

Report of the Committee on Foreign and Emerging Diseases
Chair: Tammy Beckham, KS
Vice Chair: Alfonso Clavijo, KS

The Committee met on October 27th, 2015 at the Rhode Island Convention Center in Providence, Rhode Island from 8 am to 5:30 pm. There were [x] members and [x] guests present. The Committee chair reviewed the purpose of the committee and the Vice Chair reviewed the response from the 2014 resolutions.

Time-Specific Paper Title.

Title: African Swine fever - on the move and dangerous. Should the USA be worried?

Chris Oura, BVetMed, MSc, PhD, MRCVS

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The major challenges faced in controlling and eradicating animal viruses include the complex and rapidly evolving nature of viruses, the complexity of the immune response to viruses, the lack of effective and available vaccines, the presence of insect and wildlife reservoirs and the rapid and uncontrolled spread of viruses within developing countries. These factors continue to affect the successful control / prevention / eradication of some of the most globally important veterinary viruses.

Probably the most worrying emerging veterinary virus currently threatening the global swine industry is African Swine Fever virus (ASFV). This virus spread from the South-Western corner of Africa to the Caucasus state of Georgia in 2007, where it was initially misdiagnosed, giving the virus the chance to spread far and wide before being correctly diagnosed. The lack of early detection and the implementation of ineffective control measures allowed the virus to spread across the Caucasus region and into the Russian Federation (RF), where it has been spreading for the past 8 years (2007-2015). In 2014 the virus entered the European Union (EU), probably through infected wild boar, and has continued to spread rapidly in both domestic and wild pig populations in the EU states of Estonia, Latvia, Lithuania and Poland into 2015. It seems that the virus is being maintained in the environment in these countries through circulation within the wildboar populations, although backyard and feral pigs may also be playing an important role in viral spread. One of the main reasons why ASFV has proved so difficult to control when it gets out of Africa is the lack of an effective vaccine. There are many reasons why the production of an effective vaccine has proved so elusive, which will be discussed.

In this presentation I will give a brief background of the virus (ASFV) and the disease (ASF) and will explain how the virus has managed to spread out of its African heartlands on various occasions in the past, including to the Americas. I will explain how and why the virus is continuing to spread within the RF and westwards into Europe, where it is now posing a significant threat to countries in Central Europe with very large pig populations, as well as to the largest swine populations in the world in China.

From a USA perspective, I will address the threat currently posed by ASFV to the USA and will attempt to answer the question – should the USA be worried? Various factors need to be taken into consideration in assessing this risk of ASFV entering the USA, including risks posed through the legal and illegal trade and movement of pork products between the USA and countries where the virus is currently circulating. It goes without saying that, within the highly interconnected world that we currently live in, the more countries affected by ASF brings with it a higher risk that free countries like the USA will become infected. Another equally important question to address is, if the virus did gain entry into the USA, is it likely to spread and become endemic, or would it be possible to rapidly control it. Many factors would contribute to this including the ability of the USA to rapidly recognise and respond to a disease incursion, the amount of feral and backyard pigs and their contact with wild boar, the population densities of wild boar in the country, the presence or absence of *Ornithodoros* soft ticks and the levels of biosecurity applied in domestic pig farms.

African Swine Fever virus (ASFV) is an emerging veterinary virus currently posing a severe threat to the global swine industry. This virus spread from the South-Western corner of Africa to the Caucasus

state of Georgia in 2007. The lack of early detection and the implementation of ineffective control measures allowed the virus to spread across the Caucasus region and into the Russian Federation (RF), where it has been spreading for the past 8 years (2007-2015). In 2014 the virus entered the European Union (EU), probably through infected wild boar, and has continued to spread rapidly in both domestic and wild pig populations in the EU states of Estonia, Latvia, Lithuania and Poland into 2015. In this presentation I will give a brief background of the virus (ASFV) and the disease (ASF) and will explain how the virus has managed to spread out of its African heartlands on various occasions in the past, including to the Americas. I will explain how and why the virus is continuing to spread within the RF and westwards into Europe, where it is now posing a significant threat to countries in Central Europe, as well as China. From a USA perspective, I will address the threats currently posed by ASFV, including risks posed through the legal and illegal trade and movement of pork products and the important question of, if the virus did gain entry into the USA, is it likely to spread and become endemic.

