

REPORT OF THE COMMITTEE ON TRANSMISSIBLE DISEASES OF SWINE

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The Committee met on 10-20-14 at the Sheraton Hotel in Kansas City, Missouri, from 1-6pm central time. There were 29 members and 48 guests present.

Presentations & Reports

Feral Swine PRV/BR Sub-committee Report

Dr. Joe Corn

University of Georgia

The Sub-committee met on 10-19-14. Dr. Dale Nolte reported on the feral swine damage management program. USDA Wildlife Services (VS) will be the lead on this project. The goal is to reduce the negative impact from feral swine. APHIS will implement strategies to reduce the impact of feral swine. USDA APHIS will seek other support for feral swine management.

Dr. Corn provided an update on the feral swine distribution maps. Information is collected from state and territory information. Data is submitted on a daily basis and data is updated on a monthly basis. This has been in action since 2008. There are currently 36 states with established populations of feral swine = evidence of breeding and or been identified in a state for at least 2 years.

An update was provided on surveillance activities for feral swine and diseases of concern. These diseases can pose both an animal health threat as well as zoonotic potential. Monitoring will have a role in the continuing CISS surveillance system. An update was provided for all surveillance activities and the role of wildlife in that surveillance activities. Motion was made to accept the report and seconded, motion passed unanimously.

USDA Swine Health Programs Update

Drs. Barbara Porter-Spalding and Ellen Kasari

USDA APHIS VS Swine Programs

A comprehensive review was given on current surveillance activities for this year. There are multiple diseases that are currently under surveillance and this includes a wide variety of sample streams for this surveillance. Surveillance is from d-labs, FSIS samples and other sources. For PRV, no cases for FY 2014. Largest streams are cull sow-boars at slaughter and then diagnostic lab samples. Swine Brucellosis (SB) will have a quarterly report for this surveillance. For FY2014, there were no herds identified with SB infections. There is focus for the upcoming year to look at how to maximize samples for testing for multiple diseases. For the current year, there is a review of the amount of samples that are

submitted for the SB/PRV to make the process more efficient. There are continuing to be some positive transition herds (PRV/SB) that are in direct contact with feral swine. Changes in surveillance will be coming and geared towards more efficient and risk-based sampling.

Surveillance for FAD's is ongoing and now includes Classical Swine Fever (CSF), African Swine Fever (ASF), and Foot and Mouth disease (FMDV). All of these diseases are working towards being utilized in NAHLN labs for initial surveillance. ASF is still on hold due to a lack of reagents currently. Once availability changes, then ASF will be added to the list for continuous surveillance, CSF is being surveyed from multiple streams both postmortem and antemortem streams. USDA has submitted to OIE a request for recognition for historical freedom of disease for CSF to the OIE, There is a pilot for ASF and FMD surveillance pilot and look at what is needed for surveillance and response to potential positive results. This is ongoing and will strengthen the NAHLN labs ability to be prepared in the event of an emergency. Pilot will take place for 12 months. The 8 labs in participation will work on messages for LIMS and additional reporting. Tests are PCR and validated samples include ASF = whole blood; FMD = oral swabs.

IAV-S surveillance is looking at the continued implementation of the new terminology vs, swine influenza. Case submissions for the anonymous submissions are ongoing. Still targeting commingling events and cases that are linked to human infection, There were only two cases associated with human infection for 2014 as compared to 19 for 2013 and 300+ for 2012. There have been adjustments to the testing algorithm for efficiency in collecting valued information. In order to get a larger percentage of isolates that can have virus isolated, the cT values have changed. These changes have been in place since July of 2013. There is continued collaboration with Ohio State University for IAV-S at fairs. There is also a working relationship with Iowa State University on the impact of vaccine and tracking this data associated with IAV-S isolates. USDA ARS will continue to have molecular analysis of isolates. A report of results from the surveillance is underway instead of the NAHLN Quarterly and will be further developed with industry on needs for reporting of results. For results, there is a 1-2 month time lag for reporting of final results but they are still being reported when finalized. See the presentation for breakdown of the % of isolates being identified. H1N1 appears to be more predominant with H3N2 a strong second predominant strain.

