**Report of the Committee on Transmissible Diseases of Swine**
**Chair: Harry Snelson, NC**
**Vice Chair: Lisa Becton, IA**

Bobby Acord, NC; Gary Anderson, KS; Paul Anderson, MN; Marianne Ash, IN; Karen Beck, NC; Robert Blomme, IA; Philip Bradshaw, IL; Becky Brewer-Walker, AR; Nancy Brown, KS; Tom Burkgren, IA; Robert Cobb, GA; Jim Collins, MN; Joseph Corn, GA; Thomas DeLiberto, CO; Dee Ellis, TX; Mark Engle, MO; Tony Forshey, OH; Nancy Frank, MI; Donna Gatewood, IA; Cyril Gay, MD; Michael Gilsdorf, MD; Timothy Goldsmith, MN; Larry Granger, CO; Patrick Halbur, IA; Rod Hall, OK; Steven Halstead, MI; William Hartmann, MN; Greg Hawkins, TX; Michael Herrin, OK; Richard Hesse, KS; Sam Hines, MI; Russell Iselt, TX; Regina Jensen, DE; Jeffrey Kaisand, IA; Ellen Kasari, CO; Marcus Kehrli, Jr., IA; Jennifer Koeman, IA; Charlotte Krugler, SC; Elizabeth Lautner, IA; James Leafstedt, SD; Donald Lein, NY; Tsang Long Lin, IN; Bret Marsh, IN; David Marshall, NC; Chuck Massengill, MO; Paul McGraw, WI; Gay Miller, IL; Richard Mock, NC; Jerome Nietfeld, KS; Sandra Norman, IN; Dustin Oedekoven, SD; Kris Petrini, MN; Barbara Porter-Spalding, NC; David Pyburn, IA; Susan Rollo, TX; James Roth, IA; Mo Salman, CO; Joni Scheftel, MN; David Schmitt, IA; Richard Sibbel, IA; Brad Thacker, MD; Lee Ann Thomas, MD; Beth Thompson, MN; Sarah Tomlinson, CO; Susan Trock, GA; Paul Ugstad, NC; Liz Wagstrom, DC; Patrick Webb, IA; Margaret Wild, CO; Ellen Mary Wilson, NM; Nora Wineland, MO.

The Committee met on 10-26-15 at the Rhode Island Convention Center in Providence, Rhode Island from 1pm – 6pm. There were 23 members and 39 guests present.

Chairman Snelson provided an introduction to the full Committee and covered housekeeping items for the Committee prior to the start of presentations.

**Presentations & Reports**

**Feral Swine PRV/ BR Sub-Committee Report**
Joe Corn, USDA WS

Dr. Corn provided an update on current activities with the Sub-Committee. Dr. Corn reviewed his work on the feral swine map and associated efforts. 2008 developed the National Feral Swine Mapping system that can collect data from a wide range of states and other agencies to track feral swine populations. Maps are updated on a monthly basis. The data is password protected but Dr. Corn can be contacted for the information if approved. Dr. Bigelow provided an update on USDA feral swine activities. Activities at other locations include disease surveillance in US and other locations for multiple diseases the program continues to collaborate with other researchers and scientists for disease surveillance. APHIS serves as the lead agency for dealing with feral swine. Strategy is to provide resources and strategy at a federal level to support local and state efforts. APHIS has just released the next strategy for dealing with feral swine. Through VS recommendations the surveillance will be reduced to CSF, SB and PRV. Additional training and classes will be provided for personnel dealing with feral swine. Additional work will be done assessing other damage impacts from feral swine in all environments where feral swine are active. Motion made to accept notes from subcommittee. Dr. Wagstrom first and Dr. Webb seconded. Passed unanimously with voice vote. (See notes from Dr. Corn).

**Washington State Salmonella Outbreak**
**Background and Industry perspective:**
Jennifer Koeman, National Pork Board

Dr. Koeman provided an update on the producer perspective and status of the Salmonella outbreak in Washington. The outbreak occurred in the summer of 2015. This outbreak was looking at pork products and specific to roaster pigs initiated at several private events. WA Dept of Health was the primary agency for the epidemiological investigation. USDA FSIS also took part in the investigation. The epi graph of the outbreak is available at the CDC website. As of August 27th, 152 people were affected. No deaths reported with this outbreak. The outbreak was associated with a specific strain of Salmonella 1,4,[5],12:i. Trace back findings looked at one processing location as the potential source of the outbreak. The plant was sourced from multiple locations and pigs. This is the first time the isolate was identified in WA state. FSIS did intensive sampling of the plant and pork products and found Salmonella. A

subsequent recall of potential contaminated product occurred. On-farm sampling was request from public health. There was close collaboration with pork producers, state and national associations to communication on the outbreak and needs for action. On-farm sampling raised a lot of questions for producers on concerns of such sampling. Science has shown that on-farm sampling with not have a significant public health outcome. Those concerns were relayed to the public health authorities as well as with state and federal animal health authorities. Other concerns focused around response, payment of sampling, communication of results, and potential bias for farms that may or may not be found positive for Salmonella and subsequent marketing options. Next steps, meet with CDC to review the outbreak response, identify research gaps and needs and identify communications gaps and needs. An RFP is posted for this strain of Salmonella to gain more understand this pathogen. That can be found at www.pork.org .