DHS S&T'S AGRICULTURAL DEFENSE PROGRAM OVERVIEW

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¹Department of Homeland Security, Science and Technology Directorate, Chemical and Biological Defense Division, Washington DC, USA

Narrative: An update of the activities of 2015 were provided to the FED committee. An overview of the current program initiatives with milestones from 2015 was provided. The Agricultural Defense Branch within the Department of Homeland Security consistent with the roles and responsibilities articulated in Defense of United States Agriculture and Food (Homeland Security Presidential Directive, HSPD-9). This includes a broad range of research in development efforts to enhance current capabilities and develop state-of-the-art countermeasures for high-consequence foreign animal diseases. This includes near- and long-term research and development for vaccines and diagnostics, in coordination with internal and external stakeholders. This consists of five main projects covering the breadth of an animal health response: Enhanced Passive Surveillance; Foreign Animal Disease Vaccines and Diagnostics; Foreign Animal Disease Modeling; Agricultural Screening Tools; and Livestock Decontamination, Depopulation and Disposal. The Agricultural Defense Branch funds most of their research through contracts, but there are multiple ways of working with agricultural defense projects within the Science and Technology Directorate including: 1) Grant; 2) Cooperative Research and Development Agreement (CRADA); and 3) Contract. The grant process is a competitive process with the deliverables to include publication, report, or completion of a project. The contract is also a competitive process in which the deliverable is a product or service. The CRADA is awarded by the Notice of CRADA intent, and either party may approach the other to initiate. The deliverable is a product or services agreed to on both sides, but no money is awarded from the Federal Government to the collaborator. More information is available at: <http://www.dhs.gov/contract-opportunities>.

Update: National Veterinary Services Laboratories

Dr. Beverly Schmitt, Director, National Veterinary Services Laboratories, USDA, APHIS, Veterinary Services, Ames, Iowa

Diagnostic testing at the National Veterinary Services Laboratories (NVSL) showed an increase in numbers compared to FY 2014. During the time period between Oct. 1, 2014 and Sept. 30, 2015, NVSL received over 42,200 accessions and reported over 400,500 tests. NVSL confirmed the first HPAI H5N8 detection in a gyrfalcon in December, 2014 and was heavily involved in the outbreak response throughout 2015. Confirmation testing and phylogenetic analysis was performed in the Diagnostic Virology Laboratory Avian Viruses Section and the NVSL Laboratory Resources Unit sent out over 139,000 BHI tubes and collection kits to the field. NVSL personnel were detailed to the outbreak or supported the outbreak control effort on site in Ames and a former NVSL/Center for Veterinary Biologics (CVB) building was converted to an Incident Command Post for field activities in Iowa. NVSL has contributed to

Veterinary Services planning for a possible fall outbreak in multiple flyways in the U.S. In May, NVSL confirmed a finding of vesicular stomatitis virus (VSV) infection (New Jersey serotype) in New Mexico. This was the 2015 VSV index case for the nation. Eight states have been affected and include Arizona, Colorado, Nebraska, New Mexico, South Dakota, Texas, Utah and Wyoming. NVSL provided laboratory support to a *Burkholderia pseudomallei* investigation related to non-human primates. NVSL provided bacterial culture of wildlife collected around the premises and all samples to date have been culture negative. NVSL's Pathobiology Laboratory/National Animal Health Laboratory Network (NAHLN) /CVB staff were involved in successfully addressing a Transmissible Spongiform Encephalitis (TSE) kit failure. Pathobiology is looking into the possible use of another commercial TSE kit. NVSL successfully completed an ISO 17025 renewal audit in May and June. In October, 2014, NVSL received ISO 9001 accreditation for budget and contracting, procurement, user fees, warehouse, sample processing, media prep, glassware, human resources, training and the NAHLN.