Enhance Passive Surveillance (EPS) overview will be looking at non-disease specific surveillance stream. VS has partnered with Dept. of Homeland Security and Institute of Infectious Animal Diseases for this project. VS has Dr. Korslund detailed as liaison with DHS. EPS will be combined with Active surveillance to show a more comprehensive surveillance picture for the US. There is sharing of information of condemnation data is a signal of abnormality is noted.

Surveillance of garbage feeders is ongoing. Most are located in Puerto Rico; 28 states permit it, 22 do not.

APHIS continued to work on feral swine control. VS is looking at disease and population monitoring for diseases. Monitoring is for PRV, SB, IAV-S and PRRS. Samples are shown as percentage positive but not for prevalence.

An update was provided for Swine Enteric Coronavirus Disease (SECD). The goal is to count the current number of infected premises, develop herd management practices and support of biosecurity management practices. See information online for specific details of the program and results. Reimbursement is ongoing for testing and confirmation of SECD. EMRS receives the data from the NAHLN labs as well as other key information such as the herd management plans and biosecurity procedures. There is also a weekly map that is shown from the SECD testing only as compared to the NAHLN accession map. The maps and information is updated on a weekly basis and provides data on the status of infections and breakdown of types of farms that are infected. In addition to the program activities, there are cooperative agreements for many different activities. The program has provided a platform to provide PIN's for animal health and will lead to future preparedness activities and plans.

A question came up about the use of premise identifiers for future testing. This would be appropriate for cull sow/boar PRV testing. The identification will be very valuable for these disease streams.

Labs and LMS system compatibility for SECD: UMN, KS are testing data for LMS. Other states are in development for the messaging. There are plans to continue to get swine labs online. Tentatively planning on ISU getting online within the next month. There is a difficulty for state animal health laboratories to report through LMS. This needs to be focused on. Access to EMRS is limited in some

states so have to account for that. The identification for each state is different and needs to be accounted for. I.e. LID vs. PIN.

Emerging Diseases Response Plan
Dr. Liz Wagstrom
National Pork Producers Council

Dr. Wagstrom discuss the 2014 NPPC Resolution that deals with Emerging Diseases. The focus is on the response plan. The Resolution was to outline an emerging disease plan and work with all partners (state, federal and industry) to outline responsibilities for each party. This requests to look at containment, response and management strategies. The goal is to have a report back by the 2015 Forum in March.

What was learned? Communications channels were not previously identified; authority was not well understood; resources weren't previously inventoried; there was no one central coordination entity. There were a lot of groups doing many things, but there was still no one entity for coordination.

The goal of the Emerging Diseases Response group was tasked to look at how we can respond better in the future. Makeup of the group is staff from respective organizations (AASV, NPB, and NPPC), producers, state veterinarians, federal vets and other individual producers. One concept was to re-evaluate the US Swine Health Board (USSHB). This idea is based off of the concept of the past PRV Control Board. There is no primary authority but would be used to help coordinate industry comments and recommendations that would be provided to USDA. The Board is more of an advisory Board to USDA, but the state or federal government would have ultimate authority for final decision making.

Role of the USSHB =

1. Suggest actions to response to known pathogens in other countries
2. Suggest actions to respond to identification of emerging diseases in the US

Membership would represent all parties that are involved within any disease response within the US = state, federal and industry partners as well as experts in particular situations.

Included in the plan is a potential list of options for response to an event. There is also a need for a defined "leader" for diseases and specific situations. The end-goal is to define actions and responsibilities and then have the outlined leaders determined to hasten the response. Dr. Wagstrom outlined a brief flow chart of proposed activities for the Board interaction with other parties for different events such as an FAD outbreak or potentially emerging disease or unknown etiology with high morbidity/mortality event.

One activity that has aided in the investigation of an emerging disease is the use of the Rapid Response Teams for epidemiologically unique situations. This concept has been valuable for the early investigation and also for standardized investigation early in the course of a disease outbreak. Funding sources for ongoing use of this Team concept needs to be better defined.

There is an additional project that looks at strengthening the borders. USDA is also look at pathways assessment. There is a current project with University of Minnesota to do the following: assess the inventory of products imported to the US; current safeguards and authorities; impact of potential changes within the FSMA and what are the current mitigations for potential contamination.

