

## REPORT OF THE COMMITTEE ON FOREIGN AND EMERGING DISEASES

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The Committee met from 8:00 a.m. to 5:30 p.m. on October 23, 2007 at John Ascuaga's Nugget Hotel, Reno, Nevada. Attendance varied through the day, from 80 to 120 attendees, with 149 signing the attendance sheets collected at the end of the day. Drs. Corrie Brown and Alfonso Torres presided over and conducted the meeting.

Opening comments were provided by the Chair and Vice-Chair. The purpose statement of the Committee was reviewed as well as protocol for membership on the Committee. Alfonso reviewed the highlights of last year's meeting and responses to 2006 Resolutions were reviewed.

Presentations began with a Panel on avian influenza (AI). Eric Hoffman, Associate Deputy Administrator, United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), International Services (IS) presented Capacity Building Efforts on behalf of Dan Sheesley, Deputy Administrator, APHIS-IS. APHIS has a new initiative called International Technical Regulatory Capacity Building (ITRCB). The ITRCB supports the United States policy objectives by enhancing developing countries' ability to trade and encompasses training, meetings, foreign visits, workshops and other areas. Rich Pacer will be the first ITRCB Program Manager.

The Highly Pathogenic Avian Influenza (HPAI) International Coordination Group, (ICG) commonly referred to as the Fusion Group activities were reviewed by Joe Anelli, Director. The group started with a Presidential Initiative, National Strategy for Pandemic Influenza. That strategy had 27 action items specific for agriculture and the ICG was created to address these. The initial goal was to eradicate H5N1 from the world to prevent human pandemic, and has since been modified to carry out long-term capacity building, with the goal of establishing sustainable and reliable disease control program. The ICG is organized around a National Incident Management System (NIMS) concept and they have been active in supporting multiple endeavors in the parts of the world where HPAI is a problem or a risk.

USDA-IS Experiences with HPAI in Egypt, was given by Linda Logan, APHIS Coordinator for Middle East, North Africa and East Africa. Of the 30 countries in this region, 13 have had H5N1. HPAI was first recorded in Egypt in February of 2007 and spread rapidly throughout the country. Commercial sector, which had grown significantly in recent years, was drastically impacted. HPAI is entrenched now and humans are the sentinels. Currently there is funding from USAID and the agricultural sector is receiving support from the United Nations Food and Agriculture Organization.

USDA Support of HPAI Control in Southeast Asia was presented by Dr. Petrus Wicaksana, Indonesia, and Bunna Um, Cambodia. Numerous staff have been added since the outbreaks began and there have been many programs instituted to help with HPAI control in the region, including wet labs, workshops, epidemiology training, and laboratory enhancements.

A panel on foot-and-mouth disease (FMD) followed next. The Committee's Time-Specific Paper, Development, of new vaccine strategies to control FMD, was delivered by Marvin Grubman. The paper is presented in its entirety in these proceedings.

An Own Goal – FMD in the United Kingdom, 2007, was given by Paul Gibbs, which was a chronology of the FMD outbreak in the UK in 2007. The disease discovered in cattle on August 3, was caused by a virus that was used in a batch of vaccine manufactured on July 16 at Merial, a facility that shares the compound with Pirbright Institute for Animal Health. Over the course of the next five weeks, there were a few outbreaks - each was quickly contained. The path of the source virus was determined. At Pirbright, virus escaped from a manhole that had a poorly fitting cover with gaps around the edges. The effluent should have already been contaminated by citric acid but it wasn't. The rains flooded virus to the surface. Two soil heaps that had been removed from the area around the manhole covers were put into trucks taken out and driven past the index farm.

FMD Modeling and Surveillance, presented by Andres Perez, was a review of the developing system for global animal disease surveillance. The main objective has been to provide a tool for decision making. Information streams were tapped, databases organized, and daily FMDNews listserve established. Models of disease were created. Bioportal, a global surveillance system, was demonstrated.

Emerging diseases of fish was the next panel. First was viral hemorrhagic septicemia (VHS), delivered by Alfonso Torres, Cornell University, on behalf of Paul Bowser. A rhabdoviral disease of fish, VHS has moved from Europe to North America, and is now causing massive die-offs in the Great Lakes. There are several genotypes of Vesicular stomatitis virus (VSV) - IVb is the strain seen in the recent outbreaks. Origin may have been from marine fish off the Atlantic Coast, moving through the St. Lawrence River, or through transport of fish. Virus has been seen so far in 28 different species of fish. There is concern about spilling into the commercial industries.

White spot disease of crustaceans was presented by Don Lightner. The disease emerged in Asia in 1992, spread to many parts of the world, probably reaching the Americas in frozen products that were imported for value-added reprocessing. The causative viral agent affects at least 50 species. In February of 2007, the disease broke in Louisiana. Current management strategies include increased biosecurity, use of Specific Pathogen Free (SPF) shrimp stocks, restricting farming to the cool season.

A panel on Federal Programs on Foreign Animal Diseases was next. Research updates, Foreign Animal Disease Research Unit, Plum Island Animal Disease Center (PIADC), was given by Luis Rodriguez, Research Leader, USDA, Agriculture Research Service (ARS). The empty capsid vaccine was already reviewed by Grubman. Elizabeth Reider has developed a recombinant killed FMD virus vaccine that is still in the proof-of-concept stage. Manuel Borca has made an attenuated DIVA CSV vaccine that is moving through to the early development phase. Infrared thermography is being used for diagnosis of FMD in infected animals three days prior to the onset of visible lesions, and has good promise for use in an outbreak. VSV studies using black flies have determined site-specific means of transmission.