Update: National Animal Health Laboratory Network

Beth Harris, National Animal Health Laboratory Network Associate Coordinator, USDA, APHIS, Veterinary Services, Fort Collins, Colorado

The NAHLN was partially activated this year as part of VS' highly pathogenic avian influenza outbreak activities. Activities included redirecting samples to available laboratories; placing laboratories on standby to support outbreak testing, and deploying technicians to help with high-volume testing. Additionally, our staff developed a process for funding overtime work for deployed personnel, and defined criteria needed to set up a mobile laboratory for NAHLN testing during an outbreak. Also as part of the HPAI fall planning efforts, the NAHLN Program Staff have assessed current laboratory testing capacity, equipment needs and laboratory operation; updated the NAHLN activation plan; developed a standardized laboratory submission form; and communicated with NAHLN laboratories and commercial vendors regarding fall scenarios and planning needs.

The NAHLN is also providing laboratory testing for the ongoing Vesicular Stomatitis outbreak. This spring, NVSL validated and deployed a VSV PCR test to selected NAHLN laboratories. Once activated, NAHLN laboratories may test cases from clinically ill horses and other equids using both the PCR and the Complement Fixation assay. Laboratories are only approved for testing equines from their state. NVSL continues to provide confirmatory testing for new states, ruminants and any inconclusive results.

The NAHLN Coordinating Council met in April to assess information gathered as part of the final steps of the NAHLN Restructure planning. Earlier this year, a decision matrix was developed by the Council and NAHLN Program Staff to use in the decision making process. The main criteria of the decision matrix are based on the 2013 Concept Paper, self-assessment and key NAHLN mission factors. The decision matrix will be used to help determine the qualification level of each laboratory; APHIS and NIFA are now working through various funding options with the input of the Coordinating Council.

VS has been charged with implementing several activities related to Antimicrobial Resistance (AMR). A key objective is developing a standardized implementation plan for antibiotic testing in veterinary laboratories. As part of this, the NAHLN Program Staff has partnered with NVSL, CEAH and FDA to initiate a joint AAVLD working group that will address standardized methodology, data reporting and confidentiality issues. This group distributed a survey to laboratories this summer to gather baseline information on current antibiotic sensitivity testing and reporting activities, with preliminary results being reported at this year's AAVLD meetings.

Similarly, NAHLN has also partnered with the National Animal Health Reporting System (NAHRS) to form a joint working group to draft a laboratory implementation plan for the National List of Reportable Animal Diseases (NLRAD) which also includes emerging diseases. The group has developed a draft plan to be distributed for comment at this year's AAVLD meeting.

We continue to focus on support and training for quality management systems through collaboration with International Services, VS' Professional Development Staff, and AAVLD trainers for the annual Quality Management System Training that was conducted August 3-7.

Expanding laboratory messaging capabilities continues to be a high priority for NAHLN, especially in preparation for a fall HPAI resurgence. The number of laboratories actively messaging HPAI has increased, as well as those prepared to message if needed.

The NAHLN Methods Technical Working Group met face to face in April. Other activities included reviewing several methods comparison studies, and the ASF PCR dossier, plus designing and conducting an equipment comparison/suitability study. The Exercise and Drills Working Group completed the 2-part accessioning exercise and developed the AAVLD symposium that focused on HPAI lessons learned and laboratory emergency planning.

Update: Foreign Animal Disease Diagnostic Laboratory

Dr. Fernando Torres, Director Foreign Animal Disease Diagnostic Laboratory, Plum Island, NY. USDA, APHIS, Veterinary Services, Orient Point, NY

The Foreign Animal Disease Diagnostic Laboratory (FADDL) is one of the National Veterinary Services Laboratories (NVSL), where many foreign animal disease (FAD) agents are diagnosed and studied. An overview of the years diagnostic cases as well as diagnostic development efforts was provided to the committee.