PED and the Swine Disease Matrix
Dr. Harry Snelson
American Association of Swine Veterinarians

Dr. Snelson reviewed the timeline of events for PED from 2013 from the initial sow farm outbreaks. The question comes up about stopping movement during an outbreak like this? Stop movement is a very serious issue for the industry and it can heavily impact the business and flow of animals if a response is not quickly reached. There are also significant concerns with trading partners and impact from lost trade. A stop movement order would have not made impact after the virus was identified and announced as PEDV. Retrospective testing from April 2013 showed many more cases than would have been previously identified in May. By 5-20-13, there were 74 premises with PEDV identified. The virus was already spreading very quickly. The industry has never responded to an exotic production disease. There was a review of the NAHLN lab data for current case data.

PEDV was actually NOT a surprise. There were anecdotal reports from Asia and other practitioners who visited these countries. Subsequently, there was no formal response. This led then to needing to understand what we know of and what we do not know of that could negatively impact the industry. With assistance from USDA, a list of 40+ viruses that are known to exist somewhere in the world was given to AASV. The AASC Swine Health Committee reviewed the list and prioritized the list for potential issues. A separate expert panel reviewed the list to identify viruses of concern. The expert panel agreed with the AASV Swine Health Committee prioritized list. One of the viruses that is of concern was a "hot" strain of PRV from China. There were questions regarding potential information on that virus, current research and potential mitigations for that virus in the event that it might get into the US. This discussion led to conversations with USDA APHIS for next steps of evaluation of research.

The next step is to go through the list of diseases and understand what data is needed at the initial onset of a disease outbreak. Items included diagnostic capability, pathogenesis, epidemiology of the disease, transmission, survivability, development of immunity etc. The goal is to have a person to assist in the filling out of the categories for each disease and help to identify what the current needs are for those items.

Next steps include the development of a mechanism to focus on this process and how to respond appropriately and timely to those needs. A potential literature search of key diseases, monitoring of diseases, development of one-pagers, and work with USDA/SAHO's to determine roles and outcomes.

**Swine Health and Information Center
Dr. Paul Sundberg
National Pork Board**

Dr. Sundberg reviewed the concept and potential implementation of a Swine Health and Information Center. A review of lessons learned covered items such as identification of pathway introduction is difficult; USDA alone cannot be expected to protect US herds; better state-federal-industry response coordination is essential. The likelihood of another event is high and we have to be prepared and have a better response. The focus is on non-regulatory diseases and **not** for FAD's or program diseases. If this concept passes, the funds for this project would be funded with industry monies but it would not be a Pork Board specific entity.

For the industry, NPPC is focusing on a response plan, NPB is focusing on swine disease information sharing and AASV is focusing on the development of the swine disease matrix. Filling in the matrix gaps will help us be better prepared for emerging diseases. Focus on having timely diagnostics is critical for early and effective management of diseases. Producer request in response to the PEDV outbreak was for a group to solely focus on emerging diseases and to communicate with already established groups. There would be close discussion and collaboration with the international community to make this an international effort and gain a better understanding of diseases worldwide that would potentially be risks to the US.

The proposal is in consideration with the NPB Board but not finalized. The mission is implemented is to protect and enhance the health of the US swine herd. It would be an add-on to the capabilities for AASV, NPB and NPPC. The Center would cover capabilities that are not being done within the 3 entities currently. It would be a "virtual" center. The Center would have separate oversight and have a finite lifespan to be assessed at the end of 5 years. Data streams to be evaluated include voluntary information from disease projects that are ongoing. This could include the Swine Health Monitoring Project, Production Animal Disease Risk Assessment Program (PADRAP) and Secure Pork Supply. The Center would be housed outside of the three organizations and would have different data confidentiality options and potentially afford increased data security. The efforts could be complementary to current USDA VS work. All efforts will need to be coordinate and that is the role of the Center to continue to coordinate between state-federal-industry partners.

Emerging Disease Discussion:

The Committee discussed issues with the Center and also other concerns in general with emerging diseases response and management.

Will data be shared? This will be focused on voluntary delivery of information through targeted projects and objectives.

There needs to be a focus to NOT stumble over the definition between Transboundary diseases vs. FAD's. Have this lined out ahead of time and do not allow it to hinder response efforts. Is there middle ground for movement options vs. just the "black and white" of not restrictions or stop movement? This needs to be answered before a next event.

