of veterinary inspections (CVI's) using the XML schema are acceptable to the Tribal Nations for animals entering or leaving tribal lands. Additionally, the subcommittee is looking for guidance on whether the XML schema should be undated to allow for addresses within tribal nations. The second issue that we would like to refer to the NASAHO's for discussion is the matter of allowing more than one species on a CVI. The current schema does allow for multiple species due to no consensus by the NA during the version one development. The question for the NA is this still an acceptable approach.

Lastly, the eCVI Data Standards subcommittee is asking the Joint Committee on Animal Health Surveillance and Information Systems to consider the expansion of their mission scope to include the development of a data standard for emergency movement permits that would be utilized during a high consequence disease response. The subcommittee feels their past work and experience could be leveraged to facilitate this data standard in an efficient and concise manner.