Foreign Animal Disease Research Updates From USDA ARS Plum Island Luis L. Rodriguez DVM, PhD. Research Leader

During the past year the Foreign Animal Disease Research Unit at PIADC has continued to focus research efforts on foreign animal diseases; foot-and-mouth disease (FMD), classical swine fever (CSF) and African swine fever (ASF). An overview of the FADRU research activities for 2015 were provided to the committee.

UPDATE: CENTER of EXCELLENCE FOR EMERGING AND ZONOTIC ANIMAL DISEASES (CEEZAD)

Juergen Richt, Director, Center of Excellence for Emerging and Zoonotic Animal Diseases, Kansas State University

The Center of Excellence for Emerging and Zoonotic Animal Diseases (CEEZAD), based at Kansas State University (KSU), recently implemented the sixth year of its Strategic Plan. As a co-lead with the Institute of Infectious Animal Diseases (IIAD) in the Department of Homeland Security's Zoonotic Animal Disease Defense (ZADD), it is our mission to develop countermeasures against high-priority transboundary, emerging, and zoonotic diseases that threaten animal and human health. Our goals are to develop vaccines and practical field-use detection assays, studying the epidemiology of these diseases and to train the next generation of researchers/first responders.

During the recently-completed Year 5, CEEZAD researchers successfully demonstrated the efficacy of its DIVA-compatible, subunit Rift Valley Fever (RVF) vaccine in a previously-developed RVF sheep model. For cattle, initial immunogenicity testing was completed, along with developing a challenge model to use for upcoming efficacy work. The RVF vaccine is undergoing final development and the USDA licensing process by our commercial partner. Vaccine development for U.S. strains of highly pathogenic avian influenza (HPAI) is underway. Other initiatives include projects on novel vaccine approaches to African Swine Fever, point-of-need PCR tests for detection of various FADs, and development of a multiplex detection system based on MassTag PCR technology. Additionally in Year 5, CEEZAD began co-funding, with the National Pork Board, several vaccine, diagnostic, and epidemiology/modeling projects. Work will continue on developing web-based FAD education courses for veterinarians, students, and

homeland security personnel and workforce development initiatives, along with National Bio- and Agro-Facility (NBAF) transition projects.

UPDATE: Institute for Infectious Animal Diseases (IIAD)

Gerry Parker, Interim Director, Institute for Infectious Animal Diseases, Texas A&M Agrilife Research

The Institute for Infectious Animal Diseases (IIAD) was awarded as a Department of Homeland Security Science and Technology Center of Excellence in 2004, with Texas A&M University as the lead institution and renewed as a co-lead with Kansas State University's Center of Excellence for Emerging Zoonotic and Animal Diseases (CEEZAD) in 2010. The mission of IIAD is to conduct research and education to protect the nation's agriculture and public health sectors against high consequence transboundary, emerging, and/or zoonotic diseases. To accomplish this mission, IIAD leverages leading experts, researchers, and resources within major universities, minority serving institutions (MSIs), national laboratories, federal agencies, international organizations, industry, and other Centers of Excellence (COEs). IIAD's multidisciplinary teams address complex problems and challenges and are capable of rapidly addressing emerging issues and current gaps in the nation's ability to protect our agricultural and public health sectors.

IIAD focuses research priorities to help support and defend US agriculture as a critical infrastructure. Maintaining disease freedom is essential to protecting animal and public health and ensuring a robust economy. The IIAD mission helps support this goal through the development of research and education products that support our industries, state, and federal partners. The Institute has robust programs in zoonotic and emerging disease detection; information technology for enhanced decision support and situational awareness; as well as in the development of knowledge products, and education and training curriculum.

IIAD is a multi-institutional organization, with partners in 48 states and the District of Columbia, plus collaborations or training programs established with 17 international organizations or countries. These partnerships are critical to developing new capabilities under the IIAD portfolio that will significantly impact the nation's ability to prepare for, detect, respond to and recover from a high consequence transboundary, emerging and/or zoonotic disease.