**SAHO/FSIS perspective:**

Marty Zaluski, Montana State Veterinarian; Joe Baker, Washington State Veterinarian; Karen Becker, USDA FSIS

Dr. Zaluski covered the State's response to the outbreak. Numerous meetings were held with many different groups to address this outbreak. The outbreak has be resolved but there were other issues identified in dealing with such an outbreak. There is a need for more animal health veterinarians within the field of public health field. Five of the six farms that supplied the plant were in Montana. There were several questions back to public health on what is the benefit to PH from sampling? What is the action/outcome of those diagnostic results on on-farm sampling? Were there deficiencies in the plant? Why is illness not seen from other plants that also received those pigs? What is the prevalence of this Salmonella strain in other production units? The risks and benefits were assessed for on-farm sampling. The investigation of a foodborne outbreak for meat/meat products is different from outbreaks associated with produce. Washington public health to request samples from Montana. The sampling was voluntary and producers elected not to participate. Still need to have more veterinarians within public health to help facilitate the issues associated with these type outbreaks.

Dr. Karen Becker provided insight for the outbreak from an FSIS perspective from the Office of Public Health Science. The Colorado district office help to assist in this outbreak investigation. The staff also assisted CDC in the outbreak investigation so this helped in collaborative efforts. The office was alerted through other surveillance channels and then did further investigation of the outbreak in Washington. FSIS is doing more exploratory surveillance of pork and pork products for Salmonella investigations. Did see outbreaks during more warm weather months, so this may be pursued for potential risks for future outbreaks. Cross-contamination was common within an outbreak. FSIS has gone back and traced some Salmonella back to a source from past 2014 outbreaks. FSIS sampled the establishment and found positive samples for the identified strain. Salmonella was also found in the pre-environmental samples (after cleaning) so this was of concern. Other sanitation issues identified at the locations where the pork products were supplied to. FSIS used a traceback visualization tool to see what was occurring with the outbreak and where potential sources were located at. A recall was done at the Establishment A due to the outbreak and subsequent issues with sanitation and positive sampling results. FSIS could not determine one source on-farm for the contamination from the sampling that was done at the pigs coming to the plant. The plant is still closed and working with FSIS to reopen. FSIS is doing raw pork product exploratory sampling since May of 2015. Testing for Salmonella, Campylobacter, STECS, Toxoplasma gondii, MRSA, Yersinia enterocolitica and indicator organisms. There is FSIS guidance for controlling Salmonella in market swine from pre-harvest through slaughter. A multi-level approach is needed to reduce the incidence of Salmonella in pork and help to prevent illness.

Dr. Baker provided an update of the outbreak. Dr. Baker did not know about the outbreak until mid-July when he was contacted by the National Pork Board, Dr. Koeman. The first case was actually identified in April of 2015. There still is a disconnect between both public and animal health and need to realize that the two are very closely interwoven. Having the FSIS data earlier and on a real-time basis would have helped to move the outbreak along. There were other requests to have a schema for on-farm sampling from industry could have been done, but it was not. The sampling could have been done, but it was not done at this point until later in the outbreak and the producers did not volunteer to do this. The data seemed to be suggesting that there was some significant issues with the plant sanitation issues and not necessarily a farm issue as shown by the epi-curve.

**Panel Discussion**

A panel of all speakers was convened to discuss the outbreak and how the response and activities occurred. There were no indications of clinical signs of illness in any of the pigs that were supplying the plant. There could be benefits on on-farm sampling if it was from some type of illness and intervention. There could be value to show the value of interventions. The issue of potential contamination of the transport vehicle could also be a part of the transmission and risk of the spread of the Salmonella isolate. Sampling at the plant can be dependent upon the length of time in lairage or in transit for when pigs can become infected by other pigs. There is merit in studying this organism aside from the outbreak to better understand transmission and risk factors for survivability and transmission potential. The issue of sampling was that there was the request to sample on-farm without a clear indication of what to do with those results. Another area of concern was the reuse of water and potential contamination. Are there unique characteristics of the strain that make it more resistant to temperatures used for sanitation and disinfection? This should be assessed. Dr. Tauxe did state that there were actually two different isolates that cycled through the outbreak and did change from the time within the outbreak. This could also point to the potential breakdown of the sanitation process at the plant to allow the isolate to get through those processes.