The challenge is how to access, analyze and utilize the data that exists in the industry today and not to re-invent the wheel for other analysis and database development. Additional focus needs to be on providing funds and infrastructure that can work through cases that are not FAD's but are as yet undiagnosed.

It will be important to incorporate the NLRAD and Emerging Disease Framework into how the Center integrates and cooperates with other data sources.

A brief break was made between 3:30-3:45pm.

SECD International Meeting

Dr. Randall Levings

USDA APHIS VS

Dr. Levings provided a review of the September 24-25th, 2014 SECD meeting that was held in Chicago, IL. The objectives were to have an international meeting to learn more about SECD and to review global situation and risk pathways. The meeting had representation from 27 countries and 150 participants. There were concurrent and general sessions to cover a variety of topics. There were smaller group meetings to discuss pre-determined topics related to their area of discussion and then presented back to the general session at the end of the meeting. Information was openly shared for the status of countries and what is going on and current and future focus. The countries that have experience SECD difference in presentation: EU vs. Asian countries, US. All countries emphasized collaboration and cooperation with all entities involved. Focus on continued research needs, diagnostics and assays, and investigation into recombination events. A lot of future needs and activities were identified. There is a continued sharing of international information and see that continuing throughout the year = risk assessment, diagnostics, disease findings and virus sequences. Sharing of sequences was highlighted and looking into ways to get that completed in a timely manner. The meeting coordinated was a collaborative effort with USDA and industry partners. Contact Dr. Randall for the link to the website. Randall.L.Levings@aphis.usda.org

SECD Root Cause Investigation in the US

Dr. Aaron Scott

USDA APHIS VS

Dr. Scott provided updated information on the root cause analysis that is currently underway. The actual cause of entry to the US remains unknown. A review of the initial events post-diagnosis of PED was given as well as an overview of the resources available for the disease. But for 2014, there is still no hard answers for the mechanism of how PEDV entered into the US. The USDA Federal Order for reporting provided for additional funding for needed activities to assess the root cause and risk assessment pathways for entry to the US.

The root cause investigation overviewed information that was already available and started with the evaluation of the epidemiology of the virus and then formulated the scenarios of what could have happened with the virus. Additional collaborations were established to assess the virus and potential pathways. The SECD viruses (3-4) are new viruses to the US. There could have been more than one outbreak from April to December 2013. First cases were in grow finish hogs and then sow farms later. All were identified in commercial herds with higher biosecurity and not found in smaller, less biosecure farms. The physical properties of the virus make it adept at infecting farms and having rapid spread = survival in wide range of temps and in substrates, low amount of virus to infect the host and relatively hardy in the environment. No obvious link between the farms that broke was identified.

The virus had to fit a certain criteria to be considered. It has to fit the epidemiology information and survive 3-6 weeks on a ship or a few days for plane travel; pH around 6.5, low temp survivability, moisture to prevent desiccation. Why did it not break in CAN or EU? What was different in April – December 2013 to cause the outbreak?

A review of the supporting diagnostic tests to identify the herds during the outbreak was given. The review included assessment of PED and PDCoV. However the viruses got to the US, it is not apparently through the “usual” methods that viruses can travel. Situations that were ruled out included intentional introductions, feral swine circulation of the virus, human visitors to the US, nasal passage carriage in humans (study not yet complete), escape from diagnostic lab submissions, contamination biologicals, antibiotic filler/rice hulls etc., semen imports or live animals, birds or bats, and illegal product entry. Other products of interest but not considered a primary source include organic soybeans or corn (fertilized with manure). The question of transport on trucks came up but unlikely from international source.

Other scenarios that are of interest include pet treats that are imported. There is an FDA report that looks at general risk for these products. There have been many issues with pet treats for other species. Some treats are irradiated but it is cold pasteurization and the amount of viral reduction is limited. There is also use as salvage ingredients in swine rations but hard to fully associate or not.

Complete feed rations have been assessed and some research shows that it can happen. No one common branding that showed up as a risk but it is important to assess as the ingredients do have some association with positive cases.

Work is ongoing with this project and many different areas are under review. There is testing of archived samples from feral swine, human nasal swabs and pet treats. Feed rations and ingredients of index farms are being traced. There are no archived samples to test of straight vitamin or mineral premixes.