Session 2: Outbreak reports, analysis, and implications: Special Session on Avian Influenza

The 2015 avian influenza outbreak: phylogenetic analysis of the H5N2 influenza virus. Dr. Mia Torchetti, Avian Viruses Section Head, National Veterinary Services Laboratories, Ames, IA.

H5N8 virus (H5N8 clade 2.3.4.4) originating from Eurasia (EA) spread rapidly along wild bird migratory pathways in the Eastern Hemisphere during 2014. Introduction of this virus into the Pacific Flyway of North America sometime during 2014 allowed mixing with North American (AM) origin low pathogenicity avian influenza A viruses generating new (novel) combinations with genes from both EA and AM lineages (so called "reassortant" H5Nx viruses). To date, the H5Nx viruses have been detected in the Pacific, Central, and Mississippi Flyways. These findings are not unexpected as the H5Nx viruses continue to circulate.

The USDA APHIS National Veterinary Services Laboratories (NVSL) collaborated with the USDA ARS Southeast Poultry Research Laboratory (SEPRL) and the Influenza Division of the Centers for Disease Control and Prevention (CDC) to generate the analyses for this report. Consensus data from whole genome sequence is used to monitor the virus evolution and assess risk to veterinary or public health based upon presence/absence of specific amino acid substitutions or protein motifs.

All viruses analyzed to date are highly similar, have an HA gene derived from the EA H5 clade 2.3.4.4, and are highly pathogenic in poultry. Both H5N2 and H5N8 were implicated in recent poultry outbreaks. Where there is molecular evidence that independent introductions as well as "common source" exposures

are occurring concurrently further field epidemiologic investigation is warranted. Poultry events in Pacific Flyway appear to be largely due to point source/independent introductions as were early Midwest events based upon network analysis and available epidemiologic data. Data for later Midwest events suggest point source as well as “common source” exposures occurring concurrently. States affected last appear to be largely due to common source/human activity.

Presently the risk to human health remains low; molecular markers associated with antiviral resistance or increased virulence and transmission in mammals have not been detected; however, virus monitoring continues with CDC.

This analysis includes samples collected between December 2014 to early June 2015 from 17 states (>240 viruses). While these viruses remain highly similar overall (>99% similar to the index viruses within subtype, as well as to the nearest Asian isolate (A/crane/Kagoshima/KU1/2014(H5N8)), analytical tools that identify substitutions along the hemagglutinin (HA), neuraminidase (NA) and internal proteins can improve our understanding of the virologic, antigenic, and epidemiologic features of the virus (refer to section on Diagnostics and Characterization for H5Nx viruses).

Speaker Biography (300 words): Dr. Mia Kim Torchetti joined NVSL in 2013 as the Avian Viruses Section Head in the Diagnostic Virology Laboratory at the NVSL. She has a broad background in laboratory networking, research and diagnostics, epidemiology, and biosecurity; earning her veterinary degree and master's in epidemiology at Colorado State University, and subsequently joining ARS in Athens, Georgia for her PhD and postdoctoral work largely focused on microbiology. While at the Southeast Poultry Research Laboratory, her initial focus was on rapid diagnostics for Newcastle disease, moving to influenza as the issues of highly pathogenic avian influenza emerged. Prior to the NVSL, she served as the deputy coordinator and South/Southeast Asia laboratory liaison for the Food and Agriculture Organization of the United Nations, Emergency Prevention Systems Lab Unit based in Rome, Italy. In that role, she worked closely with national veterinary authorities, and coordinated laboratory networking and capacity building primarily in Southeast Asia to address testing needs for control of H5N1 highly pathogenic avian influenza and other priority diseases. During her first year at the NVSL, incursion of a novel subtype causing illness in humans (H7N9 influenza) in China resulted in international collaboration across veterinary and public health. Dr. Torchetti and her team were included in a USDA Secretary's Honor Award submitted by colleagues from USDA's Agricultural Research Service (ARS) for their role in the coordinated ARS/APHIS response to the Chinese H7N9 Avian Influenza outbreak, providing critical scientific data necessary for control and diagnosis of the virus nationally and internationally.