Having a One-Health approach to this issue instead of having something threatened to happen, this process would have gone a lot smoother to get on-farm sampling completed. A joint approach is needed with all folks at the table to address each issue.

**USDA Swine Health Programs Update**

Troy Bigelow, USDA APHIS VS

Dr. Bigelow provided an update for swine activities. A review of the ASF and FMDV surveillance pilot project was given. This encompassed communications, awareness of signs, what diagnostic samples to submit etc. The pilot was a 12-month pilot. ASF was for whole blood and FMDV was oral swabs. FADDL was looking at additional samples (from universities) to assess validity of alternative sample types. Data is being analyzed for the pilot project and initial indication shows that the pilot did identify some issues like data management, field submissions and test validation. USDA is continuing to work on a CIS concept to continue to assess sampling and data management concepts for surveillance. The diseases include CSF, PRV, Swine Brucellosis, etc. Other parts of surveillance includes the Enhance Passive Surveillance that assesses syndromic issues within production, slaughter data and wildlife diseases issues. FSIS slaughter data is also being assessed for potential signals, this is helpful information to look at alternative data for early disease identification. SECD programs are also part of CIS. The plan is being reassessed for maximum efficiency and output. Information is being updated since the backlog of data since the HPAI outbreak. Feral swine are still a concern for VS and WS due to pseudorabies and swine brucellosis. PRV and SB still show up on sampling but not in the commercial component of production – are in feral swine. NVSL is working on diagnostic capabilities for China PRV. Data is being assessed on this strain to help US industry better prepare.

Seneca Velley Virus (SVV) is a new, emerging disease that is active in the industry. Dr. Bigelow covered the needs for veterinarians to respond in the event of seeing vesicles and lesions consistent with SVV. A new guidance document has been released to help provide information for vets and producers to best respond to the disease.

**USDA Influenza Surveillance Program Update**

Barbara Porter-Spaulding, USDA APHIS, VS

Dr. Spaulding provided an update on the influenza A virus surveillance program in swine. The data set has some limitations when assessing swine health data due to the submission of samples, anonymity and state-level sharing only. The collaboration with industry, veterinarians, state and federal partners help to assess and utilize the surveillance data to address health challenges with influenza. Reports to be shared with different sectors of the industry and with vets. The reports will be regionalized to help areas assist in managing influenza in their area. There will be internal and external reviews of the value of the program. When both reviews are complete, the intent is to sit down with industry and other collaborators for the future of the surveillance program. The current project is run off of no-year funding so funds will be used up and then the project is done. Steps are being taken to make the program more efficient and have better use of remaining funds and make them stretch out longer. The efficiencies for propagation of virus was implemented by NVSL that represent what is currently active within the industry.

These will be held available for later use if needed. Analysis of data and review of diagnostic standards is ongoing between USDA and NAHLN labs to hone in on CT values and create better efficiencies within the testing matrix. Dr. Spaulding provided the results of the different regions to date. Need to have surveillance to monitor the changes that occur in the influenza strains circulating in swine. H3N1 is out there and may (or may not) become more of an issue.

**Swine Health Information Center Update**

Paul Sundberg, SHIC

Dr. Sundberg reviewed the status of the newly formed Swine Health Information Center (SHIC) and activities with Seneca Valley Virus. July 1st, 2015 was the start of the SHIC funded by National Pork Board but it is a stand-alone entity. The focus and scope is on emerging diseases and how to assess data that can support continuity of business during such outbreaks. A big focus is on assessing foreign & transboundary production disease risk for on-going prioritization of the swine disease matrix. The Disease Matrix is a project that identifies potential disease threats and helps to define research needs and gaps in order to be better prepared for them.

Dr. Sundberg gave a brief update on the status of the Seneca Valley Virus (SVV) incidence. There are ongoing cases with SVV and need to make sure to hold those pigs from marketing if they are showing acute lesions of SVV. Here are different clinical presentations for the different strains of SVV that are seen: one strain is more vesicular and relatively mild; the other is more aggressive with accompanying lameness and including piglet mortality in young pigs. Sequencing is ongoing of the virus to identify potential origin. Some information that is gathered is from the Univ. of Minnesota Swine Health Monitoring project that evaluates disease status in sow herds. SVV seems to be in low prevalence since 1980's. However, this year has shown an increase in incidence and the need to assess it as a newly emerging disease and the other issues surrounding virus identification in plants. The virus has wide distribution within the US. Research for the virus is ongoing to assess the basic of disease such as transmission, duration of shed, screening for prevalence, epi surveying for the disease and risk factors, disinfectant efficacy and focusing on diagnostic capability such as sequencing (whole virus) and serologic assessment (elisa).