SECD Next Generation Dr. Brian McCluskey USDA APHIS VS

Dr. McCluskey provided an overview of the current SECD reporting and looking at what is for the future of the program. The next step is to have the conversation of the future of the mandatory reporting for SECD. A small group of people was put together to look at the next generation of the plan and what are some key questions for the next steps?

Dr. Sundberg let the group know that the PEDV Strategic Task Force will be submitting comments to Dr. McCluskey after this Friday for SECD Next Steps.

What's working in the SECD response?

- availability of cooperative agreement funds for states helped to target individual state producer needs
- use of PIN's is working to get that into the system
- the payment of PEDV samples was useful

What's not adding value in the SECD response?

- added regulatory burden for activities that were already being done
- many states already had data collection ongoing and the extra entry of data into EMRS did not add value to the industry
- reporting into EMRS is an issue as there is not reporting back to the producers/vets to see the summary data; it takes a lot of time to enter it but there is not info coming back out
- there is no information for the support of epidemiology on-farm

What tools do we need for options?

- there is some additional time needed to assess what is happening over winter 2014 and into spring of 2015
- tracking the disease and count of premises infected does add value from support of trade – helps to see what the impact is for the disease as it progresses in time

-continued timely information on genomic sequencing of strains (whole genome)

Are there other responses that can be looked at as models? Is there anything that is similar?

-PRV Control Board is a good model

-need to establish the communication points to continue to work on a plan for the future to do a better job on disease response

-potential to look at the current Johne's program or NPIP program

-the government programs need to be set up to be able to respond to the needs of industry

Would you make a recommendation for next steps and what would be the next steps in this process?

-the funding timeline and mechanisms need to be discussed in the context of continuation of the program

What do you want to do next?

-Keep the reporting part as it does have value from the trade aspect.

-Potential to remove the federal order?

See options in the presentation for SECD

Committee Business:

Resolution 1:

"Need for APHIS Risk Assessment and Rulemaking prior to Allowing Imports from Countries with African Swine Fever"

Dr. Wagstrom provided the background for the need for this resolution. The introduction of ASF would be devastating to the industry so the resolution so steps to prevent entry into the US are needed. See the resolution for actual verbiage.

A motion was made to adopt the resolution and seconded. A call for the question was made. The motion passed unanimously.

Recommendation 1:

"Development of a U.S. Swine Health Board to Address Emerging Swine Production Disease"

The background for the recommendation was made by Dr. Wagstrom.

BACKGROUND INFORMATION:

Trade and commerce of live swine, pork, pork products and variety meats represent the cornerstone of the business model for US pork producers. A healthy national swine herd and the regulatory and veterinary activities to protect that health status are important to maintaining and expanding trade and commerce. Traditionally USDA regulations and response plans have been centered on preventing and responding to the introduction of highly contagious foreign animal diseases listed by the World Animal Health Association (OIE) that affect commerce and trade.

The pork industry, and U.S. animal agriculture, will benefit from a standardized process to *identify* and *report* incidences of emerging swine production diseases (transboundary diseases not on the former OIE List A or non-program domestic diseases) for collaborative federal, state and industry analysis and decision making. In order to facilitate this process a U.S. Swine Health Board (Board) should be developed and processes implemented by the Board to provide a mechanism for shared analysis of emerging swine production diseases and development of recommendations for actions. The U.S. Swine Health Board will be a non-regulatory entity based on the Pseudorabies Control Board model. The Board will have no regulatory authority but rather serve as a facilitator of federal, state, industry analysis and recommendation development for an adaptive response. Recommendations developed by the Board will

be non-binding, but will have been arrived at through a collaborative process between regulators and industry that is expected to provide the best mix of regulatory and voluntary responses. This standardized approach will improve the speed in which state and federal regulators and the pork industry work together to address emerging swine production diseases in the U.S.

RECOMMENDATION:

The United States Animal Health Association Transmissible Diseases of Swine Committee support industry development of a U.S. Swine Health Board to facilitate federal, state, industry analysis and recommendation development for an adaptive response to emerging swine production diseases. Such a Board will have no regulatory authority and recommendations made by the Board will be non-binding.

A motion was to accept the recommendation and seconded. The recommendation passes by voice vote with one dissenting vote.

Motion made to adjourn and the meeting was adjourned.