AUTHORS/INSTITUTIONS: M. Kim Torchetti, Diagnostic Virology Laboratory, USDA-APHIS-NVSL, Ames, Iowa, UNITED STATES|

KEYWORDS: avian influenza, outbreak, phylogenetics.

State Animal Health Officials Perspective of Avian Influenza Outbreak: Dr. David Schmitt (State Animal Health Official, Iowa), Dr. Annette Jones (State Animal Health Official, California), Dr. Bill Hartmann, (State Animal Health Official, Minnesota). Moderator, Dr. Lee Meyers, Surveillance, Preparedness & Response Services, USDA VS.

State Animal Health Official Perspective of Avian Influenza Outbreak – 2015, Dr. David Schmitt, SAHO Iowa.

Iowa experienced its first case of Highly Pathogenic Avian Influenza (HPAI) H5N2 in April of 2015 in a turkey farm. This was followed by additional cases of HPAI through the middle of June. There were a total of 77 HPAI infected premises, which consisted of 35 turkey commercial meat production flocks, 22 chicken commercial table egg production flocks, 13 pullet flocks, 1 breeding flock for a mail order hatchery, and 6 backyard flocks in Iowa confirmed with HPAI H5N2.

The Iowa Department of Agriculture and Land Stewardship requested the first USDA Incident Management Team for assistance at the time of finding HPAI in a large commercial layer operation. Control zones were established at the first HPAI case and State and Federal staff began area surveillance testing of all poultry within Control Zones. As additional cases of HPAI developed the Governor of Iowa issued an Emergency Declaration and the State Emergency Operation Center was activated to bring in additional state agency support.

The Iowa State University Veterinary Diagnostic Laboratory, which is a member of the National Animal Health Laboratory Network (NAHLN), was contacted at the time of the first diagnosed H5 positive premises and they provided avian influenza testing services operations seven days per week with all PCR positive samples referred to USDA National Veterinary Services Laboratory (NVSL), Ames, Iowa. Permitted movements of all products within and out of Control Zones was performed by IDALS and additional staff. The Emergency Management Response System (EMRS2) database was used for management of the HPAI outbreak and assistance provided by USDA CEAH for entering of permits into EMRS2 database.

There were several challenges along the way, which expounds upon the essence of cooperation and patience to overcome the challenges and as recovery continues to restocking the importance of well-planned biosecurity practices for the future.

Lessons Learned, Dr. Bill Hartmann, State Animal Health Official, Minnesota.

Dr. Hartmann provided an overview of MN “things that worked” and lessons learned: In summary, biosecurity is essential. Biosecurity reviews for commercial poultry operations and Biosecurity protocols and monitoring for responders. 2). Depopulation of affected farms as soon as possible. To do this you need trained, medically cleared, fit tested personnel, Adequate options for depopulation, adequate equipment for depopulation, streamlined appraisal process, and laboratory capacity. You must have predetermined carcass disposal options. Identify a location for an emergency management team to operate out of in the area where commercial poultry are raised.

Avian Influenza – Industry Perspective John Glisson, DVM, PhD VP of Research, U.S. Poultry & Egg Association

The recent avian influenza outbreak provided an opportunity for the poultry industry to learn a great deal about those things that work well in such a large emergency and those things that need improvement. One of the largest difficulties was the depopulation and disposal of birds on infected farms. This was particularly problematic on large cage layer facilities. Simply removing the birds from the cages required a tremendous amount of hand labor. Disposal methods varied but were generally insufficient for the large layer farms. Both depopulation and disposal were generally much easier to accomplish rapidly on farms where birds were reared on the floor. Composting of carcasses and manure inside these houses proved to be a very effective method.