The SHIC is helping to coordinate efforts for the response to SVV and what to do in the face of disease. Working collaboratively with all stakeholders has been essential to getting information out to veterinarians, packers and producers as rapidly as possible. Coordination is ongoing with USDA FSIS for response to SVV at the plant.

Other areas of focus for SHIC include the China PRV strains. Working with USDA on assessing the strain and preparedness to detect and deal with this virus in the event it might get to the US. Clinically this strain is causing major swine health issues in China. So need to assess the virus here in the states and assess current US vaccines and ability to potentially protect against that virus. Ur current diagnostics will currently detect the China PRV strains both by serology and also by PCR. This work is currently ongoing. Kubovirus in China is also an issue so may be one to watch within the US. All info on SHIC can be found at www.swinehealth.org .

**Enhanced Passive Surveillance System: Swine Pilot Update**

Lindsey Holmstrom & Matt Cochran, Institute of Infectious Animal Diseases

Dr. Cochran provided and update on the AgConnect suite of tools at Texas A&M. The Enhanced Passive Surveillance (EPS) is real-time data collection and analysis of syndromic information that could potentially serve as an alert for an emerging disease or a significant shift is domestic diseases. It is applied out in the field with veterinarians reporting on a day to day basis. The value of the project is the integration of data into one system that can be reviewed and analyzed for animal health decisions. The following labs are currently messaging lab data into EPS: Iowa State University, University of Minnesota and South Dakota State University. Reporting for the project include healthy as well as clinical animals. There are many elements that can be incorporated into the reporting. Currently the swine app deals with the key data points and will start with minimal fields and add more as the project progresses. AgConnect is the computer operating system that can access different areas for production to incorporate all forms of data such as phylogenetics, movements, production data, laboratory data and syndromic information. The system can incorporate all sorts of customized data and then provide data back in a rapid format. But the data fields are also what practitioners are already using out in the field so the program is complementary for major health systems efforts. The operating system is based off of HL7 messaging so it is compatible

with other NAHLN messaging platforms. The program is progressing according to the stated 3-year timeline of the projects. Dr. Holmstrom provided a real-time demonstration of the EPS program.

**2012 NAHMS Update/CARB Update**
David Dargatz, USDA APHIS VS

Dr. Dargatz gave a brief overview of the activities for CARB (Combating Antibiotic Resistant Bacteria) plan. This is also in conjunction with evaluation of antimicrobial resistance activities. There are resources on the CEAH website for surveillance and AMR issues. There are a number of activities underway. The stakeholders are involved in this process. Discussions of feasibility are ongoing for surveillance stream data gathering. USDA is working with groups to identify priority of streams. There are no new resources however applied to this project, so have to deal with the use of current resources. Are looking at how to utilize data that has already been collected from other data streams (i.e. NAHMS) and determine how it might be used to look at existing trends if at all possible. Another part of this project, is to assess analysis of the most recent swine survey from 2012; this includes the antimicrobial data. Future activities will also look at this area of antimicrobial use and resistance. There is intent to look at key animal health pathogens. The assessment of animal health pathogens is in its initial phase. Another area of collaboration is working with industry and academia on gathering animal health data. Target is looking at what data to collect, how it will be reported and analyzed. International engagement is also a component of the CARB plan. USDA is actively engaged in stakeholder discussions to help in this arena. Dr. Granger also provided a brief update on activities for AMR and CARB. There will be a release of the 180 day update on the action plan. There has been little movement on this action plan due to financial constraints. Working with CDC on the infographic depicting the potential mechanism of resistant bacteria to humans resulting in illness to make it less controversial.

**PEDV Biosecurity Project**
Julie Smith, University of Vermont

Dr. Smith gave a review of the current activities for understanding implementation of biosecurity for diseases of importance. This project is a focus on people and understanding what that interaction between human movements and transmission of disease. This is a multi-disciplinary, multi-university team to address this project. There are four major goals to assess the issues at hand. The focus is on PEDV in the swine industry. Goal is to have tools available to producers at the end of the project. Will look at all factors that drive the implementation of a practice, behavior or policy that can impact animal health. Year 1 will focus on PEDV. A review was given on the modeling that will be using for this project, The model is an Agent-based modeling for livestock biosecurity research.

**Committee Business:**

No new resolutions were presented for 2015.
Chairman Snelson provided an overview of the 2014 resolution for ASF. USDA did have a response to the resolution. See response from the USAHA Resolutions from 2014 for actual language. There were no further comments on this resolution.

No other business was presented at this time. A motion was made to adjourn, Dr. Webb first to adjourn and Dr. Burkgren seconded. The meeting was adjourned.