Research updates, Southeast Poultry Research Laboratory was given by David Swayne, Center Director. Wild bird monitoring for AI in North American waterfowl continued. Inoculation of the Asian strain of H5N1 produced disease in many wild bird species. Data suggests the wood duck would represent a sensitive indicator species for H5N1 HPAI should it enter North America. Swans were very susceptible with high mortality. Geese had lower mortality but were better as asymptomatic shedders than swans. For diagnostics involving AI, modifications to the Reverse Transcriptase-Polymerase Chain Reactor (RT-PCR) protocol to decrease inhibitors helped to markedly decrease the percentage of false negatives. In Newcastle disease research, flies fed on exotic Newcastle disease-laden milk carried the virus in their gastrointestinal tract for as long as three days, indicating that fly control will be critical in eradication campaigns.

National Veterinary Services Laboratories (NVSL) Updates, were provided by Beth Lautner, Director, NVSL, USDA-APHIS-VS. Construction continues on the Ames Modernization projects, with great progress. In July 2007, the BSL-3 Ag Large Animal Housing and Training Facility opened. The Laboratory and Administration Building will

be completed in February 2008. Accreditation to ISO17025 was received in December 2006. A North American Animal Health Network to harmonize diagnostics among US, Canada and Mexico was launched in February of 2007. Last year, there were 130 FAD investigations, of which seven were Priority 1. International capacity building was conducted this year with Kazakhstan, Afghanistan, Republic of Georgia, providing excellent opportunities for laboratory staff to work with field samples. The NAHLN continues to add new laboratories, and there are now 37 labs in 33 states. Robotic equipment has been supplied to over 30 laboratories to provide scale-up capabilities for high throughput.

Department of Homeland Security (DHS) Update on biologic countermeasure development was given by Larry Barrett, PIADC Center Director, and Tam Garland, Branch Chief for Agriculture Security, Science and Technology - The top goal of the Targeted Advanced Development (TAD) Program is to minimize infection, transmission, and economic impact of a natural or intentional introduction of FMD among US livestock. DHS at Plum Island focuses on the countermeasures pipeline, with the goal of putting products into the National Veterinary Stockpile. There are three initiatives in Modeling. The Joint Modeling Operations Center (JMOC) maintains stabilized, version-controlled models for use by policy and decision makers. Also The Research and Policy for Infectious Disease Dynamics (RAPIDD) is being developed in collaboration with Fogarty International Center, National Institute of Health (NIH). The Center for Research at the Interface of Mathematical and Biological Sciences (CIMBS) is a joint project with NSF scientists.

Linda Detwiler reviewed Efforts to Enhance Recruitment through Liaisons with Veterinary Schools. Funded by APHIS, the program has been run through the Center for Public and Corporate Veterinary Medicine at the University of Virginia-Maryland, and became active in January of 2006. The role of the program is to promote careers with APHIS-VS, and to coordinate externships. Over the last year, Linda has visited all of the schools of veterinary medicine, delivering the message to over 2000 students. Number of applicants to paid summer positions and externships continues to grow. Feedback is excellent.

Alfonso Torres briefed the Committee on the Performance, Vision, and Strategy (PVS) program of the World Organization for Animal Health (OIE). This program was funded by a grant from the World Bank, and early development was at IICA, under the direction of Kevin Walker. The PVS is a tool for good governance and can be used to establish a baseline of strengths and gaps, through a standardized assessment of national veterinary services. About 80 people have been certified by OIE to evaluate countries. There are four main categories for evaluation: human and financial resources; technical authority and capability; interaction with stakeholders; access to markets.

Vicki Bridges gave an overview of the Foreign Agricultural Organization (FAO) Crisis Management Center (CMC). The purpose of the Crisis Management Center is to improve rapid response to local problems with potential global repercussion. CMC is a joint FAO-OIE effort, and includes additional linkages with the World Health Organization (WHO). CMC has been used to send teams out into the field for HPAI. Further developments needed include more training on Incident Command System, expanded roster of trained experts, and enhanced linkages with permanent country representatives.

Paula Cowen, USDA-APHIS-PDS reported on Veterinary infrastructure building in Iraq and Afghanistan. Accomplishments in Afghanistan have included: establishment of a veterinary pathology laboratory, field necropsy training, first Afghan Veterinary Association Conference, National Animal Health Program planning, and sending key Afghan veterinarians for training in the US. Activities in Iraq have included a workshop to rebuild veterinary infrastructure, bringing Iraqi veterinarians to the US for short-term training, and the development of a National Animal Health Plan. For both countries, several shipments of textbooks have been organized for dissemination.

Eric Hoffman presented Dan Sheesley's paper on the Screwworm Program in Panama. APHIS completed construction of a new screwworm rearing facility in Panama. This new plant would address political concerns as well as inefficiencies of transporting the flies from the current facility in Mexico. The first x-ray sterilizing unit arrived in Panama by mid-2007 and is fully operational. Sustainable production levels of sterile flies already started. By December 2008, the Agency should have this facility with 100 percent sustainable production levels of sterile flies.

Bruce Akey reported on Accelerated Implementation of Integrated Surveillance. National Animal Health Surveillance System Steering Committee was a direct outgrowth of the Animal Health Safeguarding Review. National Surveillance Unit (NSU) at Center for Epidemiology and Animal Health (CEAH), coordinates VS surveillance activities. NAHSS Steering Committee represents stakeholders and guides and supports surveillance design, planning, and implementation. NAHSS is working toward a comprehensive, integrated system.