The diagnostic laboratory system worked well during this outbreak. The NAHLN laboratories and NVSL provided the timely testing results required to make confirmed diagnoses. Although things were not perfect in this regard, it is frightening to think of tackling an outbreak of this size without such a well prepared national diagnostic laboratory system. Both chickens and turkeys developed initial clinical signs relatively slowly following infection which provided a challenge to achieve as early diagnosis as possible. One of the difficult issues involved the movement of poultry and poultry products out of the control zones for marketing. The control zones encompassed many non-infected healthy flocks and testing to confirm that the flocks are not infected and permits to move birds and products often involved multiple states, which can complicate the matter considerably. Interstate commerce during a widespread outbreak is disrupted to some degree. States having been working together to try to improve the permit process required for interstate movement.

The level and type of biosecurity used for many years on poultry farms proved insufficient in many instances during the recent outbreak. The whole poultry industry has focused its efforts to improve biosecurity at every level. Everyone realizes that this is the vital step in improved disease control.

The potential future use of vaccines during an outbreak of highly pathogenic influenza is controversial and opinions range widely in the poultry industry. The main point of agreement within the industry is that vaccination should only be used as a tool for eradication, not as a means to maintain the health of flocks.

Session 3: National Bio- and Agro-defense Facility Updates

NBAF Outreach, Dr. Marty Vanier, Department of Homeland Security

Now under construction in Manhattan, Kan., NBAF will be a state-of-the-art, biocontainment laboratory for the study of diseases that threaten both America's animal agricultural industry and public health. The laboratory is expected to be operational in 2022.

The NBAF Program Executive Office, along with its partners in USDA APHIS and USDA ARS are taking this opportunity to create a new way of doing business by developing an innovation ecosystem around NBAF that creates new and different relationships with the local community, local and national stakeholders, collaborators, research universities, and the animal health industry. The goal is to leverage industry, university, and government partnerships to accelerate the development and commercialization of infectious disease diagnostic, therapeutic and protective technologies.

The Strategic Partnership Development program is developing plans at the local and national level consisting of specific activities and efforts to identify and reach out to existing and new partners.

NBAF Summit and Action Items, Dr. Keith Roehr, State Animal Health Official, Colorado

Summary of purpose of NBAF Summit and Action items and take aways from the Summit (Pioneering Partnerships) that was held in June, 2015 in Manhattan, Kansas.

Updates from USDA APHIS, USDA ARS, and USDA DHS on activities related to NBAF transition. Dr. Michelle Colby (DHS S&T Agriculture Defense Branch Manager; Dr. Beth Lautner, Associate Deputy Administrator, USDA APHIS VS; Dr. Cyril Gay, Program Leader, USDA ARS.

Agency updates were provided on the progress of the transition of the research and diagnostic portfolios for NBAF. A review of the potential research and diagnostic portfolio and the enhanced capabilities and capacities at NBAF were provided.

“Session 4: Diagnostics, Surveillance, Modeling and Research”

FMD Global epidemiological situation

Pascal Hudelet, DVM. Merial, 29 Avenue Tony Garnier, 69007 Lyon, France

Foot-and-mouth disease (FMD) virus is highly contagious, infects a variety of domestic and wildlife species and is divided into seven non-cross-protective serotypes. Its presence restricts trade opportunities for endemic countries and presents the greatest economic threat to U.S. animal agriculture.

This presentation will review the latest global situation regarding circulation of foot-and-mouth disease (FMD) using reports of the past two years coming from the World Reference Laboratory for FMD and other laboratories from the OIE/FAO FMD Laboratory Network, focusing on transboundary movements of FMD virus that have caused outbreaks in Asia and Africa and an ever changing threat for FMD-free

countries. Based on genetic and antigenic analyses, the distribution of FMDV in the world has been subdivided into seven regional pools. Virus circulation and evolution within these regional virus pools result in constantly changing needs for appropriate vaccine selection.

Compulsory vaccination programs have proven to be a key component of any FMD eradication program, as long as the quality and the potency of the vaccines used has been closely and independently monitored. High potency vaccines have proved their ability to overcome even significant antigenic drift, limiting the occurrence of new variants.

For the FMD-free North America, rapid access to sufficient stocks of the relevant vaccine is a critical component of its preparedness program to respond to an outbreak of FMD in the continent.

Continuity of Business in an FMD Outbreak. Barrett Slenning. Associate Professor, North Carolina State University. Raleigh, North Carolina.

Dr. Slenning provided an overview of the continuity of business plans.

Syndromic Surveillance for Transboundary Animal Diseases, East Africa, a pilot project

Corrie Brown, DVM, PhD, DACVP, University of Georgia, and Thomas Graham, DVM, PhD, CEO, Veterinarians Without Borders, US

In most developing countries, arguably the weakest link in the chain of national animal health is awareness and reporting from the field. The African Union InterAfrican Bureau on Animal Resources (AU-IBAR) initiated a program on enhancing awareness in the field on the part of those who have daily contact with the animals. Collaborating with the University of Georgia and USDA-FAS, AU-IBAR produced a field-friendly, low-literacy, graphic-heavy field manual geared to enhance farmers', traders', transporters', and butchers' recognition of public good animal diseases, and to inform them of reporting channels necessary to maintain the national animal health and economy. Veterinarians Without Borders, working with AU-IBAR, secured funding from USAID Farmer-to-Farmer to deliver training to this group of potential surveillers, using the manual. Two countries were selected for beta-testing this training. Through the grant, VWB volunteers are deployed to Uganda or Ethiopia to deliver a series of two-day trainings over the course of a month, working through 8 government districts, in cooperation with agriculture ministries. This training serves to enhance awareness among those closest to the animals, strengthen connections between farmers and the district veterinary offices, and provide US-based veterinarians with knowledge of smallholder agriculture in the developing world and awareness of transboundary animal diseases in the field.

Title: "Farm Biosecurity: A Reassessment of Feasible Benefits in an Outbreak"

Dr. Richard Horwitz

The subject of this presentation is conventional wisdom among agricultural authorities on how to sustain livestock operations in an outbreak of contagious disease, such as FMD. The evidence comes from official plans for permitting select farms to continue shipping milk from cows in Control Zones to processors and attendant research. (The full report is available on-line, on the website for the [New England Animal Agricultural Security Alliance](#) (NESAASA) under the title: "[Biosecurity, Infection-Control, and Continuity of Dairy Operations in FMD Response.](#)")

The report is also, in part, a justification for aspects of the [New England Secure Milk Supply Plan](#) that differ from other SMS plans in the U.S., particularly in its emphasis on flexibility and feasibility of requirements. Key to that justification is a recognition of conflict in response aims and limitations in the feasibility and "the science" of response tactics.

Albeit for good reasons, much of that science is both thin and contestable (e.g., on effective emergency response, contagion in real-world contexts, and the risks-versus-benefits of particular biosecurity measures). Analogous research on infection control in human healthcare facilities is considerably

stronger but still, by CDC measures, “weak.” Nevertheless, that research as well as recent studies in agricultural science confound some of the conventional wisdom on farm biosecurity (e.g., on formal programs for training and certification of people who clean and disinfect, dwell times for disinfectants, and the preference for disinfectant over detergent in reducing environmental sources of contagion). A major lesson of this assessment is to shift the focus of remediation from indirect to direct transmission, from environmental microbicide to simple standard precautions.

**Foreign Animal Disease and Emergency Preparedness Training
Dr. Paula Cowen, USDA APHIS Professional Development Staff**

Presenting an overview of training on Transboundary diseases in USDA, APHIS, Veterinary Services for the past year. We will also look at the training done in the face of the Highly Pathogenic Avian Influenza outbreak in 2015 as well as plans for the future under our Multiyear Training and Exercise Program which was initiated in 2012 and is now fully developed.

Committee Business:

There were no resolutions from the FED committee. A recommendation to bring discussions on collaborations with Cuba as relationships open up with Cuba.

OTHER NOTES: